

AUTOBIOGRAPHY OF AN IMMIGRANT

Autobiography
— of an —
Immigrant

M o h a n A n a n d a

Autobiography of an Immigrant

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To my colleagues and friends—

For making the hard and dark days brighter and better.

To my teachers—

For your generosity in nurturing my young mind.

To my mentors—

*PR Ramakrishnan, Richard Feynman, Jim Dyer, Bill Pickering,
Roger Broucke, Bill Sjogren, HO Van Patten, Brad Jones, and
Gerry Chase—for opening up a world of limitless possibilities for
an immigrant like me.*

To my family—

*For the unconditional love and belief in me and simply being
there through all of life's highs and lows.*

To my parents—

For EVERYTHING.

This book is for you.

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FOREWORD BY JAYA ANANDA

When I found out I was writing the foreword to my grandfather's autobiography, his masterpiece, I was thrilled. My grandfather has been working on this book for as long as I can remember. Therefore, it is my great honor to be asked to contribute.

When I started writing, I wondered what I could possibly say that would do justice to all that he has done with his life. My grandfather is, by all means, a very accomplished man. He is the smartest man I know and is a positive force for good in this world. He is someone who has always believed in me and supported my dreams. He is the one who taught me never to fear reaching for the stars because I have what it takes to achieve anything I put my mind to.

How can I capture that feeling in a mere foreword?

Well, I thought I'd start by telling you, dear reader, a story of some amazing, shared moments between my grandfather and me. Unfortunately, it appears that he values my company as much as I value his, for he seems to have remembered all my favorite memories of us together and already put them into

this book. Since stories are not an option, I've decided I shall simply regale you on all that he has taught me, and hopefully, that shall suffice to share with you a fraction of the respect I feel for him.

Imagine for a moment, if you will, having a person in your life who will always take your side and support you unconditionally. For me, this person is my grandfather. He is, like I said, an extremely accomplished man. But it is not his numerous successes that make him one of a kind. No, instead, it is the attitude with which he approaches every day and everyone. The world could use more people like him. That is why this book is so unique and so utterly essential. To understand his journey is to empathize with his losses and to enjoy his successes. It is to see the world through his eyes and to experience the road he has taken to get where he now is in life. While you experience his journey through his story, you will acquire an inside view of the struggles and triumphs of what it is to be an immigrant searching to define the American dream. I am a better person because of what my grandfather has taught me, and I think anyone who reads this book will be as well. I hope you enjoy the journey.



PREFACE

The world as we know it is changing; in fact, it is shrinking. What used to be distant and difficult to access, is now within our reach and at the tip of one's fingers. The effect of the various activities of humanity has necessitated a shift, and this has affected everyone.

Today, migration is one topic that can't be ignored. Thanks to the roles played by technological and social advancement on one hand; and war, famine, and environmental destruction on the other, we see a global shift from place to place by people seeking better lives. Migration has been a totally acceptable act even from early times, if you think about it; but today, the phenomenon has become a global challenge and, for the most part, a controversial one.

It is easy to rule out migrants as faceless masses looking to move and find better lives, even if it is at the expense of the comfort of others; but rarely do we pause and consider that these migrants are indeed human beings with real challenges. These migrants who once had homes and security, have new challenges once they find themselves on foreign soil. They,

too, contend with a lot of challenges as they journey towards resettlement, kick-starting their lives from the ground up and making the most of the new opportunities presented to them.

My autobiography is a story of a migrant who left the comfort of a modest home in faraway India and did what he had to do to make a living. The objective of this book is multifaceted, however simple. One aspect of the book is to reach as many people as possible, knowing very well that not everyone who reads this book is a migrant. I want to ensure that there is something of benefit in this book for everyone; and yes, I must admit that achieving this feat isn't going to be easy, but I shall try. I feel that everyone who reads this book should have their spirits lifted in some way.

In many ways, my life story is comparable to the life stories of millions of people who have come to this great country, the United States of America, with unlimited hopes and aspirations. Ordinarily, the life story of a first-generation immigrant has numerous instances of adventures in varying degrees; many of which include immense creativity to overcome the many hurdles and difficulties I had to face, the bravery and confidence to confront difficult circumstances and disappointments head-on, the unbelievable resolve to move forward with a positive attitude, and the joy experienced at every point of the achievement and accomplishment, no matter the size.

In the course of putting this book together, I celebrated my fiftieth anniversary of coming to the United States. And as I reminisce about the past five decades, I am compelled to agree that the journey has been a series of mind-blowing experiences of anxieties, surprises, jubilations, disappointments, happiness, and all other emotions one can imagine.

Fifty years is no joke; it is a million footsteps from all sorts of goodies in a single package. And so, I thought to myself that to commemorate such an amazing journey, I could come up with a book, documenting my adventures in the United States during these illustrious years. In addition, my wife, being a practicing neurologist, recently complained about me being somewhat too forgetful; this had led to growing pressures from her to undergo a full medical check in order to ascertain whether or not I am experiencing early signs of dementia or Alzheimer's disease, which I certainly hope is not the case.

Even though I do have some trouble remembering the names of people whom I haven't been in contact with recently, I have been resisting any such evaluation with good reason. So, in light of the realization that there may be a negative impact on my memory, I have become motivated to document my life experiences and memories before I start losing them. I also thought my experience, if it were written in a story-like fashion, would have some benefit to my children, my grandchildren, and perhaps even for other young people.

I'm also inspired to encourage the younger generation as they march forward; recognizing the fact that they need encouragement in such difficult times as they aspire to make their dreams a reality. If you are quite young and reading this book, then encouraging you is one of my primary goals; and this is regardless of whether or not you are an immigrant.

I realize that today, many young people find themselves in countries that aren't necessarily their native countries; the reason for such journeys surely differs from person to person. Some travel to Europe or other first world countries, in search of quality education, job opportunities, or simply to find safer

lives. Regardless of what has necessitated such a move, the fact is that the world is full of people facing enormous challenges. So, even though I can hardly be classified as young, it doesn't erase the fact that I can still identify with younger generations in a number of ways.

I do recognize that the measure of my challenges as a young migrant might be nothing compared to today's unique challenges, but it certainly had the same impact back then as it has today. This means that I can easily relate to many young non-natives living in America or any part of the world today, and I consider myself the right kind of person to relate to younger generations about the challenges of migrating and how to make the most of new opportunities. For those who have just made it into this country, even for some who have been around for quite a while but haven't been able to fully adapt and integrate, I would say the walk isn't easy at all; there are simply so many issues to contend with at the same time. My goal with this book is to encourage you with my stories and wealth of experience as an immigrant. It would be my pleasure to stand with you as you face your fears, take on new challenges, and aspire to reach for greatness.

The fact remains true that most young people struggle to adapt to their new environment; and this can have many different causes. These reasons may be superficial or deep-seated, but if these difficulties are allowed to flourish, they can become stumbling blocks which will stand in the way of settling down and making progress.

First, there's the fear of the unknown. Finding yourself in a new environment, totally different from your ancestral land, more advanced and more beautiful, can send fears running down

your spine. *Can I live here, alone? Will I be able to relate to all these smart people? Can I behave myself enough not to break any laws?* These kinds of questions do arise, and the truth is, there are no easy answers for them. My intention is to point out, through my many experiences, how I was able to rise above the fear of the unknown and live freely.

Another reason why we struggle to adapt is the massive shift in cultural orientation. At one time, you were living freely amongst friends and family, embracing your customs and practices with no hesitation, but now, you find yourself in another nation, where other cultures and ways of life may seem completely foreign. The struggle to blend in can lead to feeling as though you don't belong in this new place, but this struggle can be overcome.

The journey can be rough, especially when you intend to uphold some of the ideals that you consider sacred or unbreakable, like wearing certain pieces of your native or religious attires, a hijab, for example. I had my own struggle in this area as well. My stories will illustrate how I tried to maintain my identity even as I did my best to become a thriving part of my new home.

I will also encourage young people who are struggling with homesickness; the desire to see family and the challenge of loneliness. I do understand that in today's world, unlike the one when I first migrated, it is much easier to stay in touch with family and loved ones while abroad. The wonders of technology have given us the gift of connection in a way that I was not able to experience as a young migrant.

In my day, it took ages for letters to be delivered, and even more time to receive replies; and due to the difference in time zones (India has a time zone difference of about twelve hours with America), I didn't have the luxury of calling my family any time I wanted. I had to wait for particular days and particular times. In spite of today's availability of instant communication, the problem of loneliness still persists. Admittedly, chatting and calling cannot effectively substitute for physical relationships and companionships. These real problems stood before me; but I was determined to make the most of my opportunities in the United States. I never allowed my desires to bring me to a halt.

As you will later see, I capitalized on being alone to focus and concentrate so that I could achieve great things. I also used the occasion to make new contacts within my new home country, so that I was able to have friends and family I could rely on during difficult times.

Apart from adaptability issues, which every migrant encounters, there are also issues of maximizing one's potential. It is common for a migrant to be stifled by their new environment, and they begin to underperform. I encountered this when I first migrated and began my studies as a student at California Institute of Technology (Caltech) in Pasadena, Los Angeles.

At first, I thought of my peers as more privileged, therefore likely to be more intelligent than I was. Back in India, I wasn't raised by poor parents, but I must admit I didn't graduate from the best of high schools. So, measuring up to my new peers felt insurmountable. I had to take deliberate steps to ensure that my self-esteem wasn't drowned in fear.

The climate also has its own effect on migrants. Just imagine the feeling of waking up to a cold snowy morning, when all you ever knew were hot, sunny days back home. Something as simple as a change in the weather can cause anxiety and make adapting much more difficult. As you will see, I did what I had to do to ensure that the weather didn't get the best of me. But at the same time, I knew that I was alone in my adopted home, and that becoming sick without any loved ones around to take care of me was a situation I had to avoid. So, I resolved to make the most of my situation and try to make connections and develop new relationships.

Proving one's worth often isn't necessary when you are on your own turf; but the average immigrant constantly feels as though they must prove themselves to others. Personally, I am of the opinion that such motivation is driven by fear. Migrants feel they have to show their worth to their host one way or another in order to garner support and respect and gain companionship. A migrant can become caught in the web of pleasing people, even when he isn't living his best life.

This was one of my struggles, and I believe this struggle is shared by young people today when they migrate to new places. You will see later that I made the best out of this by getting over the feeling that I needed to constantly please others. I convinced myself that there was absolutely no worth in trying to please others if it came at my own expense.

Statistically, immigrants have been proven to be more successful entrepreneurs than their hosts. This phenomenal feat is due to sheer will; knowing very well that they have already taken one of the most significant risks they could ever take, they are willing to take more risks to succeed. A migrant

cannot be caught taking a nap at work because failure is not an option. Due to a migrant's natural tolerance for taking risks, it can lead to new educational experiences as well as starting businesses from the ground up. These are the kinds of challenges that can seem impossible if you aren't comfortable with risks.

Another thing to consider is that when migrants live among foreigners, they can be abused because of their skin color or their religious beliefs. I didn't experience such abuse, but I knew people who did. My long walk has taught me that actions shape peoples' mentalities about other people, nations, and races.

Lastly, migrants may struggle to communicate effectively due to language barriers. If you migrated to a nation where the language or mode differs significantly from the language spoken in your home country, it can be quite challenging to fully integrate. For me, I was lucky. I was taught English back in India, so I didn't find this to be a major challenge. However, my accent and appearance always gave me away as a foreigner, and this affected my learning and adaptation in certain ways, but I remained persistent because I was determined to become a part of this society. For some who aren't as privileged as I was, the impact can be massive and horribly frustrating.

My intention in writing this book isn't to simply amuse you, but to inspire and encourage you. I realize that I have had the privilege of walking a road that could be described as unpredictable at best. Sadly, while I have written a number of scientific papers that were published in prestigious journals, I must confess that I have no prior experience with writing an autobiography. In this book, however, I don't want to

write as a scientist or an academic. I want to write this as a man who has faced numerous challenges and prevailed. I want to write this as an encouragement for those who find themselves in difficult situations, trying to fit in in a new place. I also want to write this for those who have never emigrated before, so that they can better understand the struggles and fears of immigrants. In today's world, there is so much conflict regarding immigration, and I feel as though this stems from a lack of understanding. I know that this book will not end these conflicts, but I want to do my part to make the experience of immigrants more familiar to those who do not understand it.

Thanks to time spent with my grandchildren, I gained a reasonably lengthy experience of telling stories. Even though most of the ones I share with them are fiction, they are stories, nonetheless. I have learned that in order to hold their attention and curiosity, the secret is suspense! That way, they are always eager to know what happens next. That said, I do not intend to create any such fictitious suspense in this autobiography, but I have tried my best to make it enjoyable to read and create an ongoing attentiveness about the need to further explore the twists and turns of my life.

I learned from a colleague of mine that in any form of communication, in order to get the message across as clearly as intended, one has to say the message about three different times to successfully get the message across. I am not planning on littering this book with constant repetition; I have, however, used this technique a number of times when giving presentations regarding startup ventures to raise capital from venture firms, and it has always worked. In this memoir, I have chosen to repeat certain events, taking a look

at them from different perspectives, all aimed at deepening the understanding and significance of such events.

Another reason why I was convinced to write this autobiography is to narrate my life events and document them with the historical changes in the world during this era. Who knows, maybe future historians may find it attention-grabbing and worthwhile when comparing life experiences of other people during similar periods, and reach conclusions regarding particular changes in society, opportunities, working environments, economic upward mobility, and other such related measurements. It would bring me great happiness to contribute to reshaping documented history for the better.

One final thought on the purpose of writing this autobiography: it is my lifelong desire to be a positive role model for future generations. I understand that my experiences can serve as a source of inspiration, learning, and maybe a warning to any curious learner. My desire is to provide proven track records in my life that will help others reach their goals. One thing that will be made clear as you read further is that life is unpredictable. At every step of the way in life, one is faced with the need to make decisions, choosing one from many paths in order to go forward. Since life does not provide rehearsal opportunities, decisions have to be made with adequate care and consideration. However, such decisions are often made by most without sufficient consideration, and the eventual decisions that emerge may not turn out to be the best decisions. Therefore, it is important to note that once such decisions are made, and they turn out to be detrimental, the opportunity to make amends may not be readily available and may cause one to perpetually live with such decisions.

Life is full of surprises; but we must also learn to set some goals. It is unimaginable to navigate your path in life without some end goals, even though in many cases, the odds may not be on our side, and unknown events can become major obstacles. It is vital to have a clear picture of the objectives one wants to accomplish even though the path to these goals may not seem obvious at the outset.

It is crucial to be aware that the goal is more valuable than the path and often opportunities of varying paths may be available to reach the same goal. Depending on the circumstances and conditions of your life, you have to be sensible about choosing the right path for you. Over the past five decades, I have encountered enormous fears and frustrations, pain and regrets, and life lessons that came at too high a price. I have also encountered tremendous help and guidance, friendships and loyalties, massive returns on investments, and experienced love and acceptance. All these played a part in shaping me to be the man I have become in the fields in which I excelled.

As a way of summarizing what I have earlier talked about, here are the three primary goals that pull this whole memoir together.

The first purpose is to document my life's journey as much as I can remember and be able to create a historical document that can be used in whatever form it can benefit my children, my grandchildren, and the generations thereafter. Many immigrants to the U.S. tend to assimilate the lifestyle in the U.S. too quickly and let the traces of their own beginnings fade away. Often, they forget to teach the values and cultural aspects of the countries and communities where they came from, so the generations after them are unable to get the benefits of

the unique aspects of their roots. Several immigrants have followed the same path in bringing up their children and this book may be able to help them get a better understanding of their parents' childhood, heritage, and culture.

The second purpose is to share my experiences, struggles, and opportunities to overcome the challenges I faced during my life. Through this memoir I may be able to serve the younger generations who might benefit when they face similar or comparable challenges and opportunities in their lives.

The third purpose is to present a form of a case study for those who are interested in starting a new business. They may learn from my journey and how I was able to navigate the life of an entrepreneur.

For easy navigation, I have also divided the book into five parts; each with distinct peculiarities.

First is my early background, some general observations, and opinions on social issues. Then, I will talk about my education and early work in the United States. Third, we will look at my transformation from being an employee to an employer, the business ventures I am or was previously engaged in, and my involvement in some innovative work. Part four tells the story of my family; and finally, I wrap up my memoir with some reflections about life, happiness, career, and business.

I am sharing true stories from my life, so I did my best to keep all facts as true and genuine as possible. This book, in many ways, is the sum total of all of my life's experiences. I hope you find value in it. Please have a good read.

PART I



GENERAL OBSERVATIONS

In high school, I was a lanky boy with thick, dark, curls that dangled like loose power cables and deep, brown eyes bearing the reflection of innocence. One day, at the end of science class, I approached my teacher for some guidance about the homework assignment. It was one of those dusty afternoons, typical for the Indian climate, and as I walked up to his desk, I had to wipe beads of sweat from my forehead.

The assignment had asked us to reflect on what science taught us about life. An essay. About science. I was more of a math and science whiz than a writer, so I didn't know what to make of this. I reached his desk and asked for help – any help – with the task.

“Mohan,” he said, “as you grow older in life, always take the time for some sober reflection. Reminisce on your accomplishments and failures. By so doing, you will be able to maximize all your acquired knowledge, leveraging upon them to make yourself a better person.”

Those words have echoed around my thoughts since the moment I first heard them. Throughout my life, at least so far, I have made a habit of following that advice. I periodically pause, taking stock of my actions, achievements, and misfortunes. This self-analysis has doubtless helped me in being an optimist, setting newer, higher goals, and approaching the future with confidence and dexterity.

In this section, I would like to share some thoughts that were borne out of my many reflections. These are purely my opinions, and in some cases a combination of facts and truths that when applied, can breed a happy life. They are organized as vignettes, bite-sized pieces of wisdom in which I share the insights I've gleaned from over fifty years living in the United States. I hope you find in here something to help you on your own journey. Who knows, you may also want to start the habit of taking a pause to write down your own reflections about life. It doesn't matter if you filled up the bin with crumpled papers as I did back in high school or wiped out everything you've typed on your iPad. Just pause and reflect. When you write the first words that will stay on the paper or your digital notes, you'll then be able to write more.

I'm glad I started, and that I started early. I don't recall what I wrote in that science essay, but I know my first words were not profound – not nearly so precious as the advice my teacher gave me. But it all led to the day I decided to write this memoir to share my life's reflections of the last fifty years.



50 YEARS IN THE UNITED STATES

I stepped off the airplane. It was hot, dry, and the sun was blinding. It was southern California, and it was now my home.

The year 2017 marked exactly fifty years since I first stepped foot in the United States of America. I bounced, springs of excitement in my steps, towards the exit of Los Angeles International Airport with a lightweight piece of luggage containing everything I believed I ever needed. I couldn't believe that I was in America, the vast land of opportunity!

Once I left the airport, I looked at my watch – it was still on Indian time. I wasn't sure what time to adjust it to, so I walked over to a corner store to check, when suddenly the smell of cardamom whiffed past my nose. It was so distinct I had to look up and around to check where it came from. *Or was it just my imagination?*

It could very well have been because even though I was already in the United States, I was still between two worlds. India is still very much a part of me. But that day, I fell in love with America.

I remember some of my deepest thoughts and desires as I prepared to make the trip from India to the United States; even while on the plane long before it touched down on the tarmac. I recall that one of my foremost objectives in the United States was to make the most of the opportunity that I had been given. I had committed to studying hard and graduate at the top of my class. I also planned to return home to India immediately after my studies were over. But my objectives soon changed as

I was exposed to knowledge and learning. I was beginning to learn that our plans must be rigid enough that we can commit to them, but flexible enough that we can make changes when we need to.

Back in India, I must say we didn't have a favorable view about America and Americans. Most of our judgments about them were biased and inaccurate due to a number of factors which I will explain later in the book. But as I got to know more about my host nation, its history, people and culture, its type of government, the Constitution, and how estimably it valued the life of every one of its citizens, my perspective began to change. It wasn't long before I began to consider the possibility of living in and making a life in the United States once I was done studying at the University.

I knew that with the right kind of connections back in India, there was a good chance for me to succeed. But when I considered pursuing my career in the United States, I worried that the odds of success were far higher. Success in the United States would be based purely on merit rather than having high level connections. For me, this was all the convincing I needed. I soon learned that the United States was indeed the land of the free, where I was treated equally wherever I went, without any element of stigmatization. This level of freedom, however, will change which I will tell you more about as you keep reading.

That was 1967, over fifty years ago as of this writing, when I moved from India to Pasadena, California, a small but beautiful city on the outskirts of Los Angeles. I was a young Indian boy full of dreams and ambition, ready to conquer the world. This city located in Southern California was, and still is, beautiful. I

remember the sight of lovely houses, perfectly trimmed lawns, clean landscaping, and year-round soothing weather. The people were friendly and hospitable, eager to lend a helping hand at every turn. I quickly fell in love with Pasadena and without any doubt, the city loved me back; that was where my long-time romance with California started. It's no wonder that I have lived in different cities in California for all of the fifty years that I have been in the U.S. Except for work, vacations, and travels, I wouldn't dream of leaving. And on those short trips, I always look forward to returning home. I have lived in California since the sixties, and I wouldn't have it any other way.

Throughout my time in the United States, I have witnessed this beautiful city, Los Angeles, metamorphose into an economically vibrant city with a booming entertainment industry, giving room for the influx of people and the consequent expansion of its borders. But it has not all been good. I have witnessed ugly events, some of which I sometimes would rather not recall.

In 1968, riots broke out when Martin Luther King, Jr., the famous leader of the civil rights movement, was assassinated at the Lorraine Motel, in faraway Memphis, Tennessee. The heat generated by his assassination found its way to the streets of California, leaving some dead, many injured, and thousands of dollars' worth of property vandalized and looted. As I watched the destruction play out on the nightly news, I got scared myself.

In 1992, five LAPD officers were caught on video using excessive force, brutally battering a young Black man named Rodney King. When it went to trial, the jury decided to acquit

the five officers. The acquittal was met with anger. Soon, riots spread like wildfire throughout the Los Angeles metropolitan area. I once again saw carnage in my city – I walked down streets filled with broken windows, the sounds of shouting, and smell of smoke in the air. People were mugged and killed, and I told my family that we had to stay at home until it was over. The property damage alone was estimated to be over \$1 billion.

As I walked the streets and watched the news, I was transported back nearly 25 years to 1968. Once again, a Black man had been attacked, and the city could not contain its anger. *Would things ever change? Would there be justice?*

The LAPD were overwhelmed and could not keep the peace, so governor Pete Wilson deployed the California Army National Guard, then President George H.W. Bush deployed the 7th Infantry Division of the U.S. Military. By the time peace and calm returned to the city, sixty-three casualties were recorded, over two thousand people were injured, and about twelve thousand people had been arrested.

After the Rodney King riots ended, a friend remarked to me that these two events, taken together, had left a bitter taste in the mouth of the city. Yet, it is also true that Los Angeles has thrived tremendously, emerging as one of the most beautiful cities to call home and leading the nation in some major positive developments. It takes great effort to maintain the livelihood of a big city such as Los Angeles and Pasadena has, without a doubt, done its part to contribute to the progress of the entire city.

When I first arrived, the United States of America had a lot on its plate, both at home and abroad. On January 20, 1969, Richard Milhous Nixon succeeded Lyndon Baines Johnson as the 37th President of the United States of America. During Johnson's administration, the nation had taken a huge leap forward in the form of civil rights legislation. It was a new dispensation, but the rapidly unfolding changes had only just begun to sink in. So, even with the passing of new laws, the suspicion that existed between people of color and their white counterparts wasn't exactly over; many foreigners still treaded with caution as they attempted to live their lives.

Members of the Black Panther movement led peaceful protests across the country, while other people of color sought equality through lawsuits. Numerous historic events passed: the death of legendary boxer Rocky Marciano, the landing of Neil Armstrong on the moon, the continuous striking of the California Zodiac killer, the rise and fall of various religious and political cults, the dominance of Pelé in world of football, and many other significant events.

In the midst of the challenges, the Vietnam War was at its crescendo, breeding theories, controversies, and political, economic pressures from within and without. The war led to various obstructions, particularly in the academic sphere, affecting the studies of many people as the need for volunteers arose. As I will tell in greater detail later, I very narrowly skipped the Vietnam military enlistment.

While many people supported the war at the time, even volunteering their time and service to the cause, that wasn't the case with everyone. Nobel Prize winner George Wald was very vocal about his opposition to the war, as were other people

across the country. The president did his best to manage the situation by signing peace treaties with the leader of South Vietnam, Nguyen Van Thieu, and pledging to bring our troops home.

The treaty required an end to hostilities throughout Vietnam, the pulling out of U.S. troops, the unconditional release of prisoners of war, and the amalgamation of North and South Vietnam through nonviolent means. Furthermore, elections were to be held while the South Vietnamese government remained as regent. It was also stipulated that North Vietnamese armed forces in the South were to cease every form of advancement and reinforcement. President Richard Nixon introduced his famed “Vietnamization” policy, elaborating the framework for his exit strategy. Though the terms of the treaty were later broken by South Vietnam, it was a pleasure to see the last batch of remaining Americans airlifted back home in March of 1975.

The nation felt such relief when we beheld the sight of the last American soldier leaving the shores of Vietnam in 1973. It was just two months after the signing of the Vietnam peace treaty in Paris by the various representatives of North and South Vietnam, the United States, and the Vietcong. It was a bittersweet moment, for the war had claimed the lives of about fifty-eight thousand Americans. It had divided the nation.

Each of these events weighed on me. I was determined to make the most of the rare opportunities I had been given in America, but so often peace and stability seemed to be swaying on the edge of a cliff. Yet, I knew I was limited in my ability to affect the greater outcomes; all I could do was press on, through sheer will and doggedness, and take care of my own family. Yet

I could not fully shield them, or myself, from the intermittent taser-like shocks from all that was happening around me.

One day, I was meeting with a friend, talking about the stresses affecting our nation.

“I’m not sure how much more we can handle,” I told him.

“Who do you mean by we,” he replied, “you and I, or the nation?”

I paused, then said “both.”

For a moment, we were silent. Then, he looked me in the eyes and said “you’re right... we’re all in this together. You don’t show your fears often – you’re not conspicuous – but we’re all in this together. And that means we’re all affected, but it also means we get to work through it as a team.”

He was right. By living through such trying times, by sharing in struggles, I had become a member of this society. Of course, in no area did I participate as much as the space race.

It was a battle of supremacy over space exploration between the Soviet Union and the United States. The game of wits was in full gear and the need to outdo each other was second to none. This led many scientists and engineers to push the boundaries of their creative minds. Though Russia put their Sputnik satellite into orbit before America could, we managed to send a man to the moon first. In 1969, Neil Armstrong finally made it up there and set his foot upon the soil of the moon. It was a sight to behold! Even from a fuzzy image on a small, black-and-white television screen, the excitement was palpable. People rejoiced in the streets and congratulated one another on what

a great thing we had accomplished. The team that worked hard at NASA, the media that covered the entire event, and the spectators all felt they were in this together – they forgot about racial profiling and embraced one another, regardless of how color had separated them. This to me was one event that birthed newer levels of cohesion within the American nation. Of course, my participation was not in Neil Armstrong’s mission, but other endeavors, which I’ll discuss later.

The nation saw more success in the following decades. The Berlin Wall, a heavily protected concrete fence that had tangibly and figuratively separated Berlin, fell in 1989. Germany was unified; hostility between East and West Germany ended. Before it fell, the wall had included sentinel towers strategically positioned along the massive concrete walls. Alongside it was a wide area known as the death strip, equipped with anti-vehicle ditches, blockades, and other forms of defenses. Politically, the wall meant different things to different groups of people.

The German Democratic Republic (GDR) referred to the wall as the Anti-Fascist Defense Embankment. The West Berlin city régime occasionally referred to it as the Wall of Shame, in reference to the lack of freedom of movement it allowed. Along with the German border (IGB), which was separate from the Berlin Wall and demarcated the border between East and West Germany, the wall came to represent the Iron Curtain that divided Western Europe and the Eastern Coalition during the Cold War.

The fall of the Berlin Wall was a thing of joy for the nation because, to many, the wall was an emblem of dispute; it represented a divided, hurting people. Many German citizens

were unable to reunite with their families and loved ones on the other side of the wall. The United States, who played all the diplomatic cards it could play, strove for a reunified Germany, so the wall's eventual destruction was all the good news we needed to hear.

I remember the launch of the World Wide Web in 1991 by Berners-Lee, opening the door to larger frontiers which before then only existed within the fringes of people's imaginations. Berners-Lee worked very hard and made contact with many experts and businessmen, including Steve Jobs and Robert Cailliau. The commencement of the web as an openly accessible service on the internet came on August 6, 1991, when Berners-Lee launched the first ever website. Appropriately, the site was filled with information about the World Wide Web project, having full descriptions about the web and how to go about using it. The site's URL, <http://info.cern.ch> was hosted at CERN, on Berners-Lee's NeXT computer.

But it has not all been triumph. We all endured a blanket of grief on September 11, 2001, when the nation was startled by terrorists who carried out a cruel, orchestrated attack. What a sad day it was. I remember it like it was yesterday.

On that fateful day, my wife and I were in Trivandrum, the capital city of Kerala, India on business. Enveloped with horror, we witnessed it live from the lobby of the hotel where we were about to share a meal with an American couple who had just arrived in the country. We called to inform them that we were on our way, to which the husband assured us that they would be ready and down just in time to meet us.

We arrived as scheduled and alerted them, and they again assured us that they would be down in a few minutes. About fifteen minutes later, we still hadn't seen or heard from them. I was a little puzzled as to why they hadn't showed up or called, so I redialed their number. The line rang once, twice, three times... it kept ringing, until finally the wife picked up the call.

"Hey," I asked, "it's been twenty minutes. Is everything alright?"

"No," she replied, "there has been an incident."

Without knowing yet what it was about, my heart began pounding. I stood up and readjusted my focus, inserting my hand into my pocket. I began to feel sweat on my forehead.

"What happened, are you guys okay?" I asked, hoping that she wouldn't pour out any more bad news.

"No, we are fine" she responded, "please go over to the front desk and tell the receptionist to switch on the television. See for yourself," she added.

I hung up the call and looked at my wife. From the look on my face, she instantly knew something was wrong. We quickly headed over to the front desk and requested that the television be put on. The receptionist obliged.

The screen revealed to us, in real time, what was happening to the Twin Towers of the World Trade Center. We had missed the first plane crash which hit one of the buildings. As we watched, a crowd began to form behind us. People became curious and gathered to watch and listen. As we were watching, the cameras caught the second plane as it plunged into the

second skyscraper. The sky darkened with smoke, and people screamed. It was completely horrific. I held my wife in my arms as she could no longer watch, tears running down our faces. Everyone around us was in shock. For a while, we stared at the television screen, our minds numbed with the horror of what had just happened. Finally, I tore my eyes away and called our guests. Clearly, they were devastated by what happened and were in no disposition for a dinner party. We cancelled our reservation and headed back home.

The September 11 attacks were a series of four terrorist assaults carried out by the radical Islamic terrorist group al-Qaeda against the United States and its citizens on the morning of Tuesday, September 11, 2001. The attacks brought about two thousand, nine hundred and seventy-seven casualties, over twenty-five thousand injuries, and caused at least ten billion dollars in infrastructure and property damages. In addition, months and years following the attacks, there still have been reports of people dying of 9/11-related melanoma and respiratory diseases.

Four passenger airliners operated by United Airlines and American Airlines, all of which left the airports in the northeastern United States heading for San Francisco and Los Angeles, were taken over by nineteen al-Qaeda terrorists. Eventually, two of the planes, American Airlines Flight 11 and United Airlines Flight 175, crashed into the North and South towers, respectively, of the World Trade Center complex in Lower Manhattan. From the TV screen, you'd think there was water beneath that had devoured the twin towers like they're made of sand, leaving only mist and thick dust in the air; except it's not the kind of mist that brings you to a blissful, dreamy state. It sent everyone aghast at the gripping nightmare of

seeing symbols of America's strength crumble into dust. What was supposed to be one of America's representation of stability became a reminder of the country's fragility in just less than two hours.

As a result of the impact of the crash on the badly damaged skyscrapers, it only took about an hour and 42 minutes for both 110-story towers to completely collapse. Due to the large amounts of debris and the consequential fires, all the buildings within the World Trade Center complex eventually collapsed, as well as the 47-story World Trade Center tower. Other surrounding buildings experienced various degrees of damage as well. A third plane, American Airlines Flight 77, crashed into the Pentagon, that is the U.S. Department of Defense headquarters in Arlington County, Virginia; the crash brought about a partial collapse of the building by the west wing. The fourth plane, United Airlines Flight 93, was directed toward Washington, D.C., but after its passengers challenged the hijackers, it crashed into a field in Stonycreek Township near Shanksville, Pennsylvania. Nine eleven is recognized as the deadliest terrorist attack in human history and the sole deadliest incident for firefighters and law enforcement officers in the history of the United States, with 343 and 72 killed, respectively.

Being an employee at the defense department, I knew I could no longer stay in India for any longer. Soon, my wife and I packed our bags and headed back to the U.S. Even though there were very high levels of restrictions when it came to entering the U.S. at the time, we had not experienced difficulty at all.

As had been expected, America bounced back, and in later years I again saw what I have come to love about the country. What was fallen came back up from the ground. In 2008, the nation made great strides in the election of our first Black president, Barack Obama.

The election of Obama was a step in our history that was long overdue. With all that the United States of America had been through – the struggle for the emancipation of Black people, the fights for civil rights – it was about time the U.S. made a strong statement to the world that it had matured and had grown into the ideals it had always claimed, a place where liberty was indeed practiced and respected. And such a statement was made through that historic election. As people teamed up to support the first ever Black president, the entire atmosphere was charged with anticipation of change and hope.

In hindsight, I must say I am not as confident as I was before about whether or not I would be treated equally, and here is why: Back in 2017, the government rolled out a policy, which I considered repressive and in total violation of the rights of United States citizens regarding unauthorized searches and seizures.

The policy, which was set to take effect on October 18th of the same year, sought to subject all social media activities and internet searches of immigrants to monitoring by the United States government. This was also to affect naturalized citizens, of which I have been for more than forty years. I do realize that the constitutionality of such a policy should be determined by the Court, but it raised some questions for me, and many of these have remained unanswered or have answers that I consider unpalatable.

I believe that such a policy is a clear reflection of the prevailing mindset of a section of the American population. This population, maybe not exactly a majority, holds a misguided notion that immigrants and naturalized citizens are the cause of their current poor economic status. This cannot be further from the truth, but in difficult times, people often go looking for someone to blame for their problems. We have seen this take place throughout history. This philosophy is just as wrong now as it has always been, but it is a powerful way of controlling a population.

I, however, remain optimistic that regardless of current attitudes about how immigrants and naturalized citizens are being treated on American soil, the United States, in the long run, will still maintain the lead when it comes to freedom, equality, and innovation amongst the league of nations.

My beliefs and values have been shaped by events throughout my life. My parents, back in India, passed on their values, which have continued to change as I've grown and lived in America. I will give you a peek of what it's like growing up in India following India's rich culture and traditions. I built, rebuilt, and established myself as one of the finest in my field. I have raised my family the best way I could. At the same time, these historical events I lived through played vital roles in reshaping me to be the person that I am.

Over the years, as I lived and worked in this great nation, I've had the privilege of traveling to all fifty states and some of its foreign territories like Puerto Rico and the U.S. Virgin Islands. These travels helped rework my perception about America, its people, and its allies. As I viewed various cities, interacted with different people, appreciated land masses, canyons, coastlines,

and observed incredibly beautiful mountains, islands, parks, and natural wonders, my perception of the country shifted. To say that the United States is extremely blessed is a great understatement. While I believe that true beauty resides within its people, I cannot deny that the land itself is beautiful, too.

While my more than fifty years in the United States molded a large part of who I am today, I would not be here if not for my parents and the lessons they instilled in me before I stepped foot in America and as I find my way living in this beautiful land on my own. What I learned from them is what I want to share with you.



LESSONS FROM MY PARENTS

I grew up in a small town in Kerala, India near the coastline, and this must be the reason why it has been easy for me to fall in love with California due to its proximity to the ocean. The lush vegetation surrounding our villages was a usual sight. People ate what they grew, worked hard during the week and went for a picnic on the weekends with the whole family – grandparents, aunts, uncles, parents, children, and cousins all together – a true Indian tradition. But these are all just a cherry on top. The best gift I've received coming from India was being born with the best parents one could hope for.

My father was a staff member with the Employees Union, and later a politician, and he committed his life to improving the working conditions of the less privileged. I remember him in his study, head bent while wearing his reading glasses, scrutinizing intently the thick stack of documents resting on

his desk, with some more waiting for this attention. He was often coming home exhausted from late nights at the office as a result of his demanding job and the political battles that come with it. How he still managed to make time for the family, I only figured out when I became a father myself.

One of those days, I asked him some questions. Seeing him slumped in the chair and all his energy sapped after a long day at work made me question why he chose to go through such an ordeal for other people.

“Why do you keep fighting? Why give so much of yourself to a job that so often gives so little in return? I was old enough at the time to figure out what my father was doing. Father looked over to me, only moving his eyes. He paused, seeming to consider the question, before he spoke.

“It is futile to better your life and never raise an arm to help others. Remember that all you would ever possess is nothing but a gift; a gift given to you to bless others,” he said.

It took me many years to fully understand this. Eventually, I came to realize that I could not work only for myself. Every effort I put into furthering my career must translate into yielding a better society. My father was a defender of the defenseless. Regardless of what he would gain, he always stood up and spoke in defense of the less privileged. Seeing it firsthand from his everyday work gave me the desire to replicate this virtue. As a result, it has been one of my core values to improve society while building my life.

As my father said, “Families make up society, and societies make up the provinces, and eventually, the nation. So, virtuous

families only mean a virtuous society, and virtuous societies will mean a more prosperous nation.”

My father believed that to help society become better is a duty, as society helped you succeed to begin with. I consider this truth from my father priceless. It's little wonder I have adhered to it throughout my life and have even taken deliberate steps in inculcating it in my children and grandchildren.

My mother did not work outside the home. She was a stay-at-home mother and was good at it. Unlike my father, who was gentle, soft spoken, and easy to be around, my mother was an astute disciplinarian but a loving soul. When I was disappointed, I could count on my mother to hold me and comfort me, and the tension would wash away. She was hardworking and kept the house in perfect order. She also made sure we never took for granted the things we had.

Both my parents talked the talk and walked the walk. They had an unbeatable partnership, and from their lifestyle, I saw virtues which I imbibed and practice to this day, virtues like simplicity and contentment, honesty and fairness, and kindness and affection. My parents taught me never to crave what I cannot afford to the point of obsession. My character was formed at quite an early age by simply watching and listening to them.

One day when I was a child, I was working on a task for school when I became frustrated and wanted to quit halfway through. *I'll take one bad grade*, I thought to myself. *What could it hurt?* So, I went out into the yard and began to play. About 30 minutes later, my father came out to talk to me. “Why did you not finish your work?” he asked. I explained my thinking,

somewhat sheepishly, and he replied “you should not start something you do not intend to finish. Why put in a little bit of your best when your best is what is expected from you?”

I paused, confused. I thought I was going to be reprimanded, but I didn't seem to be in trouble. He continued: “What is worth doing is worth doing well. You will succeed at last.”

His words remain indelible. My father taught me to never give in to pressures to quit at any moment in time. He taught me to be resilient and tenacious, fighting to the very end till I see the set goals come to fruition. This vital lesson helped me a great deal when I came to the United States to pursue my education and even after that. With every challenge I encountered, I remembered my father's words and simply kept moving, and in no time, I began to triumph.

My parents never undermined our individual ambitions and desires; they simply guided us the best way they could. Even though they only could afford a modest lifestyle, they never prevented us from dreaming big and getting the best education. Growing up, the education in India, even though mostly inexpensive and in some levels free, wasn't a top priority to most parents. But I was blessed to have parents who valued education more than most. They encouraged us all to strive to be the best. As a result, I enjoyed lots of scholarships growing up, and these weren't based on mere connections, but on merit.

We didn't have luxuries. In fact, we didn't even know what luxury was. We simply lived and enjoyed every season. Modesty was the key word for our home. We were never taught to go out of our way to make an impression on others, and neither were we

taught to live beyond our means. Father made sure to provide all necessities, while mother ensured that we never abused what we had, no matter what. I had the pleasure of learning many qualities from both my parents, such as regarding elders, being kind to others even to strangers, helping people, always being honest first to yourself, then to others, being patient and easygoing, finding good in everyone, finding joy even in the most challenging circumstances, and always being optimistic.

But it wasn't just their words. My parents practiced what they believed. My mother has always been a stay-at-home mom taking care of household activities, and my father was working for an employees' union helping to uplift the working and economic conditions of workers. I watched him dedicate his whole life to the betterment of the underprivileged and witnessed his simple way of life and his sincerity, honesty, affection, and care towards less privileged workers. I believe that my character and my thinking were formed from an early age by watching and listening to him.

I have been very lucky to have parents of such high moral values who never told me what I should or should not do. They had modest means and they were happy with what they had. They were interested in getting a good education for their children, and at the time when I grew up, education was incredibly inexpensive. I had the fortune of getting scholarships throughout my education.

Looking back, I had a very happy childhood. I had a modest, but comfortable life and had the privilege of learning to respect my elders, be kind to others, help people, be honest and patient, and to find good in everyone. I learned how to be optimistic – to find happiness even in the most difficult circumstances. I

learned that, when you embark on a journey, you should finish it with confidence, and you must do all things for the good of those around you.

I believe parental guidance is vital. I also believe that one of the basic ways character is formed within a child is by observing their parents' way of life. What we see our parents do stays with us for a lifetime, and we emulate them as we live our own lives. With these lessons and core values, I learned simply by watching my parents live their everyday lives. I came to America with a stable foundation that I relied on as I adapted to a new culture. But it wasn't all that easy, and you'll see why in a moment.



ADAPTATION TO NEW WAYS AND CULTURE

I entered the library in my small town in India, pulled several volumes from the shelves of dusty old books, and sat down at the table. I had surrounded myself with encyclopedias, travel guides, and several novels. They were all about life in California. I opened the texts and dove in. I had always been a diligent kid, so when I was scheduled to move to the growing town of Pasadena, California, I did what any diligent kid would do: I studied.

The books I found showed me pictures of bustling cities with towering skyscrapers, wide beaches with pristine waters, and vast forests of ancient redwood trees. I breathed in the information, inhaling the images. I did not want to be taken by surprise. I read about the cities and the people, the climate and the weather, and the culture and practices. I read anything

and everything about the United States I could get my hands on. And in no time, I was ready for my new experience. *Or so I thought...*

Upon landing in the United States, I was jolted by a rude awakening. It turns out that books can only do so much, and some things just didn't add up as I began my life in Pasadena. I didn't have to get further than the streets of Pasadena to discover that my books had not fully prepared me. As I walked down the street, I encountered many things that challenged and shocked me.

The first was the sheer speed at which people moved. I could step out onto the street, at what I thought was a normal pace, when suddenly I was pushed this way and that by people rushing to get to wherever they were going. In India, the streets may have been full, some of them may have been unpaved or unmarked, but the pace was *leisurely*. The Americans, though, were always busy, bustling from one place to the next as if it were a race. They walked as if they were always late or forgetting something.

Back in India, if I stopped to ask someone for directions, they would help me, then proceed to engage me in long conversation. *How was I feeling that day? Why was I going to my destination, and what would I be doing later?* When I stopped to ask an American for directions, though, he just gave me the information and sent me on my way!

The people of America were polite and very helpful, but not interested in matters that had no bearing to them. So, you could go to a park, sit and read a book or play a guitar, and this would rarely catch anyone's attention to the point of

drawing a huge crowd. But in India, people took pleasure in minding other people's business. The people of India, even though significantly more economically disadvantaged than Americans, seemed to be more relaxed and less serious. I noticed that to an average American, time had immense value, and he would rather invest such a valuable commodity in profit making ventures than in pointless chats and conversations. This was indeed a cultural shock for me.

When I looked to my feet, I again saw things that shocked me. The streets in America were far cleaner than in India. I'm not talking about dust or dirt – though there were many unpaved roads back home – no, I'm talking about trash. Garbage. Litter. I had come from a city that didn't have any public trash cans, and therefore had no place that hadn't accumulated mounds of garbage. At first, I wondered how this was possible, but then I saw someone throw their spent coffee cup away in a public trash can. I observed longer and saw someone pick a piece of trash from the ground – not their own but left by someone else – and throw it away too! I saw this curious behavior everywhere I went. Experiencing such a culture was a pleasant shock for me, and I began to wonder why my native country did not have this as well.

The way of life in America was completely different from the way of life in my little town in India. Their food, weather, and culture were almost opposite from one another. The climate took a toll on me. When the winter came, I bundled up in as many layers as I could – I must have looked quite comical – and rarely left the house. Then just as I got used to that, summer came, and I felt like I was in an oven. I was not used to the extreme changes, nothing like the season I experienced back in India.

I soon began to miss the cultures and traditions that I was accustomed to. While my neighbors were stringing Christmas lights or hiding Easter eggs, I longed for the many annual celebrations and festivals of India – the colors and dancing which were unique to my home, and conspicuously absent in the United States.

In America, people weren't as close-knit as Indians were back home. Decisions back home were subject to family discussions, concessions, and deliberations. When I was trying to decide whether or not to move to America for my graduate studies, I had long conversations with my family, sitting around the dinner table, soaking in smells of vegetable curry and the warm familiarity of family bonds. Here, it wasn't that way at all. People just did what they wanted to do, without consulting the wisdom of their elders. It's not that in India you let people make your decisions for you – my parents actually would have preferred that I stay home – but that you invite them into the process. Living in the United States, one has to be independent. Every decision you make is binding and you have to live with the consequence with no room for blaming others.

As much as my parents did their best in raising strong independent children, I must confess that while growing up, I was pampered a little. My experience in the kitchen was very limited. I never went shopping for food, and I had the privilege to be a little choosy when it came to meals. I never had to do manual labor. But when I came to the United States, it all changed. My first experience going to a grocery store was quite dramatic. I wandered through the aisles, glassy-eyed, my cart bare and empty from indecision. The brightly colored packaging, stretching to the ceiling, overwhelmed my senses, and the air conditioning, set to max, sent shivers down my

spine. I could get anything and everything I needed, yet I did not know where to begin. Back in India, you had to go from store to store to get various items, and that somehow made more sense. Eventually, I adapted to the American way of life; this has helped me make the most of my time. My senses adapted too, and I could soon navigate the grocery store with ease.

As time went on, I began to make reasonable concessions, and adapting became easier. Soon, I completely evolved and even became a strong advocate for the virtues of the American lifestyle. This is not to say that I no longer cherish the Indian way of life; far from it, I do. But my lengthy stay in America has made me more American than I think. This, to me, is not bad at all.

When I first came to the United States, even though I had done a lot of homework and research about the way of life, work ethics, social interface, and food habits in the U.S., I was in a state of culture shock. I came from a small town in India, from a working, middle class family with close ties among family members. Since this was my first experience of going so far away from my immediate family, when I reached the U.S. without any family members nearby, I started feeling lonely and began to recognize that I had to make all the decisions without any help or guidance from any of my family members. This was a new experience for me, and very soon I realized that I had to adapt to the new circumstances and new culture.

In no time, I learned how to be totally independent and take responsibility for the decisions I made without blaming anyone else for the consequences. Life in America was very different from life in India, and I came to love it very much. It drove me

to take all challenges as opportunities because I knew I had myself only to rely on...especially in the beginning.



FROM VIETNAM TO NORAD

When I landed in California, in 1967, I did what anyone does upon arriving in a new land – I looked for a place to eat. I got into a taxicab, asked the driver for recommendations, and he replied with a long list of places, as well as questions – what kind of food do I want? It seemed food from all over the world was available. Would I prefer fast food or a diner? The choices were almost too much. This truly was the land of opportunity.

The United States of America is the land with more opportunities than just food. There are opportunities for careers, self-improvement, and living the life you want. But taking these opportunities requires great courage and immense creativity in order to maximize and eventually convert each challenge into success. In all the time I was immersing into American society, I have been met by unspeakable challenges. I will recount some of them, but first, here's something that will give you a taste of how I transformed challenge into opportunity.

At the time, America was in the midst of the Vietnam War and the Selective Service System was activated. This meant that every adult male who had reached the age of eighteen was required to register for potential draft into the United States Army for deployment to the war in faraway Vietnam. I remember long conversations with my friends, all of whom were incredibly nervous about this. Everyone took a different approach.

“I’m leaving for Canada.”

“I’m leaving America and going back home.”

“I’ll take my chances with the draft.”

I, however, didn’t have to worry – I had arrived on a student visa, making me ineligible to be registered with the Selective Service System.

After my graduation from Caltech, I took a job through the System Development Corporation to work with the North American Aerospace Defense Command (NORAD). I arrived on my first day of work to a nondescript building and was met by a striking security team. They all wore dark suits and sunglasses, and barely seemed to register me as they began asking questions and explaining security procedures. The immensity of the process impressed upon me the importance of the position.

“Here’s your security clearance,” one officer said as he handed me a badge and a stack of papers to sign. But before I could take them, he drew back. “But first, one more thing.”

It turned out, before I could handle highly classified materials, I needed to apply for permanent residence status. Fair enough, I thought, these were of national importance. Certainly, they want someone to be invested in the country before trusting them. But then something dawned on me, and my whole body tensed up.

A permanent residence visa didn’t *only* make me eligible to view classified information, there was that *other* thing as well:

mandatory registration with the Selective Service System and the possibility of being drafted for military service.

It wasn't that I was afraid of being sent to war. My father's words rang in my head: *It is futile to better your life and never raise an arm to help others.* I could not run from giving back to society. But I was looking at the opportunities before me. To miss out on working with NORAD would be incredibly disappointing. There, I would get to work with some of the brightest minds at the time, put my skills to work, and improve myself on the job. I also thought of the opportunity of getting exposed to some of the most advanced pieces of technology available at the time in the field of space surveillance. It was an important job, and I knew it would help people. But signing up for the draft would mean that things were no longer fully in my control, and that is a scary place to be.

I spoke to my friends and family about the decision. Some told me to do it, others said it was too risky. I had to weigh the opportunity for career advancement against the risks of ending up in the jungles of Vietnam. It was indeed a tough choice. In the end, I decided I was willing to face the possible challenge of having to go to war. Whether I was selected for draft or allowed to work at NORAD, I would be helping people, and that put a smile on my face. I thought to myself that, in the event that the worst happens, I could at least take it as the opportunity to see the beautiful landscapes of Vietnam.

So, I applied for the permanent resident visa. Unlike today, where such an application takes several years to be approved and granted, even for a graduating student with some form of work permit, mine was granted in record time of less than three weeks. And as surely as the sun rose, the Selective Service

Board sent a notification to me, calling for me to register. I didn't expect anything less from them at the time anyway. I went ahead and registered, and in no time, I was classified as a 1A registrant by the Selective Service Board, all ready for the draft. I was instructed to appear for a written examination that would determine my placement in the appropriate military unit, and thereafter, for my physical fitness examination.

I wasn't nervous when I showed up for my fitness examination – I had already worked through my nerves when deciding whether or not to apply. As it turned out, I was right to not be nervous – the tests were basically to check if one could stand up and walk, so I passed with flying colors. To the best of my knowledge, no one failed the physical fitness examination, except of course those who had some high-end political connection to throw around and those who came with letters from their personal physicians elucidating some true or fictitious medical complications. I also did quite well in the written examination.

Upon finishing my tests, I felt good about myself. I had performed so well! I was smiling as they brought me back to speak with the officer, but as he reviewed my scores, my smile began to fade away.

“You're a great fit for intelligence work,” he said.

Suddenly, I saw myself deployed deep behind enemy lines, tasked with gathering intelligence about the enemy's strategies, ally, and weapons. In this vision, I burrowed deep into the enemy's social circles, like James Bond, always on edge that I would be caught, seeing everyone as a potential enemy...

I was later told that this branch of the military, unsurprisingly, carried incredible risk, and its officers suffered a high rate of casualties.

Soon after, I received a letter in the mail ordering me to report to the local military unit. It conspicuously stated that I was to report in a couple of days for my final training prior to deployment to the war zone in Vietnam. With mixed emotions, I began to prepare for the task ahead. I packed a bag, said goodbye to my friends, and walked around my neighborhood, wondering whether or not I'd ever see these streets again. My mind was raging as I tried to make peace with what would soon become my reality: the life of a soldier in the jungles of Vietnam.

A day before I was to report to the training center, I received another letter in the mail. I was nervous as I opened this one. What would it say? I expected information about my first mission of espionage, and I felt a pit grow in my stomach. I slowly pried the envelope open and scanned the page.

Your service to this nation is important... of course, thank you... we thank you for your willingness to serve your country... well, you're welcome... your talents would best serve the nation in classified defense projects, rather than... wait a minute! I was halfway through the letter before I realized it was from the commanding officer at NORAD, a three-star Air Force General. This was a letter informing me I would *not* be sent to the jungles of Vietnam, but instead granted an occupational deferment to work on classified projects at NORAD.

This letter from NORAD changed my life completely in ways that I cannot begin to explain. I also learned a vital life lesson

that day: to always appreciate how life turns out without necessarily having any direct participation by oneself. This newfound wisdom helped me to start making the best out of any and every circumstance.

Like all immigrants, I came to the U.S. looking for the amazing opportunities that are available to hard working people who are able to face any challenges. It turned out that I had to be willing to accept the ultimate challenge, of going to war, and while I was willing, I am incredibly grateful I did not have to put my life on the line, but could serve the country through my work at NORAD. It was an unexpected opportunity that changed my life forever.



TEACHING AS THE BEST WAY TO LEARN

When I had the luxury of being a teacher, mostly as a guest teacher in colleges, but also elementary and high schools, I was always amazed at the improbably difficult questions students would ask. I would go up to the back of the room, I would call upon the pupil, and suddenly find myself at a loss for words. It was like I had been seeing the material through tunnel vision, explaining within a set boundary, and my students were looking at it as if that boundary never even existed. I always left the classroom with more questions – more things to investigate and learn. Researching these sorts of questions has been one of the greatest sources of learning in my life.

Life is a journey full of lessons. I believe there is a lesson in every adventure. The pages of this book are littered with the lessons I've learned from one experience or another. Some

of these lessons came from interacting with the academic world, others from my personal or professional life. I have had the privilege of engaging in many entrepreneurial ventures, some of which were more successful than others. Some even created jobs for others and fulfilled mandates in lives and communities.

One of my most priceless life lessons is to always see the best in any circumstance, approaching each with utmost confidence and belief in oneself. This approach has always kept me on par with giving my best while still maintaining my peace of mind. For me, every step is a goldmine, an opportunity to learn and better yourself. I maximize my opportunities by learning a great deal from them. Consequently, by simply learning from any and every circumstance, I became a person worth learning from. Over the years, I have become a mentor to many people, helping them sharpen their minds as they pursue their goals.

I have been a student all my life, and this has helped me cultivate the habit of learning new things every day. With every interaction with people, I feel that I learn something new or capture things from newer perspectives.

Throughout this autobiography, I have attempted to document the various lessons I have learned in this journey so that it may be useful in some form to help the coming generation to navigate their life. These lessons have helped me overcome a number of challenges I have faced in my own life. You will see, in the coming pages, that I have faced many failures throughout my career, and these have helped shape me into a better person. I have learned to avoid repetition of these failures, and perhaps from reading my story, you can avoid them in the first place.



WHERE WE ARE TODAY

At Caltech, I used to spend hours in the library, breathing in the musty smell of old books, walking up and down the stacks, and thumbing my fingers through endless pages of worn paper in the hopes of finding the information I was looking for. Sometimes I discovered that the information can be found in another book, in another library, on the other side of the country, and I had to ask the old woman who ran the interlibrary loan office to request it for me.

She would stare at me over her glasses, push a form across the counter, and then once I filled it out say “seven to ten business days.”

Now, things move much quicker. When I want to know something, I just boot up the computer – or, even better, reach into my pocket and retrieve my smartphone – and type my question into the Google search bar. Depending on the device in front of me, I can even just ask the question using my voice. In a flash, tens of thousands of pieces of information come up as options, shining up at my face like a light bulb. Many libraries across the country have even digitized much of their stacks, and the interlibrary loan is at your fingertips. You will see, and are aware of, how far the world wide web, led by two tech giants Apple and Google, has taken us, but I will tell you more about that in a moment.

The world has come a long way in the last couple of centuries. The advances in science and technology have changed life dramatically. From the invention of electricity and the light bulb, the earth has experienced exponential growth and

obvious dynamic changes. Today, thanks to the invention of the internet, the world has experienced a rapid shift from an industrialized age to an information age.

The world has gone digital. Our current technological advancements, and likely all future ones, depend on digital technology. With the speed of light, the industrial revolution that predominated most of the last century is gradually being replaced by the digital revolution in this century.

The digital revolution is dependent on the breakthroughs and advancements within the fields of computer engineering and software design. The invention of faster processors and smaller memory chips that could store enormous amounts of data has set the bar to an unprecedented high. The trend of growth taking place within these fields has made it practically impossible for predictors to tell what to expect next.

For the young, life has become easier. Having access to information with lightning speed and reaching out to friends and family with such proximity and with little effort can be very satisfying. I can speak with my grandchildren and see their faces, no matter where in the world they are or I am. Fast internet with higher bandwidths has helped shape the digital age, so that the world is now a global village. Digital chat rooms and currencies have quickly become popular too, giving room for more interactions between people online and their various businesses.

But for the old, life as they know it is now more complicated. Having been groomed to carry out tasks in regimented, mechanical ways, it becomes a laborious task to unlearn the

old and relearn contemporary ways of doing things. For many, living in this digital-dominated world is close to a nightmare.

Sadly, with these technological advancements there are risks and dangers. Security failures and hackers pose a formidable threat to the digital space. This reality, however, has opened the door to advancements in the fields of digital/online security and intellectual property. And with further growth and invention in the areas of artificial intelligence (AI) and block chain technology, intentional and unintentional breaches in digital security could be greatly minimized.

Moving further on, we are currently at the threshold of even more revolutionary breakthroughs, all thanks to diligent experimentations and sheer creative prowess in the field of digital technology; areas such as automation, automobiles, navigation, robotics, green energy, health care, food production, and many others are churning out newer inventions and making the administrations of various services very seamless.

The advancements in automation have long begun to make momentous waves as far as employment is concerned, so that today, it is a necessary skill to have in order to gain employment. Other upcoming changes within such fields would eventually further supplant employees in their numbers. In due course, the need for employees doing manual, mechanical tasks would become a rarity in many areas.

The field of navigation is going through remarkable changes, so that self-directed navigation is becoming a reality. Once this novel idea is perfected as desired by experts, driving jobs all around the globe will become practically needless

and eventually extinct. This innovation, while improving the quality of life for many people, will also put many out of work.

The field of robotics technology has also advanced. It is experiencing an incredible revolution, due to the incorporation of AI components. Smart AI software tools such as Siri and Alexa are becoming increasingly common in many homes today. Needless to say, in the near future, the use of robots will no longer be limited to industrial use but will be available for household uses as well. Tasks such as basic home chores – cleaning, cooking, laundry, and the like – office assistance, goods delivery, and so on will all be done by AI robots. This is no longer in doubt. These robots will start replacing many household workers, administrative and secretarial jobs, and even service workers. This change will doubtless give rise to a noteworthy unemployment problem among a large segment of the population.

We are witnessing today the transformation of life, and the way of life we've known is already gone. It may never come back. This ongoing transformation will reshape the employment landscape, the rhythms of daily life, and the choices available, or not, to a great number of people. Many of these changes will be good, though indeed some will be bad. Either way, we get to take part in the exciting work of building a new world.



FIVE DECADES OF CHANGES

In 1967, I was a student at Caltech. My task one day was to code a numerical integrator with differential equations to compute the trajectory of a space probe, and I had to use a computer

programming language called Fortran to do it. I spent weeks in the computer lab, staring into that simple, pixelated screen until my eyes grew tired. It was a laborious process, one which would appear ancient and Byzantine to today's students of technology. The exercise took more than a few weeks to get the desired results and achieving this was considered to be a foremost accomplishment.

Today, the prowess of the computer is massive, capable of computations with far more speed and accuracy than those I did on Fortran. What's more, the eventual miniaturization of computer processor chips and various related components have altered society at large. This is thanks to its intended effect in every aspect of living caused by the solicitations of such innovations of modern computers.

The computer sector has experienced enormous changes in terms of development and rapid growth and expansion in the technology sector. Take the computer for instance. Back in 1967, an average computer was embryonic, to say the least. Locating a computer for use in any complex work required an entire room – a large one at that. Its programs and user interfaces were slow, bulky, and hard to master. Today, a handheld smartphone can do so much in just seconds, having multiple functions and user-friendly applications and services. This speaks volumes about how far and how fast the technology sector has evolved within the past decades.

Other than technology, many things have changed. In 1967, the federal budget of the United States stood at 158 billion dollars. By 2017, the federal budget has ballooned in excess of 4.5 trillion dollars. Of course, this is partly due to the rise in inflation over the years, but the enormous increase in

expenses attributed to sectors such as social services and the military budget are a big part of that as well. The introduction of social security payments and Medicare services for the older populace and for the poor have contributed a safety net for maintaining a reasonable standard of life.

Race relations have changed as well. Back in the late sixties, owing to many pivotal civil rights movements and the enactment of various critical laws aimed at combatting racial discrimination, tension between white people and people of color was at an all-time high. But as the years went by, this once seemingly tense relationship eased up and improved significantly, becoming somewhat cozy. This was evidenced in the year 2008, when Barack Obama was elected as the first ever Black president of the United States. Obama rode on the wings of hope and so much enthusiasm.

One might think that achieving such a phenomenal feat would mean a total eradication of the age-long tension between white Americans and people of color, but this has been proven to be far from the truth. Today, tension between these two groups abounds and is very potent – perhaps as bad as it's been since I first moved here. It is widely believed that the election of Donald Trump as the president of the United States in 2016 was a direct response to the paranoia that resides amongst the white populace over losing out in being the majority in America. In what could be referred to as a regression and indeed a sad development, the administration of President Donald Trump had opened up discussions on the possibilities of limiting, yet again, immigrants from non-European countries into the United States.

When I first arrived in the U.S., there was only a small number of people of Indian origin. Whenever we passed one another in the supermarket, we would pause in shock, then exchange greetings, share where we were from, and ultimately part ways exhilarated at having seen one of our own people; such a rare thing it was. The U.S. was not, in those days, a preferred destination of choice to most Indians, compared to the United Kingdom, when it came to pursuing knowledge or career growth and establishment. I would attribute the cause to misinformation. Many Indians had notions about the United States that were simply not true, and those notions fueled an increased desire to go anywhere but the United States.

The trend changed, though, in the late seventies and eighties. Soon, we witnessed an influx of Indians into the U.S., so much so that today, people of Indian origin living in America number about 3.5 million, compared to a meager 50,000 back in the sixties. I believe the drastic change came when, in the sixties, certain laws that placed restrictions on immigrants from Asia were repealed, opening the door for huge migrations from Asia. While I'm still always happy to see a fellow Indian at the supermarket, it's no longer such a rarity.



BLACK LIVES MATTER

With all of these changes in the mix of ethnic backgrounds settling in the United States, racial discrimination is still prevalent, and it mostly concerns African Americans.

February 2012. While on the way home from a local 7-11 store, Trayvon Martin, a 17-year-old African American was spotted

by a Hispanic policeman named George Zimmerman who then called Sanford police to report a “suspicious” individual. An altercation rose between the policeman and the teenager in which the policeman fatally shot Martin. During the trial, Zimmerman claimed self-defense and was acquitted. This incident sparked online protests which started the Black Lives Matter social movement.

Formed in the U.S. in 2013, Black Lives Matter is dedicated to fighting police violence against African Americans. U.S. history is filled with incidences of violence against Black people, and I started believing that such incidences have been significantly reduced over the years. The election of Barack Obama, in 2008, as the first African American President is a testimony to the changes in the U.S.

The Black Lives Matter movement expanded in 2014 after two other police killings of unarmed Black men, Eric Garner and Michael Brown. Garner died in Staten Island, New York, after a white police officer held him in a prolonged illegal choke hold, which was captured in a video by a bystander. Brown, a teenager, was shot and killed by a white police officer in Ferguson, Missouri.

The movement returned to prominence following the killing of George Floyd in 2020 which sparked a global protest. He was pronounced dead after a white Minneapolis police officer knelt on Floyd’s neck for several minutes, despite Floyd’s repeated protests that he could not breathe.

Some changes are happening. People around the world are openly discussing, for the very first time, what racism looks like within their communities, workplaces, and day-to-day

lives. The deaths of George Floyd, Breonna Taylor, Rayshard Brooks, and so many others at the hands of police officers in the U.S. started a new awareness that something needs to be done to change law enforcement.

I have noticed that this desire for change goes beyond the Black community. I feel that all races are united together in demanding changes in the treatment of Black people by the police, especially young Black men. Over the years, I have noticed that most Black families live in the inner cities while most white families live in the suburbs. The interaction between Black and white people is limited and rare. In the last fifteen to twenty years, this pattern started changing, and socializing between Black and white people has become more frequent which drives many Black families to move to the suburbs. This change, however, did not seem to have a major impact on how the police treat African Americans. They continue to tag them as suspicious individuals, with almost all reported crimes being attributed to Black people. It is noteworthy to recognize that Black people are killed by police at more than double the rate of white people. Furthermore, data also shows in the last five years, police were killing Black men at over five times the rate of their population.

For most Black parents, especially when they have a Black boy, there is an added responsibility of having to protect their child from a society that is out to get them. Their children could be killed by the police for no reason. Most Black parents have to tell their child, “Don’t wear a hoodie. Don’t try to break up a fight. Don’t talk back to cops. Don’t ask for help.” Basically, the parents are telling their children that the police do not need an excuse to kill Black children. This is indeed a scary situation, but it is real. I have had conversations with a number of highly

skilled Black professionals such as doctors, lawyers, corporate executives, and other senior management personnel. Most of them have told me that each of them has had such encounters with the police, and they all narrowly escaped the situation getting worse. I have, on a few occasions, been stopped by police while driving. My encounters were typically friendly and maybe I did not appear threatening to them. I have also had a few conversations with my sons about what to do when police stop them while driving. I told them to follow their instructions without being confrontational, and if possible, try to be friendly.

Furthermore, I have found that there is persistent discrimination against African Americans in terms of compensation. The Equal Pay Act does not seem to make a difference. This act supposedly requires that men and women be given equal pay for equal work. It is job requirements, not job titles, that determine whether jobs are equal. However, I have seen that many employers do not adhere to this requirement. Studies have shown that there are significant differences in pay based on race and gender. Black people, most especially women, get the lowest pay for similar jobs. They are often paid less than their white counterparts for the same job.

Meanwhile, white, male Americans still dominate senior leadership positions in a corporation. The highest percentage of individual contributors are occupied by Asian men and women, with hardly any chance to occupy roles such as managers, directors, or executives. Also, seldom do we see Black men and women in leadership roles. Sadly, as of this writing, we don't see any sign that non-white races will have equal opportunities as white people in taking up leadership roles.

I understand that there exists discrimination not only in the criminal justice system, employment compensation, housing availability, and other living condition areas but also in voting rights. The discrimination targets all minorities, but it is mostly directed towards Black people. The Black Lives Matter movement has brought these problems to light much more than before. There is greater awareness among all people, specifically white people, that such discrimination exists, and we need to play a role in changing the situation. People are getting involved through various organizations. Political and governmental institutions are being enlisted to take the necessary steps to implement appropriate changes in order to eliminate or minimize discrimination.

Injustice to any group is injustice to all. In 2020, we witnessed the COVID-19 pandemic and national uprisings against racism and police brutality, with deeply rooted tensions concerning power, identity, injustice, and belonging that erupted into protests, riots, and lethal violence. The Black Lives Matter movement took leadership to bring attention to these prevailing injustices. Powerful entities have less regard for the lives of Black people, brown people, poor people, and those who are less educated, because these people lack political power. My research has shown that, for generations, the majority of people have been treating minorities as second class without much consequence. I hope that now there is a new awareness that will bring justice to all, specifically for the benefit of the minorities and people who are less privileged.

I have had the pleasure of working with a number of Black Health Trust physicians, one of whom was Randall Maxey, MD, PhD. He is actively helping the community to improve the delivery of high-quality health care services to Black people.

The Black Health Trust is formed primarily to best serve the Black communities with a coalition of leading and long-standing Black medical professionals across a diverse spectrum of disciplines to offer objective opinions and insight into their physical and mental health during these challenging times. Studies show that in the U.S., racial and ethnic minorities, especially Black people, are less likely to receive preventive medical treatments than whites. They also have worse health outcomes for certain conditions. Recognizing these facts, the Black Health Trust physicians are working towards correcting the situation to bring better health care services to Black communities.

To help them further their advocacy, my team at Second Opinion Expert, Inc. is working with Dr. Maxey and his team. By giving them assistance through our tele-medicine technology platform, they are able to bring the best state-of-the-art health care services to many patients in the Black community.



AGE OF APPLE AND GOOGLE

In order to fully appreciate the changes that have taken place in the last five decades, one has to have actually lived through the period. For many people today, it is quite impossible to envision that there was once a time when there was no color television. In the same vein, there was once upon a time not long ago when there were no cell phones, no electronic payment systems, and the thought of one having a video or FaceTime communication with another person from anywhere in the world was unimaginable. How times have changed.

When I was studying at Caltech in the sixties and seventies, it was very challenging and cumbersome to get relevant information for a project. As I have talked about earlier, some days, I would pore through countless books, perhaps not even sure precisely what I was looking for. When my ideas became somewhat less foggy, I would drive to another library, or even another city, in search of the book that I knew held the answers. Yet, sometimes that, too, would fail, and I would begin making endless phone calls.

This of course was not only energy and time consuming, but expensive as well. But today, thanks to tech firms like Google, information is at one's fingertips. Indeed, Google has shifted the paradigm when it comes to information searches and online services. In terms of speed, Google is about five to ten times faster in delivering search results than all its competitors put together, a feat that was unimaginable years ago.

The American market today is dominated by tech giants, and one of the biggest is Apple, which was founded in 1977, about ten years after I first arrived in this country. Apple is estimated to be, amongst other things, the most valuable tech company currently operating in the United States, averaging over two trillion dollars in worth. Doubtless, the tech giant went through their fair share of turmoil, which is necessary for any establishment to go through before gaining any footing. But through sheer persistence, belief, and innovation, they triumphed, metamorphosing into the tech giant they are today and becoming the self-same efficacious company which is the leader in the mobile phone industry.

For Apple, the mobile industry needed more than it was getting. By foreseeing a future that was otherwise unknown

at the time, and daring to take steps towards achieving it, they opened the sector to a multitude of innovations. Apple started crafting several computer devices, focusing more on functionality enhancement features, application exploration and expansion, user-friendliness, and many others, propelling the company to become a leader in the modern digital world.

To say that Apple is at the center of shaping the modern digital era, in my opinion, wouldn't be an exaggeration. This can be seen in the wide spread of Apple's tentacles across the globe, its firm grip on the tech market, and going by the large number of individuals and companies that are dependent on their ever-durable products.

Google is the American transnational tech outfit that focuses on services and products that are internet related. Today, services like online advertising, cloud computing, search engine, software creation and support, and hardware orders and purchases are all branches of the tech market that Google has adequately covered, and by doing so, planted itself as one of the Big Four technology companies on the planet, along with Amazon, Apple, and Facebook.

Fifty years ago, carrying out tasks that had to do with computing and technology was pretty expensive and available to a privileged few. Information flow was limited to intensive research and digging, and payments for goods and services were archaic, slow, and analog. The founding of Google in September of 1998, by two PhD students at Stanford University, was arguably the beginning of good things for the tech industry and the world at large. Larry Page and Sergey Brin looked at the challenges facing the world at the time and decided to take the bull by the horn.

Due to its size and efficiency, Google possesses the richer amounts of and more relevant results (Thanks to their unique PageRank algorithm), the most simplistic and minimalist interface, and have maintained the top spot by investing comprehensively in further improving searches by putting up a well-organized A/B testing framework, capitalizing in datacenter technology, setting up effective frameworks for their monetization strategy, and so on. I think these steps were critical for the company in becoming and maintaining a global brand.

It's hard to know what changes we will see next. They will likely build on what Google and Apple have created but will also likely be new and unexpected. After all, no one saw Google coming, but now it's hard to imagine life without it.



AGE OF INFORMATION

One day at Caltech, I arrived at class to find we had a guest lecturer. Standing at the front of the old classroom, under the dim lights, stood a man with a sharp, stern face. He had a commanding presence, and immediately we all wanted to know what he had to say.

Our professor introduced him as Claude E. Shannon, an American mathematician and researcher from Bell Laboratories. Shannon was a genius, who had published a revolutionary paper in which he proposed that information could be encrypted quantitatively, in a series of ones and zeroes. He began to explain to the class, using charts and equations, how

using this framework, all information, no matter how complex, could be transferred with little or no error at all.

It was a breakthrough discovery – and a phenomenal lecture, the mathematician’s equivalent of a Carnegie Hall performance. Every student in that room had their gaze transfixed upon Shannon, their mind full of wonder at the possibilities that might arise from this revelation. We were trying to imagine a new world of endless possibility. We knew that it must be around the corner, but we could not picture exactly what it would be.

Claude E. Shannon is considered the father of informational theory. Back when he proposed this theory, it was a dream that only existed in his mind. No one knew how it could be achieved. But by the 1970s, with the invention of the internet by the United States’ Department of Defense and the ensuing acceptance of personal computers about ten years later, the Information Age was well underway. Today, Shannon’s theory has come to fruition, expanding in leaps and bounds, and thanks to many researchers, mathematicians, and tech experts, we can rest assured that the best is yet to come.

We are now living in the Information Age where information has been transformed into a viable commodity, distributed, transferred, and accessed with phenomenal ease – and for profit. Access to valuable commodities was extremely limited due to the unavailability of super computers, various modes of transferring such information, like email and the internet, and general wherewithal on how to get, store, and handle such information—but not anymore. Thanks to Claude E. Shannon, and the countless people who built upon his work, we live in a new world.



TRENDING TOWARDS AUTONOMOUS NAVIGATION

Many things that are done today automatically were accomplished by hand in the past. Complex strings of calculations, now available at the click of an Excel spreadsheet, were computed manually, with minimal (or no) help from a large and (by today's standards) slow computer.

I remember driving across the country on vacation with my wife and kids. We had a large book, titled *The American Atlas*, which held large maps of the nation, as well as detailed maps of each of the 50 states. *The American Atlas* was about the size and weight of one of my Caltech textbooks, but it was necessary for navigating such a large terrain.

As we drove across the land, my wife would navigate over the sounds of our children. We strained our eyes, looking into the bright sun to catch a glimpse of a mile marker sign go by, always on high alert so that we would not miss a crucial exit. More than once, we found ourselves unsure which road we were on, and we occasionally had to backtrack. This experience is now mostly a thing of the past, thanks to GPS navigation. Soon, it will be unheard of, even comical to the younger generations, once autonomous navigation takes over.

Every day, huge investments are put into the idea of autonomous navigation, and technological breakthroughs are rapidly following. Autonomous navigation is the idea that an automobile (or any machine for that matter) would be able to plot its course and drive itself without any form of anthropological interference. In other words, autonomous

navigation is the art of inventing self-driven automobiles and machines with AI.

In some cases, autonomous navigation is supported by remote navigation assistance, while in other cases, installed sensors in and around the automobile itself work to calculate the course. In the case of an autonomous android, it is programmed to be able to retain its own stability as it navigates, while also forecasting its other actions. These autonomous androids may use remote navigation aids. However, they could be made to rely on optical, acoustic, and olfactory signals.

To initiate a movement, adequate amounts of data are collected in the form of environmental awareness or triangulated signals. Such intelligence is then channeled into translating basic motivations, which would preempt motion to a direction. In addition, this preempted motion would adequately factor in other information as it relates to the change in environment, collision with static or moving objects, or any other necessary considerations.

I must admit that this sector is still very much in its infancy and looks a little blurry at the moment. But here lies endless possibilities yet to unfold. I could imagine the numerous tasks that had to be done manually for lack of automated machines, and the many distances we had to cover, only to discover we wasted energy and time because we took longer routes. I imagine that with the explosion and acceptance of autonomous navigation, such errors will be drastically reduced, or even eliminated.

In Part 2, I will talk about my involvement in the development and survivability of the Global Positioning System navigation

or what we simply know now as the GPS. It is through this creation that autonomous navigation is made possible.



YOUNG VERSUS OLD

I like to talk to young people about their lives; how they spend their time, what they do for work, and why they've chosen to do so. What I hear often upsets me: "The pay is good," or "It's a high-growth market."

When I hear statements like this, I let out a deep sigh and wonder where things went wrong. It's all too commonplace to find hardworking people who do so strictly for the pay, who would make life and career choices without considering the long-term effect their decisions would have on their lives and that of their loved ones. This development to me is a backward trend, not progress as it is being labeled today.

Even though the U.S. didn't have a lot of technological advancements in 1967, it had many great values which guided people's lives. Some of these values have been lost today, and newer paradigms have been established as ways of living and raising kids. Inasmuch as I feel compelled to believe that these current values carry some form of piety and morality, they largely do more harm than good.

I think, with all the advancements being achieved around us, we must ensure we don't lose our humanity. Even when it has to do with building nations, we see a trend with the younger generation that is saddening. Service to humanity is judged by

what personal aggrandizement can be gained, what advantage can be derived for one's family and relatives.

I lay the blame partly on the doorstep of my contemporaries. We could have done more in bequeathing a more beneficial community to our kids. We could have placed more value on things which are worth more than gold. We could have given the younger generation a greater reason to be more human. This of course doesn't wipe away the fact that the tenacity of the older generation in advancing technology, governments, and socio-cultural heritages was deliberate and drastic, and thus should be deemed commendable.



COVID-19

This is a section I was not planning to include in the book when I originally started writing, but times have changed. The COVID-19 pandemic has become a major event in all of our lives, and it impacts people all over the world. It makes us all reflect on what's truly important in life. Therefore, I have decided to include my view of the situation and how this will impact society at large. Additionally, I came up with an idea to create a platform that has to do with how COVID-19 changed the way we travel.

Even though some epidemiologists and other scientists have warned us to be prepared for a catastrophic pandemic, not enough world leaders took these warnings seriously enough. I do not have enough words to express my feelings about the condition the whole world is currently in, and how the future will be. We have seen many crises over the years, of course.

There were many wars that created a lot of terrible suffering for many people in different parts of the world. This pandemic, though, is quite a different challenge.

This coronavirus is affecting people all over the world and this is similar to what happened about a hundred years ago during the Spanish flu epidemic that killed millions of people worldwide between 1918 and 1919. During the Spanish Flu, the quality of medical care was not nearly as advanced as it is today. But despite our current advanced medical knowledge, the overall death rate so far is tragically high.

The whole world has been shut down to fight the pandemic, an approach that proved to be unsustainable in the long term. Some countries and regions are opening, and it is creating new surges and more people getting the virus which results in more deaths. This is creating more fear and uncertainty about what is going to happen and how the world is going to change because of this crisis. I believe that the United States should take the lead and find a solution to the problem, and I see that our scientific institutions and creative business enterprises in the health care industry are taking this epidemic very seriously and trying their best to find a solution to minimize the devastation for not only America but also for the whole world. But I'm not sure whether the U.S. government during the Trump administration has shown any leadership in this area. However, since Biden has taken over the administration, the view and the seriousness of the impact due to the pandemic has significantly improved and this I believe will reduce the chaos and confusion surrounding the pandemic. The Biden administration's singular goal has been how to defeat the virus.

There are primarily two ways of dealing with the problem, and people are very innovative. One strategy is developing a viable therapeutic solution. The problem with coronavirus is that it is extremely contagious, and you do not know who is a carrier, and, therefore, you have to suspect everybody you cross paths with because they could be a potential carrier. This makes normal life extremely difficult. The development of a successful therapy is difficult, and it takes a significant amount of time primarily to establish its effectiveness and safety. Many of our research institutions are working very hard to find an appropriate therapy, and many hospitals are experimenting with various therapeutic agents which were developed for other diseases to see whether they provide some relief. In some cases, such experiments are providing some positive results, but these trials are still in their early stage.

New therapeutics require double blind studies to validate effectiveness and safety. These are very difficult steps when patients are suffering, and, unfortunately, these steps with a well-established scientific protocol take a significant amount of time. In the meantime, many people are dying.

The second method of controlling this epidemic is by developing a vaccine to prevent people from getting the virus in the first place. It is true that there are many current activities going on in many parts of the world by many reputable institutions, and these vaccine studies are in various stages. A number of highly sensitive and effective vaccines are currently available and being administered in many parts of the world. However, only time will tell how long it will take to distribute these vaccines to the whole world.

DNA vaccines have advanced over the years and have provided excellent results for many diseases, and many institutions have come up with possible DNA vaccines which are continuously being evaluated. According to the World Health Organization, the coronavirus is similar to the SARS virus and is part of a large family of single-stranded RNA viruses.

Just like therapeutic agents, vaccine studies have to go through both safety and efficacy studies. Safety is extremely important because when you vaccinate a person, you don't want to create more problems for them, especially if you plan to vaccinate millions or even billions of people. It is extremely important to adequately test the safety of any vaccine before it is administered to the population as a whole. Moreover, one has to take into account if the vaccine is given to a child or an older person, the gender of the person, whether the person is pregnant, or if any pre-existing medical conditions exist.

Once safety issues are resolved, the efficacy of the vaccine has to be thoroughly studied and understood. The vaccine has to prevent the possibility of becoming infected by the COVID-19 virus most of the time, if not all of the time. The difficulty with testing the efficacy of a vaccine is time. In order to understand how much protection a vaccine offers, people will need to live with the vaccine for some time as we watch to see if they become infected or not.

Until a reliable vaccine is widely available or at least a successful therapeutic agent is accessible, the fear among the general population will not go away. People may not want to do everything they were used to doing before the pandemic. Many people may want to avoid circumstances where one could become infected. This clearly creates an economic

impact everywhere and especially in the U.S. What I have noticed is that most people in the U.S., about 70%, have no savings and are living paycheck-to-paycheck. So, if one misses a paycheck, life becomes extremely difficult very quickly. This leads to greater food and housing insecurity, and eventually homelessness.

Here in the U.S. most people have to work to make a living for their day-to-day expenses. If there is no job, there is no income. In many third world countries, like India, even poor people tend to save for difficult times. They have experienced periodic difficulties and they are prepared for rainy days. In the U.S., the concept of saving for such difficult times is not very popular. Most people live well when there is income without worrying about the future and generally most people live beyond their means because credit is usually available. As a result, most people have significant debt because of their lifestyle.

Before this pandemic, the unemployment rate was reasonably low and the quality of life for most people was remarkably good. During 2008 after the collapse of the financial institutions caused by the mortgage crisis, many people had to undergo a difficult few years because of the significant increase in unemployment. Most people have bounced back from that difficult period and the economy has started to grow significantly from the low period of 2008. The mortgage crisis in 2008 caused unemployment across many industries including unemployment for the low paid workers as well as very high paid employees in key financial and other business institutions. It took some time to improve the situation across the board. But it is true that the financial crisis recovery

disproportionately benefitted the wealthy compared to the middle- and low-income population.

The financial crisis caused by the coronavirus pandemic is severe and the economy has suffered significantly. Unemployment has increased dramatically, and most of the people who lost their jobs are low paid workers who are not in a position to work remotely with the help of advanced technology. Only very few high paid workers have lost jobs because most of them can work remotely in a very efficient manner, and data indicates that their productivity has actually increased because of the various advancements in technology that facilitate such jobs from any location.

The stock market crashed significantly in 2008, and it took almost five years to get back to normal, primarily because the American economy depends on high income employees. Until the almost full employment of high paid employees became a reality, the market did not start to gain momentum upwards. Whereas, in the beginning of this pandemic the market did crash significantly. But as soon as it realized that the real unemployment affected mostly the low paid workers and did not affect the high paid employees, the market started to rebound on the theory that the strength of the real economy is primarily dependent on high-income earners. Furthermore, the market believes that there will be some solution to the pandemic through innovation in vaccine development or in controlling the disease through therapeutic agents or both in a relatively short time.

The U.S. government has provided some relief during the pandemic to most of the population through direct payments as well as increased unemployment insurance. This assistance

has greatly helped a large portion of the population. But it is not clear how long this will last. If the unemployment situation does not change soon, economic support may not be available, and this may cause immense disruptions in the livelihoods of a large number of people. The U.S. economic support for poor and low-income workers over the years has become more restrictive. The number of people who are eligible for social services and food stamps is decreasing because of many restrictions imposed by the government. This will make the future of these people even more uncertain.

Senior citizens in the U.S. are mainly dependent on social security payments. It will be very difficult to maintain a normal standard of living if one has only social security payments without supplementation from some other means such as retirement payments or savings. Many senior citizens used to supplement their income by taking part-time jobs prior to this pandemic. Now, such part-time jobs are very rare or even non-existent. The situation is creating severe economic distress among senior citizens. Unlike countries in the European Union, in the U.S. there exists no practical economic safety net for the less privileged, and this pandemic has created more awareness of this problem among a large part of the government. But the new administration is considering such long-term plans to come up with a permanent plan to provide for an economic safety net for the less privileged.

Moreover, this pandemic is creating possibilities for many changes in the behavior of the world population that are, in certain cases, very positive and in some other cases very negative to the growth of U.S. and the world economy. I have outlined some of my observations here. First, people are reluctant to use public transportation. In major U.S. cities and

other parts of the world it would be difficult to travel without the use of public transportation. Maintaining social distances in public transportation would also be difficult even if it is less crowded. All epidemiologists encourage people to wear masks and maintain social distance when going outside when others are present. As and when more and more people are vaccinated, the requirement for the need to wear masks and keeping the social distancing will go away. Most people all over the world follow this requirement fairly well. However, in the U.S. there is a significant number of people who are against this requirement, and some of them consider wearing masks to be a violation their constitutional rights. To some extent, the past administration under Trump encouraged such thinking even though it could continue to cause the virus to spread.

It is true if one does not wear a mask in open spaces, but if social distancing is practiced, the possibility of getting COVID-19 is quite small. But that is not the same in an indoor environment. Not wearing a mask indoors would be dangerous when others are present especially for unvaccinated people. This becomes dangerous to others' health in a public transportation environment.

This pandemic has caused a major impact in several areas of business and specifically in the transportation, hospitality, leisure and vacation, education, retail and eCommerce, ride share, sports, and building and office space industries. I have made observations in these areas regarding how changes could happen and there are possibilities of revolutionary changes in the near future. But at this point we are still figuring out what these changes will be, and how permanent they will be.

One of the most impacted industries due to this pandemic is the transportation industry, specifically airlines, railways, and intercity buses. People are now using their personal cars for travel, whereas prior to this pandemic they would have taken some form of public transportation because of convenience and cost effectiveness. During this pandemic, and in the future when the pandemic is behind us, people may continue to avoid public transportation because they may not want to take chances by intermingling with strangers.

The airline industry is in a much worse situation. Airline revenue is mostly dependent on business travel because such passengers are willing to pay premium prices.

Many businesses have recognized and realized that most business travel is not required at the moment and meetings can be done by video communications. Businesses have also realized that they can achieve significant savings in their business travel expenses without sacrificing any of their business activities. It is highly unlikely that businesses will go back to regular business travel even after the pandemic is over because they have discovered that much of the travel prior to this pandemic was wasteful and expensive.

The other major income for airlines is tourism, which is practically non-existent during the pandemic. Once life goes back to normal when the pandemic ends, tourism will start coming back. But the problem is that it is going to be difficult to attract tourists to popular attractions because of the fear of the unknown. I am sure such tourist travel will happen, but it will take a few years before going back to pre-pandemic levels.

Airlines are in economic distress, and many governments are providing various types of support including grants and very attractive credit facilities. Despite this, many airlines will likely consolidate to reduce expenses and travel to less popular destinations will be eliminated. Some of the airlines may go out of business as well, while others may seek bankruptcy protection.

As with the transportation industry, the hospitality industry will be impacted as well. Transportation and hospitality depend on business and tourist travelers. Hotel chains and vacation rental businesses such as Airbnb are experiencing significant reductions in occupancy resulting in revenue loss. These businesses are attempting to transform their businesses during this pandemic by shifting from short-term rentals to long-term rentals for healthcare workers and frontline first responders. This transformation will not fully replace these businesses, but they are being innovative to adapt to the situation and make their resources available to customers in the best way possible.

These businesses are suffering, but the real victims are the workers and rental owners who are responsible for the mortgages on their property. If they can sustain some income until the end of the pandemic, businesses will start coming back like the transportation industry.

Similar to the transportation and hospitality industries, leisure and vacation businesses are going through a very rough period. The most affected is the cruise industry. Cruises were one of the first epicenters of the coronavirus infection. Prior to the pandemic, cruises were the fastest growing segment of the leisure and vacation industry. Very large and extremely

luxurious cruise ships were added to the fleets of cruise companies. We had the pleasure of enjoying a number of cruises traveling to many exotic places. I doubt that people will be inclined to return to cruises, even when the pandemic has ended.

Many of the employees on the cruise ships are not from the U.S. but from all over the world, with a considerable number of employees from India. Even though cruise ships are often used by U.S. passengers, very few cruise ships are registered in the U.S., and these ships are more often registered in countries with no or minimum tax burdens.

Another area which is of great concern due to the pandemic is the effect on education. During the pandemic, all schools, colleges, and universities closed. Due to the availability of video communication tools, many schools continue to have classes through online programs. However, this was not available for many less privileged students. Furthermore, teachers are not well equipped to teach online classes, especially for students who have difficulties in learning or disabilities.

For poor students, schools are a source of healthy lunches. When the schools are closed, these students do not have the ability to get adequate food. For young students, not being around other students is extremely difficult, and it is affecting their psychological health as well. These students are suffering from a lack of adequate learning as well as physical activities.

More difficulties are found in pre-school and childcare facilities. Most young parents have to work for a living and generally depend on pre-school and childcare facilities to look after their young children. During the pandemic, it's very

difficult for young children to maintain social distancing and wear masks. Teachers and caretakers have their hands full trying to care for these young children.

For older students in colleges, distance learning may not be that difficult. However, this will create economic difficulties for many higher learning institutions because students in private colleges are not thrilled about paying very high tuition fees to stay home and learn from online classes. Many students have brought legal actions against colleges, seeking refunds or discounts on tuition. The courts have not ruled on such cases yet, however if they rule in favor of students, this will create enormous challenges for many colleges and universities.

Many well-known universities have significant endowment funds, however these funds are generally earmarked for pre-determined expenses. Even for very wealthy institutions, if tuition is not available, they will have difficulty meeting their normal expenses. Moreover, many students from overseas have cancelled their admission because of the uncertainty created by the pandemic.

My oldest granddaughter Jaya Ananda graduated last year from her high school. We did not have a real graduation party. Her graduation ceremony was very limited, and even as grandparents we could not attend. She wanted to go to the east coast for college, as she was accepted to some very prestigious universities. But her parents were worried about her going to the east coast by commercial airplane from Los Angeles.

The pandemic has also had a tremendous effect on retail shopping. Many retail shops are creating their own e-Commerce

sites and have entered into the online market. This process has helped them transition from retail business to online business. The e-Commerce market is booming, and it will continue to do so in the years to come. One beneficiary of this transition from retail to online shopping is the shipping industry. As I have been directly involved in the shipping industry through stamps.com, I can see how shipping businesses would make the shopping experience more enjoyable.

I believe that shipping businesses will grow both domestically and internationally in the coming years, and this trend has been happening even before the pandemic. But the pandemic has helped to increase its speed of growth. The major players in this space are Amazon, FedEx, UPS, DHL and stamps.com. There are a number of other companies growing in this space and the primary reason for their success is the innovative use of advanced technology in the shipping process.

The other industry which has been considerably impacted by this pandemic is the ride sharing industry. Travelers using Uber or Lyft have diminished during the pandemic. The companies have great sustaining power because of their cash reserves, whereas the drivers are negatively affected because they have lost so many customers. As a result, many ride sharing drivers are working for food and grocery delivery services such as Instacart and similar companies. These delivery services have grown because of the pandemic, and this is also changing consumer behavior. I believe that such companies will continue to flourish even after the pandemic. Since the number of these companies are few, they will have great opportunities for growth. But the victims are the drivers because only a small percentage of them are needed. Therefore, until the ride

sharing business picks up after the pandemic, these drivers' earning abilities will be seriously affected.

The building and office space industry has not seen much economic impact due to the pandemic yet. Most office spaces are currently under lease and the lease revenue continues to be available. Most large institutions especially in the service industry are not using their office spaces during the pandemic, except for very limited purposes. The management of such companies are recognizing that the cost for leasing such spaces could be substantially reduced without impacting the performances of the companies and the savings could flow straight to the bottom line. Many of the employees are performing well remotely and they save time commuting. If remote working conditions are maintained even after the end of the pandemic, there will be no need for keeping the same amount of leased space as before.

The downtown areas of major cities such as New York, Chicago, Los Angeles and other large cities in the U.S. and most of the international large cities have high rise buildings, most of which are used for office space. The costs of these office spaces are extremely high, and the expense is increasing day by day as the demand becomes high and the rarity of available real estate space in the most desired parts of town.

As companies recognize that the need for office space is not that essential, they could reduce the need for such lease obligations when the lease renewals occur. If such reductions in the need for office space across the country and even across the globe arise, the real estate market in major cities will see considerable changes. The office space real estate value will decrease and there will be efforts to convert these spaces into

residential units, and that will also disrupt the residential real estate market. Such changes will take time, but I believe that in the post pandemic period, major changes in the real estate market in the large cities across the U.S. are unavoidable.

Another area the pandemic has affected is in the consumption of oil in the U.S. and around the world. The U.S. used about twenty million barrels of oil every day before the pandemic, and the average consumption of oil every day during the pandemic has been below fourteen million. The result of less oil consumption is that the carbon in the atmosphere has been reduced and the quality of the air has been much better than before the pandemic. This clearly proves the theory that if we can transform the country from high usage of oil to alternate sources of energy, the atmosphere can be managed effectively. There are reports that show the atmosphere in cities like Beijing and Delhi are very bright and clear with no pollutants in the atmosphere unlike before the pandemic when air quality was poor.

The pandemic has shown that the reduction in fossil fuel consumption has improved the quality of the environment, and hopefully world leaders can appreciate the situation and develop plans to transition from the use of fossil fuel to alternate sources of energy.

This pandemic has been difficult for our family just like most families. For us, we used to travel a lot mostly for pleasure, but all our travel has been cancelled. At this point, it is not clear when we will resume our travels. Even while traveling, we continue to work because in my case my work primarily involves talking to people over the phone or participating in video conferences. My wife, being a physician, can provide

medical consultation through a telemedicine platform, and during the pandemic her work continues but without the benefit of any travel for pleasure.

We live in a suburb of Los Angeles in a more rural setting. California used to have a large number of coronavirus cases, however due to the increased number of vaccinations the number of cases has significantly reduced. Most of the positive cases are among unvaccinated people, and the state government is struggling with the steps needed to balance the need for opening businesses and reducing the spread of the virus. The whole country is facing the same problem, but many states such as Florida, Texas, Arizona and some others are willing to take more risks in order to open businesses. As the new U.S. administration has a well-organized, scientifically supported federal government plan to manage this pandemic, even though different states are taking steps with practically no coordination with other states or the federal government, currently the confusion and chaos which existed during the past administration has reduced significantly.

Our older son and his family live not far from us, and they have three daughters. His wife is very busy taking care of the home and the children and does not work outside the home, professionally. Our older son, a neurosurgeon, has taken care of patients during this difficult time. His specialty is not directly connected with the pandemic, but the hospital where he works is very much involved in providing care to such patients. All the physicians are overworked, and they are all working in extremely difficult environments to provide the best care to all patients. The physicians are going through severe mental anguish while managing their responsibilities at work as well as managing their families.

Our younger son and his family live in New York City. He and his wife are lawyers and have two young children. He previously worked for a large law firm and the workload was so heavy that he decided to quit the firm and set up his own small practice with one of his school mates because his wife is also working for a large firm and is extremely busy with her professional responsibilities.

When the pandemic began in the U.S., New York City was the most affected place in the country, and we started hearing about the situation worsening day by day. It bothered us very much, and we started telling them that they should try to move out of the city. They were not comfortable flying commercially and were not ready to drive all the way from New York to Los Angeles. But they recognized the seriousness of the situation and decided to move to upstate New York to a remote ski resort away from any crowds. They rented a farmhouse with beautiful surroundings. It was like a resort vacation but both of them worked online from home. I understand that they had a wonderful time during their stay.

My wife and I were married in 1970 when both of us were very young. We had plans to celebrate our fiftieth anniversary in 2020 by traveling all year to many exotic places including places we have previously gone and some new places as well. The pandemic changed our plans of course. We did get to celebrate our fiftieth wedding anniversary with both our sons and their families, however, while maintaining social distancing. We had a wonderful family get-together, and spending time with all our grandchildren was most enjoyable to us.

Since our younger son and his family live in New York, their visit to Los Angeles to get away from New York has helped the

whole family be together for an extended period and spend time together as a close family.



CHANGES IN WORK ENVIRONMENT

My father was a union organizer and a politician. He worked for the employees, the laborers, trying to improve their working conditions, and therefore their lives. It was an industrial age, and the nature of work reflected that. When I entered the workforce, things were different; my work was in computers, not industrial labor. It seemed such a dramatic change to me that I could hardly fathom the kind of work that my father's friends did. And today, many young workers can hardly fathom the kind of work I did at the beginning of my career— technology workers included.

Very few things remain unchanged as half a century passes, and one place that will never be an exception is the American labor force. If you research carefully, you'll notice that between 1967 and today, almost every facet of the country's workforce has changed. The demographic composition of who goes to work today is poles apart from what it was years ago. This transformation also affects the nature of what work people do, how these people carry out their work, their remunerations and payments for services rendered, and even how these people plan for retirement. Furthermore, when we look back, we would see that certain industries only existed within the realms of imagination: sectors like computer science, software design, programming and coding, alternative energy and more. These sectors were nonexistent before.

There are a few changes that can't be ignored.

First, the American workforce has seen a significant leap in numbers. This distinct change to the U.S. labor force could be described as the biggest to ever hit the workforce. Going by the stats provided by the Bureau of Labor Statistics, there has been a dramatic rise from about one hundred and thirty-seven million workers in 1970 to about two hundred and fifty-three million workers today. This rise, of course, can be attributed to the rapid growth of the U.S. population.

Second, there is significant demand for prime-age workers today more than ever before. Back in the day, only about 60% of workers were within the age bracket of 25 to 54. Today, however, that number has risen to about 75% and extending their services to an array of vocations across various industries. Also, we are witnessing an increased demand for younger workers as more jobs now entail particular training in computers, or fluency in social media. While globalization decreases the demand for industrial jobs, and with the aging generation, this implies more calls for prime-aged employees in various sectors.

Third, today's workforce is packed with a good number of women. Going by stats, only about 45% of workers in 1970 were women; but today, women make up about 65% of the entire workforce in the U.S. This drastic leap is attributed to the rising number of women who now choose career paths, willing to delay marriage and childbirth.

Another reason for the drastic change in the workforce is the sharp decline in the number of dependents on workers. The economic dependency ratio was developed by the Bureau of

Labor Statistics in order to ascertain the number of individuals who make up the workforce as opposed to individuals who must be cared for. In 1970, the EDR (Economic Dependence Ratio) stood at 140.4 (this implies that 140 non-workers stood against a working 100). Today however, the EDR has dipped significantly to 97.4, which echoes a sharp decline in the number of children a typical family raises over half a century.

Lastly, an attribute to such a change is the decline in the manufacturing sector, a rise in the tech sector and birth of newer skills and careers. While manual and physical skills are no longer as marketable, thanks to the paradigm shift experienced as technology gained acceptance and accessibility, an exceptional demand has been placed on workers with peculiar skills, such as socio-personal, writing and methodical skills. This development is a result of the number of service-based jobs that require far-reaching understanding, experience, tutelage and training.



CHALLENGES OF AUTOMATION

Imagine walking into a typical factory in the year 1967, say an automobile plant. The sight would be breathtaking as you witness countless people going back and forth, doing one thing or another to the vehicles on the assembly line. This would involve a huge number of people each concentrating on trying to accomplish his or her given task in the fastest time possible. Or imagine you are in an office. Tables are littered with stacks of papers, a collection of office tools and files. So, one didn't have to guess how much time it took to get things done around such a space.

Now, fast-forward to 2016. You walk into an automobile factory and the sight would be even more shocking compared to its counterpart in the sixties. Here, the activities of humans are grossly limited to a few spaces and offices. Along the assembly line, an obvious change has occurred: there are no more people, but rather machines, doing the assembling. The cars move along and are assembled with detailed precision and accuracy as never seen before, and the production is done in record time. Even in a typical office today, a formerly stacked table is now completely empty, having only a laptop or desktop computer sitting upon it. Newspapers, notepads and pens have all been replaced by apps installed on the computers.

This is what automation has brought us.

Automation has gained tremendous growth and acceptance. It is the drafting of integrated circuit technology and computer-controlled tools to take on the control of tasks. The objective of automation is to enhance productivity and consistency. In many built-up plants today, machinelike assembly lines are carrying out tasks that humans used to be employed to do. Automation incorporates many strategic features, systems and occupational purposes in practically all businesses, but it is particularly predominant in sectors such as engineering, transport, facility operations and services. In addition, national and even global defense systems are fast becoming automated.

Automation today is present in all occupations within industries like incorporation, installation, purchasing, maintenance, promotion and rummage sale. In most cases, automation usually substitutes for labor, and economists today are apprehensive that new tech in automation would ultimately push up the rates of unemployment in a significant manner.

Statistics show that 37% of workers are concerned about being unemployed in the near future due to automation, and while this concern grows, industrial robotic jobs have leaped by 14% each year. While over 70% of employees are open to the idea of augmenting their intelligences and physiques so as to expand their capacity for employment, the sectors with the highest risk of automation remain transport, stowage and engineering. It is estimated that by the year 2022, human hours for task accomplishment will fall to about 13% and androids could likely replace over 20 million engineering jobs come 2030. Furthermore, it is estimated that about 33% of new careers in the United States are for professions that didn't exist twenty-five years ago.

There are challenges to the proliferation of automation in the U.S. market.

The coming together of these various levels of changes tells us that machines are indeed aiding in the overall increase in productivity, thereby saving cost. This trend, however, isn't helping with general job creation. Based on publicly available statistics, it's possible that even though a 10 to 20% increase in output had been achieved in 2010, there was a 2 to 3% drop in job creation.

This trend isn't just prevalent in manufacturing, but also in the fields of coaching and education. Today, the number of virtual courses that are taught automatically on the internet has exploded over the past ten years. Furthermore, modes of transportation and navigation are bound to change dramatically. It's only a matter of time before cars, buses and trains will be fully automated. As a matter of fact, even commercial planes will almost certainly have no need for

pilots by the time this century hits its midpoint. Even careers that are more or less secure today, like medicine, will sooner or later give way to robots. We should expect robotic surgeons, medics and nurses by the end of this century. It is, in many ways, an exciting prospect, yet it is also a dangerous one. Society will have to find new ways of employing human labor. Or, at least, something else to do with our time.



POSSIBILITY OF MORE FREE TIME FOR PEOPLE

When I first began working at NORAD, it wasn't long before I realized that working hard was not just a fun statement, but a reality. The hours were long and the tasks challenging. By the time I got home each night, I was beat, and would collapse into the couch, barely able to move. As time went on, I got used to the job and gradually began to make my impact on the role I was given.

However, I noticed that my job was so demanding that I hardly had time for myself or for family. Many days, they ate dinner without me, and I had to microwave my plate once I got home. This wasn't because I had difficult bosses or because the job was simply impossible. No, it was because the workforce wasn't as large as desired, and so tasks had to be done manually most of the time. Additionally, the sensitive nature of the job placed limitations on the possibility for delegation.

Like many in my day, I paid a steep price for my hard work; we worked ourselves to the bone to meet deadlines, achieve results and hit targets. Many were not as lucky as I was to be able to go back to school and obtain a PhD. In today's world,

where technology and globalization have opened newer frontiers, the possibility of working smart, making a living and still having time to be with friends and loved ones is simply endless. With the internet and social media at our fingertips, certain limitations are forever kicked aside.

Today, online gigs and services are rendered without any form of contact between parties. Transactions are done without having to step out of one's living space. This development, to me, is a breakthrough in every sense of the word. And as efficient machines are invented to carry out tasks that were once done by humans, albeit much slower, it gives individuals the room to be flexible with their time and engage in other worthwhile ventures.

Admittedly, this could mean potential job loss for many people, but the fact is that with the introduction of machines to do simple tasks in more accurate and efficient ways, the human factor could be deployed to other more sensitive areas, thereby increasing capacity and overall productivity.

Another advantage of gaining more free time is that more people will finally have the time to pursue their dream careers and life goals. I imagine that many people are stuck doing menial jobs with the hope of making ends meet, not necessarily because they love the job. For some, they desire to pursue higher education, for others, they would prefer to sing, dance or even travel. With robots and androids taking on more of the menial jobs, people will find room to pursue what they love.



A SHRINKING WORLD

Years ago, business communication was complicated. In your immediate circle, you could shout down the hallway. Simple enough, though the sheer number of people speaking in that space may have made it difficult to hear. If you wanted to communicate across an office building, you might have sent messages through a courier – someone physically carried your message to its intended target. If you needed to speak to someone in another city, or even another country, you could make an expensive long-distance telephone call or send a letter by mail, and that would take a while.

When I want to send a communication today – regardless of how far it's going – it's easy. I just type a message into my device, and for the price of my internet connection, the message is sent! Soon, I hear a pleasant chime from my phone or computer and am able to read the response.

The world has shrunk so much, it is regularly referred to as a global village. The world now benefits immensely from the rapid integration of world economies. Globalization means the shrinking of our various economic spaces in order to forge better alliances and create rapid growth and productivity. The gains in globalization cannot be overstated, from swiftly falling costs of transport and communications, to technological advancement, to gradually increasing trade flows due to trade liberalization. Various forces have progressively led world markets to bring down prices of commodities and establish a foremost drive for economic growth.

The downside is that the costs of transportation and tariffs alone aren't the most influential factors. Progress in communication technology have indeed been nothing short of extraordinary. Conducting business via cellphone or electronic mail regardless of one's location should not be taken lightly as one of the main forces in the forging of globalization. Undeniably, the same high-tech advances have sparked protests that have since gone global. Yet, those who differ on issues of globalization have not stayed slow in their exploitation of the ability to interconnect and spread information swiftly.

Globalization is nothing new if you check the recent past. Even though time and the advancements of various sectors differ from generation to generation, many facets of the concept largely remain the same. The era most similar to today is that of deep industrialization which took place in the nineteenth century. The insurrection, which was largely industrial based, that had taken place in Britain back in the eighteenth century had extended rapidly into Europe and across to America. Fiscal evolution appeared remarkable and was powered by industrial progressions in carriage, infrastructure and manufacturing capacity.

The fact remains that globalization is here to stay. Member nations are daily exploring ways to handle challenges in a more closely-knit circuit. Unlike fifty years ago, doing business across continents need not be rocket science; all that is needed is a few tech gadgets and a trusted name or brand.

PART II



**EARLY LIFE, EDUCATION,
AND EARLY WORK**

In Anuphama Chopra's book "100 Films Before You Die," "Anand," a 1971 Hindi drama film, was listed. It's a heartwarming film about an oncologist who treats the poor for no charge starring Rajesh Khanna in the lead role. It was arguably his best top movie throughout his long career as an actor. More so, he was dubbed as the "First Superstar" of Indian cinema. You might wonder why I am telling you this. As you keep reading you will discover the role Rajesh Khanna has played in my own life.



GROWING UP

Before I went to America, the mighty country that nurtured me, I spent my early years in my beloved India, the country that gave birth to me. I am taking you through my early history so that you may understand how my life in India greatly influenced the way I made decisions later in life.

When I was very young, my parents travelled from one place to another within India because of my father's work. He was a workers' union leader, actively engaged in politics. My parents decided that it could affect my education if I went to school where they were living at the time because they may move suddenly, and this would disrupt my schooling. Because of this, they decided to leave me with my grandparents, in a small village in Kerala, India. It was a beautiful, rural place with paddy fields, coconut farms, and running streams surrounded by small hills. It can be likened to a vacation paradise except there was no electricity, not much commercial activity, and the main attraction was an extremely old temple, known as the Annapoorneshwari Temple. The temple itself is a very beautiful shade of blue with red and gold accents, and it is surrounded by a grove of palm trees.

The Annapoorneshwari Temple deity is a well-known Parvati, Hindu Goddess and wife of Lord Shiva. The temple is located in Cherukunnu, a small village near Kannur, Kerala, south west state of India. The deity is worshipped as Annapoorneshwari, the mother who relieves hunger. Because of this, the temple provides free food to anyone who comes.

I have fond memories of my school days in this beautiful place, and I had a number of friends in my neighborhood. With no electricity, there was not much to do after dark. Any reading or studying done after sunset was done with the very dim light that comes from one or two kerosene lamps. I lived in a house which was fairly old but built out of durable stones to last for several generations. It had been passed down to my grandmother from her mother.

In most Indian families, in almost all religions, the transfer of assets is only to male children, and the female children have no right to parents' assets except whatever they give to the female children as gifts during their marriage. This is known as dowry. This type of tradition where the transfer of assets is only bestowed to the male children and in some cases, only to the first-born male child, was generally true in most of the world until the uniform civil code of transfer of assets began in many countries some years ago.

The major exception to this practice was found in two places in the world: the first place is Kerala, India among the Nair, a Hindu caste. Among Kerala Nair families, the system for the transfer of assets through inheritance was through what is known as "Marumakkathayam." This is the matrilineal inheritance and descent, and inherited property was traced through females with no ownership rights bestowed upon males. However, men still controlled the management rights. The eldest male in the family is known as the Karanavar (Uncle), and all assets of the extended family were controlled by him as if he were the sole owner. But having no ownership rights, he had no right to sell any of these assets without the written permission of all the female sisters of his household. His wife has no right to these assets either.

The system of Marumakkathayam in Kerala has helped the independence of women in the region. In most societies in India and mostly everywhere else in India, women were subservient to men except in the Nair community in Kerala because of their property rights. I grew up in such a family when I was young with only my grandmother, grandfather, and my younger sister. As my grandfather was in his late eighties, he was not managing anything at home. My grandmother was in charge, but she gave me a lot of responsibilities even though I was very young. I completed high school when I was thirteen, about four or five years younger than most students. I was the top student of my class with distinction, and my school has produced some outstanding leaders in the country during that period even though the school is located in a less affluent area and with no real amenities or electricity.

I went to school in this beautiful village called Cherukunnu for six years, where I completed primary and secondary education. The name of the place means “small hill.” It was a gorgeous area full of lush green surroundings because the entire town is surrounded by water. It was a great place to grow up. Everybody in Cherukunnu knows each other, and everyone helps each other. It was a middle-class community with a lot of young children. I was one of the few children living there with grandparents, far away from my parents.

The central attraction of my town is a famous ancient temple. It was a feast for the eyes because of the exquisite architecture. Most people in my neighborhood were Hindus, but there were Muslims and Christians nearby. In addition to the main deity of the temple, Annapoorneshwari, there was also another deity, Krishna, in the temple. As a young boy I used to go to this temple quite often because it was within walking distance

from our house, and it was a place to spend time with friends due to the wonderful atmosphere. It was always vibrant with festivities! Periodically, there were cultural functions such as dance performances, religious lectures regarding yoga, Hindu scriptures, and other religious activities. I had the privilege of participating in many such functions, and it has helped to shape my thinking and beliefs, as well as understanding the values I still hold.

Among Hindus, Krishna is a well-liked god because of the wonderful stories about him as a child. When I was young, I started developing a close relationship with him not as a god, but as a close friend. I started going to the temple repeatedly, not to pray or ask for any favor, but just to be in front of Krishna. My relationship with him involved imaginary conversation with him like we were close friends. My relationship with Krishna has grown over the years, even though my later visits were far and few in between.

Meanwhile, there is a much more famous temple Guruvayoor where Krishna is the main deity, and it is a little farther from my home village. I went to this temple a few times during my high school days, and it has become more and more popular over the years. It has a large, dramatic red roof and several golden statues. Whenever I come to India from the U.S., I would visit Guruvayoor to see Krishna as though I am visiting a close friend of mine. I am not religious even though I have some knowledge of Hindu religious literature.

When I was growing up, my grandparents would do everything that my parents would have done. The relationship between grandparents and grandchildren is amazing, and I was lucky to be with them growing up because they would do anything

for me. Even though we were not that well off, they would always make sure I had everything I needed. My grandparents were deeply religious, and I had the opportunity to learn about Hindu literature, rituals, traditions, and values from them. I started to learn some very early lessons in Sanskrit because almost all Hindu religious literature was written in Sanskrit, which is probably the oldest fully developed language in the world. The literal translation of the word Sanskrit is “perfect meaning.” There are probably more Hindu religious scriptures than all other religions combined. I understand that this language has been fully developed over ten thousand years ago, and the language was practiced even before writing existed. Before the advent of writing, a method called Shruthy, a way of passing on the scriptures by means of singing, was practiced. Most scriptures are in poetic form and they were sung by scholars, passing the song from people to people and generation to generation.

The oldest Hindu religious scriptures are the Vedas. These scriptures are not really religious scriptures, but more cultural, ritualistic, and traditional scriptures. They do not identify any religious concepts other than recognizing the need to respect and live by the rules of nature. The Vedas come from the root word “vid” which means knowledge and are discussions of knowledge about everything. Originally, it was a collection of wisdom about everything they knew at that time, which was amazingly vast. I have a limited knowledge of Vedas, but I had a great curiosity to learn about them during my days living with my grandparents. The four Vedas are Rig Veda, Yajur Veda, Atharva Veda, and Sama Veda. These were mostly ritualistic practices related to nature. My understanding is that Vedas are not teachings of any form of religion, but a way of life

that leads to salvation. In the Hindu religion, one achieves salvation through self-realization.

I did not learn many of these concepts through any formal education, but I had the opportunities to read as well as listen to scholars who often visited the temple and gave lectures on various subjects. The way I understood self-realization was that one becomes part of universal consciousness. According to Hindu philosophy, it is not easy to achieve self-realization and it may take many rebirths before one achieves absolute realization. Then there will be no more rebirths and one will become a part of the universal consciousness. I did learn these concepts as I was growing up, and I continue to search for more knowledge and explore ways to analyze in a scientific way because I have been trained as a scientist. I am sure this would be a never-ending journey, and I do not expect to find all my questions answered in my lifetime. Nevertheless, it is a fascinating search literally and mentally.

As a young boy I started reading a book out of curiosity, something similar to the Christian Bible called Bhagavad Gita. Gita is a religious book which primarily teaches how to live life in all aspects. Gita is a part of a major Hindu religious scripture called Mahabharata with 700 verses found in chapters 23 to 40. Gita is a presentation of a narrative framework of a dialogue between Pandava prince, Arjuna, and his charioteer, Krishna. During this dialogue, Krishna advises Arjuna about the purpose and duties of life in the most dharmic ways. The concept of Dharma in the Hindu religion is revered, and according to Gita, Karmas should be carried out in a dharmic, righteous way.

Gita is an interesting book to read, because it teaches by means of stories how to manage one's life as it should be. The

book provides an enormous amount of knowledge and the ability to think and contemplate about the various aspects of life. I continue reading it today, and I get different values and ideas each time. I believe that this book has answers for any questions about the Hindu religion. I do not believe anyone can fully understand the knowledge without reading it many times. Each time you read Gita, you find different insights into the Hindu values system, and I would recommend reading it as many times as possible.

The basic purpose of Gita is to teach you how to reach self-realization. Krishna teaches Arjuna how he should lead his life and that there are three paths to reaching self-realization. First is the Bhakti Yoga: the pure devotion and surrender to your god. My wife practices this yoga. She also conducts various rituals such as poojas, prayers, and visiting various temples. My understanding of Bhakti Yoga is that it promotes an intimate understanding of oneness and harmony between an individual and the Divine. It consists of concentrating the mind, emotions, and senses on the Divine.

The second path is through Karma Yoga, which means through good work. According to Gita, doing any work should be done with full concentration and devotion. The right action is a form of a prayer. Karma Yoga is a path of unselfish action. One is expected to act according to Dharma without being attached to the rewards or personal consequences. Dharma is often described as a cosmic law underlying correct behavior and social order. Dharma signifies the order that makes life and the universe possible and includes duties, rights, laws, conduct, virtues, and the right way of living and a path of rightness. Also, Dharma designates human behaviors considered necessary for the order of things in the universe, principles that prevent

chaos, behaviors and actions to all life in nature, society, family as well as an individual. Dharma includes the religious duties and moral rights and obligations of each individual as well as behaviors that enable social order with the right conduct and actions that are virtuous.

The final and third path is through Jnana Yoga. This is through the path of knowledge and the path of self-realization. It is a spiritual practice that pursues knowledge with questions such as “who am I and what am I?” He meditates, reflects, and reaches liberating insights on the nature of his own self, Atman, and his relationship with Brahman. Jnana Yoga is about self-consciousness, awareness, and intellectual understanding of self. Self-realization is when one knows the unity between self and Supreme Reality or Absolute Truth (Brahman).

I started reading Gita when I was about ten, and I still keep reading. I understand more of it now, or at least I think I do. It's a fascinating read and lets me think about some complex questions and answers about life, and it gives a lot of opportunity to analyze and challenge your mind. The most valuable thing I learned from Gita is that, under all circumstances, you should do the right thing, but it does not clearly tell you what the right thing is. One has to come up with the right thing in one's own circumstances, and one finds the right action morally in a Dharmic, righteous manner. Another important aspect is that you have to do the right thing without giving any thought to how it would benefit you. Gita says that if you did the right thing, it would benefit all, including you. Moreover, Gita also says that if you expect anything in return for your actions, you may not be doing the right thing.

The lessons I learned from Hinduism reminded me of my father's words as I have quoted earlier: "It is futile to better your life and never raise an arm to help others. Remember that all you would ever possess is nothing but a gift; a gift given to you to bless others."

It means doing the right thing not only for one's own indulgence but more so for the welfare of others. As I faced crossroads in my life (and you will read more about his later), I kept reminding myself of what my father told me in order to do the right thing. But even with the wisdom I've gained from reading Hindu scriptures and listening to my father and watching how he lived, I wasn't always sure whether or not I was doing the right thing. And you'll see as you keep reading the value of critical thinking when making decisions that have consequences that would affect my family, my professional career, and my future in America.



MIGHTY CALTECH

In 1965, I was still a student at Coimbatore Institute of Technology in Tamil Nadu, India. I was doing quite well with the support of some exceptionally bright teachers who helped bring out the best in me. Even though they were strict, they were still supportive. I still recall the faces of my teachers. They were deeply interested in my well-being as a student and greatly influenced me in more amazing ways than I could've asked for.

I had been excelling well academically, but I was also looking for something else to do. Early that year, I came across an advertisement for an All India Talent hunt, which was being

organized by the United Producers and Filmfare. It was scheduled to begin holding auditions in Bombay (now known as Mumbai).

Out of curiosity, and without informing my family or friends, I applied for the audition. In no time, I was invited to come to Bombay for the audition, with all expenses paid. I then informed my parents and a few friends about the development before leaving for Bombay. On arriving at the venue for the audition, I met quite a lot of people all excited to audition. Many of them had aspirations to be actors and were looking forward to the experience. I, on the other hand, wasn't really up for a career in acting. I just came to the audition out of sheer curiosity.

The audition hall was massive, and there were so many people who had come to audition. At that point I had no expectation that I could be chosen as a finalist, but this would prove to be a really interesting adventure.

After a rigorous audition, the judges picked about one hundred candidates to go to the next round. Fortunately for me, I made it into the top 100. This meant I would have to stay in Bombay for a little longer. As we rehearsed and got ready for various acts, my hidden talent for acting began to unfold. Soon, after days of practice, I was again picked to be amongst the final ten. I was ecstatic.

As we made it into the next round, our rehearsal regimens became even more hectic. I had to practice a lot of lines (mostly in Hindi), roles, and dance steps. As much as it was demanding, I was sure it was worth the effort as we got closer to the finals of the competition.

Eventually, the list further dwindled down to three people. Surprisingly, I was one of them. This, of course, meant even more practice and rehearsals so I went through even more vigorous exercises.

The day we'd been waiting for had come. The ultimate winner was to be announced. Silence filled the stadium and all I could hear was the beating of my own heart. My palms were cold and sweaty, and I could feel the tension in the voice of the emcee as he flipped open the card that contained the name of the ultimate winner and the runners-up.

“Our judges have spoken. I have here the result of this year’s All India Talent hunt. Today, one of you will be hailed as the ultimate winner and be on your way to stardom. Are you ready?”

I could feel the muscles of my cheeks twitching. I was nervous about the result, but I also wanted to hear it to get it over with. Everybody held their breath. It was hard to tell what the emcee was reading from the card. He raised his head and scanned through the audience, further intensifying the tension.

“And the winner is...!”

His loud voice echoed throughout the halls.

“Mohan Ananda!”

Ha! Was it really me? I...I can't believe it. I won. I won!

Wait, what?!

Everybody was looking in the direction where one of us, the three final contenders, was sitting and the spotlight made his face float like he was already a real Bollywood star. My daydreaming didn't last for more than five seconds when I realized that the name they announced was not mine.

Rajesh Khanna...

He came in first, and I, third. That moment was the start of Rajesh Khanna dominating Bollywood and it spanned decades.

I believe I had one or two setbacks that cost me the title. First, I was quite young; only 18 at the time, and I think my immaturity might have played a big part in the outcome. Second, Hindi wasn't my mother tongue, so I struggled a bit with the lines, even though it wasn't that obvious to everyone. Third, I believe my lack of previous acting experience also stood out. Rajesh was older than I and was fluent in Hindi. He had more experience as he had been playing minor roles years before the contest was even organized. I think this went a long way in boosting his confidence and chances of winning.

After the contest, I was encouraged by various producers to keep the passion going and to invest more of my time and talent into acting as a career. They told me I had potential, and that I could become a superstar if I kept at it. I was also discouraged from returning home right away. They urged me to stay in Bombay and explore my newfound talent.

I thought about it and the many promises that it all held. I also thought about my dream of going overseas to study engineering. I knew I had to make a decision. Finally, I decided to return home and pursue my desire to become an engineer.

This decision turned out quite well, and I eventually found out that I had even greater talents. I firmly believe that what was meant for us won't pass us by, especially if we are to play a significant role in that vocation. For me, it's in the fields of science, physics, law, and engineering. Acting was not the world I was designed for. But my acting helped when telling stories to my grandchildren, so everything worked out well.

Another experience that is worth mentioning is my encounter with a famous company in India at the time called DCM (Delhi Cloth Mills) in 1967. This company, which was located in Delhi, had a practice of selecting undergrads to work with them as interns, after which they would be placed in management positions. Gaining an internship often required taking part in a written exam.

Again, out of sheer curiosity, I sat for the exams. It wasn't something I took seriously at the time as I had already been admitted to study at Caltech, so I never gave it much thought at all. And coincidentally, at the time of my writing this exam, my parents were living in Delhi. So, I returned home and was just about finishing my packing when I received a telegram.

"I have been directed to inform you that you passed the DCM intern exams with flying colors. Congratulations! This means you have been selected to be eligible for the next round of assessment.

You are therefore invited to DCM headquarters in Delhi for an interview. A flight voucher has also been issued to cover your travel expenses. See you soon." I thought about this generous invitation. What should I do, I thought?

And still, out of curiosity, I honored their invitation. The owners of the company, two brothers, interviewed me and were wonderfully pleased with my responses. So, they gave me a job. In fact, I was posted to a region in Rajasthan. My parents, upon hearing this news, were thrilled. They saw it as the hand of God nudging me to stay in India, instead of leaving for the United States. But their persuasions were not strong enough to change my already made-up mind. To me, going to Caltech was all I wanted at the time after deciding that acting wasn't for me.

"This is so exciting, however exhausting," I thought as I reclined in my seat in the economy class of the passenger plane I boarded. It was a few hours since we had left the Delhi International Airport. My family was there at the airport to see me off. Their love and support were next to none, making my final departure even more painful. My mother was continually asking me if I had taken all I needed, while my siblings took turns imploring me to write home frequently. My father was calm as usual, acting like he wasn't moved by my leaving. As his son and staunch emulator, his efforts to conceal his true feelings didn't go unnoticed to me. I was going to miss him terribly.

The old Boeing 707 aircraft was headed for a final destination of San Francisco International Airport (SFO) with a number of stops. The first stop was Rangoon (the capital of Burma, now Myanmar) and then Hong Kong where I had an overnight stay. This was the first time I had travelled outside of India. I went around Hong Kong and it was a beautiful city with a number of tourist attractions. I did not have much money with me because, in those days, the Indian Government would not allow people to take more than \$8 outside of India. I had to

play it safe and spend nothing at all because I did not have any other money.

The next day I left Hong Kong for Tokyo, then on to America. As we flew across the Pacific, I couldn't help but wonder what lay in store for me on the other side. I looked down at the shimmering ocean, knowing that my future lay on the other side. I had read a lot about the United States and about Los Angeles, California, but I knew very well that I had a lot of learning to do. Besides, there is only so much that books can teach. After an extremely long flight, the plane landed in Honolulu, Hawaii, the first stop in the United States. I had to go through the immigration process and customs in Honolulu. The immigration process for a first-time immigrant was especially difficult and I have heard incidents of highly traumatic experiences. After a short stay in the Honolulu airport, I boarded again to come to mainland America. After a long flight, our plane slid across the tarmac of SFO. We were glad to have arrived safely.

As I left the airport, I was met by Gopalakrishnan who was a student at the University of California, Berkeley. I was meeting him for the first time, and you will soon learn how we met as you read on. While he still looked similar to me as do two young men with Indian ethnicity, his outfit reflected the flair of American fashion with a blue sweater vest on top of what seemed to be a short-sleeved button-down shirt with a collar. He's taller than me by an inch and it showed in the length of his khaki pants reaching just above his ankles, which made his gray socks and brown cordovan shoes visible. And then there I was. Everything I had, except for my white shirt, was brown. From my clothing to my shoes to my bags. But such distinction didn't matter. I just knew that that day, my life in

America would be filled with so many colorful experiences and adventures.

Gopalakrishnan is originally from Trivandrum, the capital city of the State of Kerala, India. Before leaving for the U.S. from Delhi, I had the pleasure of meeting with Dr. K. L. Rao, then a cabinet minister of the Central Government of India with my parents at Dr. Rao's residence for a social gathering. During our conversation, I told Dr. Rao that I was leaving for the U.S. for higher studies, and I would be going to Pasadena, landing first in San Francisco and from there I would be flying to Los Angeles. He then immediately introduced me to his daughter Nirmala and said that she had just come from a short vacation from San Francisco where she was also studying. Nirmala smiled at me and coyly asked, "How are you doing?" to which I responded, "I'm fine," also in English. Dr. Rao said that Nirmala would be getting married soon to Gopalakrishnan who was in San Francisco and she would contact him to pick me up from the airport. That is how I met Gopalakrishnan. He drove me to his apartment in Palo Alto near the Stanford University campus. He was extremely nice, showed me around the town and took me to a great Indian restaurant – of course.

Gopalakrishnan also introduced me to his roommate Narendran, who was also from Trivandrum, Kerala, and I stayed overnight in their apartment. The sofa bed I slept in felt great for my aching back after my long-haul flights sitting on airline chairs. I stretched my legs and relished the comfort of being able to lie down straight on my back. The next morning Gopalakrishnan took me to the airport to catch a flight to Los Angeles. We kept in contact for some time. As time passed, our contact became less frequent, and from last I heard Gopalakrishnan went

back to India and settled down. Narendran, on the other hand, married a Japanese girl and settled in Japan.

By noon my flight landed at the Los Angeles International Airport. As the plane was landing, I could see the beautiful landscape of the widespread city and the suburbs of Los Angeles from the air. The city was tucked between low mountains and the beautiful Pacific Ocean. As the plane glided towards the airport, I caught sight of the Hollywood sign. It was so much smaller than I had pictured it.

I was full of joy and anxiety about this new adventure. I took a bus from the airport to the Huntington Hotel in Pasadena. I quickly seized the opportunity to see the beautiful city as we drove. Pasadena is a gorgeous city that looks older than Los Angeles. Many of the buildings are Spanish style with terra cotta roof tiles and adobe-looking exteriors. When I reached the hotel, there was a student, Sathish Desai, a fair-skinned Indian young man, from Caltech waiting for me to give me a ride to the campus. I hesitated at first. It was a Sunday, and I did not have any place to stay. Sathish insisted that I should come; he was awfully excited to show me around. To put my mind at ease, he introduced me to someone at the international student desk at the campus who could help me find a place to stay.

I was initially met with bad news. There was no room for me at the school dormitory. A sweet lady at the international desk suggested that I should look through the ads posted on the notice board and contact them to see whether I could secure a place to stay. Now I was more worried about what would happen if I could not find a place to stay. I was in a foreign land with only \$8 in my pocket. I couldn't use that to rent a

few nights at a hotel. I called a few numbers on the list and received cold responses of “Sorry, we’re full.” At probably the fifth or sixth number, I heard the joyful voice of Mrs. Sarah Smith.

Good news, finally. She had a room for me!

Mrs. Sarah Smith was incredibly nice to me. She said I could come right away, and she would have a room ready for me to use in her house not far from the campus. I was relieved and felt at home immediately. I did not waste time. I asked the brunette lady at the front desk called Jesse how I could get to the house, and I gave her the address. In Part 1 of this book, I have talked about my involvement in the creation of the GPS. If I had arrived in the United States as a young man during the internet age, I would’ve just opened Google Maps from my phone and be on my way without any help from anyone. While the GPS is a great technological advancement (and I’m proud of my participation in its creation), I am happy to have enjoyed a time where human connection was valuable to find your way.

Jesse looked at it and immediately said that it was quite close, and I could walk there. She showed me the direction to the house on a map and gave it to me. I had light luggage, so I did not have any problem walking to the house. As I reached the house, I noticed the neighborhood was incredibly beautiful. The houses, with well-manicured front yards, were gorgeous! I started to realize that I must be very lucky to live in such a beautiful place. With such a realization, all my worries and anxieties disappeared.

As I rang the doorbell, my heart was pounding out of excitement. Mrs. Smith opened the door with a beautiful smile and asked, “Did you have any problem finding the house?”

“Quite the opposite,” I said, “I enjoyed the walk, and it was indeed close to the campus,” I continued with a cheery tone quite too obvious in my voice.

Mrs. Smith was a sweet soul. She treated me like she would her own son, and made sure I was comfortably settled in. As a matter of fact, her kindness was one of a kind. Soon, I got settled in. In anticipation of my thorough registration that was to commence the next day, I remember finally falling onto the sheets out of sheer exhaustion and thinking to myself, *“this is it! I’m finally here, a dream come true!”*

My head was begging me for some rest, but my heart pounded away in anticipation. What was I to expect? I tried to make sense of it all before I was overtaken by a deep slumber.

I remember it was a whirlwind of events from then on out. I was up and about, carrying out all of the necessary registrations and documentation, after which I had to head over to my first lecture. As I walked into the lecture hall, I was particularly drawn to the various faces present, each one minding their own business. Every face I met greeted me with a smile, but clearly, they weren’t there to make friends, or so I assumed. I wondered if I would fit in with all of these bright and ambitious people.

It didn’t take long before the doors burst open, and the professor walked in, heading straight for the presentation area. He was a tall and handsome man, full of life and intentions in

his demeanor. He dropped his briefcase, opened it all in one sweep and brought out his notes on Solid Mechanics.

“Good day class,” he greeted. Professor Wolfgang Knauss went on to introduce himself and straightway wrote on the board the course he would be handling for that quarter.

“Tensor Notation,” he said. *“I expect that you might have covered the rudimentary knowledge of this topic before ever gaining admission here at Caltech,”* he added, *“so I will get straight to the point,”* he said as he kick-started the lecture.

An interesting thing began to happen to me. I began to sweat profusely. First, I didn't know anything about tensor notation, nor had I learned anything about it back in my undergraduate school in India. The more he spoke, the more I got lost, like in a complex maze with little or no light. I instantly began to panic. I felt dizzy, and for a moment I considered rushing out of the lecture hall, but I didn't want to make a scene. This was my first lecture at Caltech, and I was already over my head! At that moment, I did not know if I would survive the day.

“This is terrible; I may not make it out of here in one piece!” I thought to myself, as my pride began to crumble. I looked around to see if there was anyone as confused and out-of-place as I was, but everyone appeared to be getting on well with the class. This experience was a game-changer for me. As the professor kept teaching, my mind couldn't help but drift away. I became more and more perplexed by what was happening. For a split second, my ill-preparedness and inadequacies came to surface. I felt entirely out of place as I sat there, blinking rapidly and repeatedly as though by doing so, I would somehow awaken from a frightful dream. It was

clear as day that I wasn't as prepared as I had hoped I would be.

This lesson went a long way in kicking my pride to the curb. I guess being one of the brightest from where I came from got the best of me. It was a humbling moment, but also an important one for me.

Then the most exciting thing happened. My saddened and frightened heart began to feel hopeful for some reason. I knew I was ill-prepared, but I also knew I was fully capable of meeting any challenges that might arise. I then resolved that this challenge wouldn't stop me. This resolution would later prove to be timely and useful.

As time went on, I began to settle in pretty well on campus. With the help of some members of the staff and a few friends and colleagues, I quickly began to feel the warmth of home all around me. Soon, the beautiful city of Pasadena was in my heart, as was my home. I recall having charming neighbors, always courteous and full of smiles.

Also, the environment was utterly breathtaking. I remember wondering how in God's name, the residents of Pasadena kept the environment clean, unlike it was back in India. This is one of the many traits that quickly endeared me to the small city of Pasadena. It wasn't long before I too picked up the habit of always using the trash cans whenever possible.

While on campus at Caltech, one of my many proud moments, which I would never forget, was meeting a host of brilliant people, some of which were Nobel Prize winners. Notable amongst them was the late Richard Phillips Feynman, who was

an exceptional theoretical physicist. He was famously known for his strides in the fundamental origination of quantum mechanics, the physics of the superfluidity of supercooled liquid helium, and the theory of quantum electrodynamics. He did tremendous work in proposing the parton model in particle physics. Feynman was honored with the Nobel Prize in Physics in 1965, due to his contributions to the advancement of quantum electrodynamics, alongside Julian Schwinger and Shin'ichirō Tomonaga.

My encounter with Feynman was extraordinary. As you keep reading, I will tell you more about how my interactions with Feynman helped shape my thinking and problem-solving skills.

Another Nobel Prize winner that I had the opportunity of meeting was the Late Murray Gell-Mann. He was another extremely bright physicist who was honored with the 1969 Nobel Prize in Physics, due to his work on the theory of elementary particles. At Caltech, he was the Robert Andrews Millikan Professor of Theoretical Physics Emeritus. He was an eminent fellow at many institutions, a professor of physics at the University of New Mexico, and the Presidential Professor of Physics and Medicine at the University of Southern California.

Caltech has indeed had the privilege of producing quite an impressive number of Nobel Prize recipients, some of which I had the opportunity of meeting and being mentored by. This, I must add, contributed significantly to shaping my mind as a physicist, a professional, and as an agent of impact and change.

It is worth mentioning that while I was in India, looking forward to gaining admission abroad, I did apply to several

reputable schools; and as fate would have it, I got admitted to five of the schools I applied to, four in the United States and one in Canada. I chose Caltech simply because I had a book called, “Elements of Gas Dynamics” that I loved so much. It was co-written by Liepmann and Roshko. I believe the sheer thought of having the opportunity to meet and possibly learn under both of them was all the motivation that I needed.

Growing up in India, one of the things I never got to experience was environmental beauty. Back home, not many people appreciated the essence of ecological organization and vision. But while at the Caltech campus, I was compelled to enjoy this phenomenon at every turn. The entire school was a beautiful thing to behold. The well-structured environment and the exceptional cleanliness amazed me. I believe that the whole climate of the Caltech campus was carefully crafted to enhance learning, and if indeed that was the case, I must say it did its job perfectly. The lovely, serene environment contributed immensely to our overall focus and assimilation.

Caltech was an erudite institution rich with history that was nothing short of enviable. The work rate for average students was absolutely phenomenal, going by the fact that we, as students, knew that there was a legacy to emulate and protect. The stakes had long been set, and they were high. As a result, we were open to new challenges. So, each day was another day for fresh challenges and the opportunity to outdo ourselves and others. I must confess that this made studying at Caltech extremely tedious, but it did work up our appetite for learning to very high levels. In time, facing challenges was not only an everyday occurrence, but it became the norm. We lived for challenges and never ran away from them. I believe this was a character-building experience for me, not only in achieving

outstanding results at Caltech, but also from other ventures I pursued later in life.

Caltech was ranked one of the very best universities in the United States back in the '60s, and its faculty for engineering and applied sciences was equally outstanding. We had the privilege of learning under a vast number of seasoned professors. What stood out for me was the fact that our teachers weren't merely concerned with teaching, they were concerned with us actually grasping what we were taught. So, by engaging us in one way or another, they brought out the best in us.

Critical and analytical thinking abilities are fundamental in any workplace. It is crucial for collecting data, resolving severe problems, making coherent judgments, as well as the summary and execution of data and projects, respectively. In today's market, having such skills is not only a prerequisite for landing top jobs but also a must for truly effective performance. In my experience at Caltech, I must say deliberate efforts were made by the faculty of the engineering and aeronautical engineering departments to cultivate these skills in all its students.

From asking the right kinds of questions, enhancing observation skills to extensive reading, and learning about how things work, to practicing the art of problem solving and critical thinking leading to clear decision-making. We were constantly exposed to various levels of learning all aimed at enriching us as much as possible. For most students back in my day, our sense of curiosity was simply unstoppable. I think this heightened our cognitive functions, making us highly attentive with acutely sharp memories. And by examining the process that causes a task to run smoothly within anything,

we got a better grasp of the process, which was critical in motivating our analytical abilities.

Furthermore, understanding that every problem isn't without a solution, we learned to mentally capture each problem and adequately articulate its solution. In fact, we were trained in multiple disciplines in order to find more than one answer to an array of problems. We were given the needed platforms to test our proposed solutions and come up with the ones that worked most effectively.

Keep in mind that for every problem, there is a solution. In order to find it, we must visualize and articulate the presentation of a particular concept. Prepare two, three, or even more solutions to a problem. And, if possible, do test runs on those solutions, and see which one is the best and the most logical. When it came to decision-making, we were taught to be unbiased, rational, and fearless.

My enthusiasm for research took another dimension as I was exposed by the Caltech institute on many fronts. I gave myself wholly to every project I was assigned, and this simply endeared me to research even more. With the support and tutelage from many professors and teachers, I excelled tremendously. I believe this background contributed a lot in paving the way for me to further acquire doctorate degrees.



TAKING CLASSES AT PASADENA CITY COLLEGE

Like I stated earlier, Caltech was magnificent to behold. With its well-planned out internal and external features, it was

practically impossible not to be affected by it all. The buildings were one-of-a-kind. The landscape was breathtaking. The campus was set perfectly into the city, and it was often difficult to tell where the campus ended, and the city began. It was like wandering through a delightful garden. Around every corner was a new beautiful building or park. There is an enormous park in the middle of the old part of Pasadena that has an outdoor band shell where musicians would play on warm nights as the sun set in a blaze of orange and red in the west.

Because I lived not too far from the campus, walking to school and back had been a joyful experience for me. The carefully cultivated environment encouraged serenity, mental contemplation, and calm. The environment itself helped me get through each day, no matter how heavy my workload.

As I gave myself entirely to my field of study, I noticed that it didn't satisfy all of my many curiosities. It was as though the more I studied, the more questions were left unanswered, especially in areas outside of engineering. This, of course, gave me cause to worry. It felt as though I was boxed in, and I wondered if there were things I was missing. If my curiosities could not be sated by Caltech, what could I possibly do?

So, I began to nurse the desire to venture out of my comfort zone. It wasn't as though I had so much time on my hands that I didn't know what to do with it, nor was it me falling out of love with my field of study. I just wanted more, and I felt like my plate could handle more.

After some thoughtful reflection, I decided to visit the student counselor at the Pasadena City College, a few blocks from Caltech. She was an exceptional expert who took the time

to hear me out and understand what it was that I needed. After some questions, she encouraged me to pick a few elective courses from other departments that I felt could help satisfy my curiosity. She, however, warned against being overconfident, which might lead to failing my core course in the name of trying to fulfill a curiosity. I agreed with her as I also recognized this risk.

I listened to her suggestions, and I was thrilled to follow her many pieces of advice. Together, we went through a list of possible courses that I could choose. After much deliberation, I settled on anatomy and physiology. I remember feeling excited as I left her office. I looked forward to the new experience and couldn't wait to learn new things. In a matter of days, I had registered for anatomy and physiology courses.

I think one of the things that made me obsessed with constant learning was my ever-growing curiosity. I loved to ask questions any chance I got. So, as I edged closer to the end of my stay at Caltech, I began to pick up an interest in human anatomy and physiology. After much thought, I became open to the idea of taking some of the courses within that field. There was something beautiful to me about human systems. They were designed by evolution to be perfect. It was a feat of engineering that I felt could not be overlooked simply because it came directly from nature rather than a sterile lab. I felt that I needed to know more about this in order to give my other studies context.

After more research, I decided to register for some courses in the field of human anatomy and physiology. I was a good manager of my time at Caltech, so it didn't stress me out as much as I had expected. I must add that these courses opened

my eyes to what the human body is made up of, its internal organs, their intricate connections, and all the systems working together. I saw various answers to my many questions about the body and how it works.

One of the lessons I had to take due to registering for anatomy and physiology involved the dissection of a human body. I remember being nervous when the day of the experiment came. My mind was flooded with questions: what should I expect? Will I find the experience too much to handle? My nerves were buzzing!

Upon seeing the scalpel slice open the bowel of the still cadaver on the surgical table, my pupils fully dilated. I didn't want to miss a thing! I looked closely, alongside my classmates as the intricate organs were exposed. What baffled me were the marvelously arranged inner organs, each one in its place, inches from one another. As the professor spoke and we took notes, my mind traveled with such speed and processed what I was seeing. It was indeed an unforgettable moment for me. I wondered if this would be a turning point for me. It turned out that it was, but I didn't know it yet.

My endemic curiosity had always led me to the path of medicine. I had always wondered what the human body was capable of doing once it was at its physical peak. This led me to ask further questions about health, well-being, diseases, cause and effects, and many other related areas. I always had an interest in biological science and the thought of pursuing a career in the future still lingered in my mind.

While it started as just a curiosity it developed into a sincere love for the field of medicine. The desire to pursue it after I was finished with mechanical engineering grew even more.

As time went on, I found that I struggled with whether or not to continue on the path of physics or to switch to biological science. I had enjoyed my extensive study in the field of applied physics, but my love for medicine and the exploration of the human anatomy also tugged at me. I always felt conflicted about totally switching to medicine, but I also considered pursuing it alongside engineering. Soon, the opportunity would present itself.

Recognizing my passion for biological science and even going as far as picking up a few elective courses within the department of anatomy and physiology, I knew I had it in me to pursue a second career in medicine. But as I reviewed the tasks before me and the possibilities in the future, I made the decision to put off my desire to follow the path of medicine for the time being. I feel this decision helped me focus more on the pursuit of excellence in the field of engineering.



THE DAY BOBBY KENNEDY WAS SHOT

Disapproval of the United States' involvement in the Vietnam War started with protest marches in 1964, primarily against the ever-increasing role of the American government in the War. This climaxed in a far-reaching social movement over the next few years. This movement helped give character to the vigorous and divisive debate going on in the United States during the second half of the sixties and early seventies. The

question on everyone's mind was: how and when will the war end?

Most players in the peace movement were students, women, or anti-corporation hippies. Opposition grew as the African-American civil rights groups, women's liberation movements, and subdivisions of organized labor participated. Additional involvement came from many other groups, comprising educators, clerics, media, attorneys, and military veterans.

Following the examples of Gandhi's and Martin Luther King Jr.'s model of civil disobedience, marches and actions were mostly peaceful and nonviolent, except for a few events which intentionally provoked violence. By 1967, polls indicated that the majority of Americans thought that our involvement in Vietnam was a disaster.

At the time of this national uprising, I was still a student at Caltech. My mind was still relatively young, and my disposition was largely immature and unfounded. However, my position about the war was that I felt it was extremely unnecessary and expensive. The losses the United States incurred in terms of young and vibrant lives, the destruction of property, and the continuous upgrading of military hardware was shocking. Additionally, I found that I valued all life, regardless of national origin.

As much as there were arguments for and against North and South Vietnam, it didn't change the fact that their various leaders allowed their disagreements and differences to deteriorate into a full-scale war that was completely avoidable. I personally felt there was no profit in war. No matter what a nation gains from a war, it loses more from its soul.

In 1968, President Lyndon B. Johnson was set to deal with a primary challenge from Eugene McCarthy who served in the *United States House of Representatives* from 1949 to 1959 and the *United States Senate* from 1959 to 1971. The strength of the McCarthy campaign rested firmly on an anti-war platform, which many saw as a liability.

When New Hampshire was done voting, and the results were collated and announced, McCarthy did not win the first primary election; however, his performance did astonish pundits. This added fire to an already heated campaign, with the Johnson campaign knowing that their match towards winning other states was going to be an uphill task.

Then on March 31st, President Johnson shocked the nation when he came on national television to announce his withdrawal from the presidential race. This unprecedented action took the nation by storm and triggered an unexpected political trajectory for the country.

At the time, I wasn't eligible to vote, but I still had political preferences. Like most young people, those preferences were not inspired by thorough investigation or due diligence. We just chose because we "felt" so-and-so candidate could do the job best. I must add that my political leaning had no racial influence at all. As much as I was surrounded by an upheaval of an interracial revival, I didn't allow it to influence my preferences.

The Democratic Party then saw the emergence of various candidates, who sought the nomination for president, including Hubert Humphrey (President Johnson's Vice President) and Robert F. Kennedy.

While Vice President Humphrey sought to maintain the policies of the Johnson administration (including a pro-Vietnam War campaign and support for the South Vietnamese government), the likes of McCarthy and Kennedy ran strongly on an anti-war platform.

While I followed the political trend of the nation at the time, I was committed to doing my best to see the election of competent leaders. I was determined to do this, not by merely supporting a party whose ideals I agreed with, but by also giving my time and resources towards a successful campaign.

Of all the candidates that sought the Democratic Party ticket, Robert F. Kennedy drew my attention the most. Before he ventured into politics, Kennedy was one of the most brilliant lawyers in the United States. He stood by the truth, promoted justice, equality, and equity. And when he was appointed as the Attorney General of the United States from 1961 to 1963, he performed his duties with the utmost dignity, despite criticism that his appointment was the result of nepotism.

Robert Kennedy's tenure as AG was renowned for its civil rights movement advocacy and fights against the Mafia and *organized crime*, amongst other things. After his brother, John F. Kennedy was assassinated, he continued in office in the *Johnson Administration* for some months before leaving to run for the United States Senate from *New York in 1964*, in which he won. At that time, no one knew the tragedy his future held...

As a U.S. Senator, Kennedy vehemently stood against racial discrimination, then later against U.S. involvement in the *Vietnam War*. He was at the forefront of advocacy for *human rights, social justice*, and equality. He was so fond of walking

these paths, that he nurtured strong friendships with the likes of Martin Luther King Jr. and *Cesar Chavez*.

On the strength of these findings, I took it upon myself to call his campaign office and serve as a volunteer. They were open to volunteers and it wasn't long before I was brought onboard.

Working with the Kennedy campaign team, I learned a few things about politics and campaigning, one of which was that every victory meant a lot of sleepless nights. We worked tirelessly for each round of debate, door-to-door, and street campaigns. This meant growing a thicker skin because of all of the doors that were slammed in my face.

Soon, the long hours and sleepless nights began to pay off. Victories soon came from Nebraska and Indiana. Now, our sights were set on winning California and South Dakota on June 4th of 1968. Given the fact that the McCarthy campaign had some edge over Kennedy's in terms of fund raising and organization, California became the ideal place for the Kennedy campaign to make his appeal to the voters. We knew that a defeat in California would mean an end to the hopes of clinching the nomination. We didn't know it then, but our time in California would prove to be much more shocking than we could have imagined.

As much as Kennedy was largely considered the favorite to secure the nomination, we knew that he was the weakest candidate as far as the South Dakota primary was concerned. This was because McCarthy was a sitting Senator from neighboring Minnesota, and Humphrey practically grew up in South Dakota.

Kennedy and McCarthy met for a televised debate on June 1st during the final days of the California campaign. Despite Kennedy's optimism about putting a dent in McCarthy's strength in California, it all turned out to be disappointing as the debate was declared indecisive. Nevertheless, the Kennedy camp got a consolation when they learned that undecided voters preferred Kennedy to McCarthy by a 2 to 1 margin. This would be a first for RFK.

On June 3, RFK travelled to San Francisco, Los Angeles, San Diego, and Long Beach as a last-chance effort to win the California primary. RFK firmly believed that a win in both California and South Dakota could help sway Democratic Party leaders in his favor. Kennedy later went on to win the South Dakota primary by a commanding margin, defeating McCarthy, 50 percent to 20 percent of the total vote. Kennedy also went on to win in California with about 46 percent of the vote to McCarthy's 42 percent.

This was an important win for the Kennedy campaign and the leading prize in the quest for the nomination. Under the plurality voting system, Kennedy was given all of the state's delegates to the Democratic National Convention, despite having gotten only a plurality of the vote, rather than a majority.

The victories in California and South Dakota lifted the morale of the Kennedy camp. At that point, we were ecstatic. I remember the joyous and laughing faces, the friendly handshakes and hugs. Robert F. Kennedy was on hand to celebrate with the whole team and said a few kind words. We then looked forward to attending the gathering alongside supporters later that evening at the Ambassador Hotel in Los Angeles, California.

After the victory, Robert Kennedy was swamped with reporters and fans. There was a lot to manage at the time. I remember we all gathered in the ballroom of the Ambassador Hotel, where I had the privilege of sitting right in the front row.

The gathered crowd was excited when Kennedy took the stage and began to speak in his usual articulate fashion and trademark Boston accent. It was a proud moment for us all. I listened intently to his words as he delivered messages of love, optimism, and hope. He spoke about uniting the country, bringing justice to all, and ending needless wars. I remember his last words before the big cheers, *“My thanks to all of you, and now it’s on to Chicago, and let’s win there!”*

By the time Robert Kennedy was done with his speech, it was well after midnight. The crowd cheered as he made his way from the stage, with the media surrounding him as they took pictures and attempted to get him to speak to them. The camera flashes created a dizzying strobe effect.

I made my way out of the ballroom with a couple of friends. We walked and talked as we spoke about what the next journey would be like. I remember I said my farewells to them and headed for the parking lot. I entered my car and took a few minutes to breathe. I was about to drive out when I noticed a slight commotion behind me.

I quickly stepped out of the car and began to walk back towards the hotel entrance. As I did, my heart raced fast as I wondered what was happening. I confronted a lady and enquired, *“Hey, I heard the commotion; is everything alright?”* The lady looked at me in dismay and immediately gave me the horrible news.

“Robert Kennedy has been shot!” the lady exclaimed as she quickly dashed away. I couldn’t believe what she had said. After a further inquiry from other passersby, I finally came to the realization that what the lady had told me earlier was true.

This news was devastating to me; coupled with the fact that, as a volunteer, I knew Robert Kennedy personally. I had, in fact, spoken with him briefly just minutes before he was shot. He was friendly, compassionate, and understanding. The thought of him being shot or killed was unbelievable. I rejoined other members of staff and volunteers who were all completely devastated. We all awaited further news on the situation.

The news cameras were reporting just a few feet from where we were still gathered. It felt as though I was in two different realities at once. It was like watching the news from your home, and then seeing yourself on screen. At no point in my life until this moment had I felt as though I was at the exact spot that history was being made...as it was being made. It was a horrifying feeling.



EXPERIENCES OF WORKING IN THE CHEYENNE MOUNTAIN

During the peak of the Vietnam War, work wasn’t easy to come by. Many factors affected the economy at the time, and people could hardly find jobs. I had just graduated from Caltech, around 1968, and was looking for a job as well. I employed a creative method, which later got me a job in one of the most desired places in the United States—NORAD.

To obtain higher levels of clearance, I was left with no other option but to apply for permanent resident status. In Part 1 of my memoir, you will remember the dilemma I faced when I made the decision to apply for permanent residency. This had various implications, the foremost of which was my becoming eligible to be drafted by the SSB to serve in Vietnam. I looked at the opportunities before me and decided to apply, knowing very well that I stood a better chance of expanding my career if I did.

My application was swiftly considered, and the necessary documentation was done. In as little as three weeks, my green card was ready. Unlike today, getting approved for a green card wasn't as cumbersome and lengthy a process. I received it in the mail and submitted it to my employer in an attempt to get a higher security clearance.

As soon as I was cleared, my exposure to sensitive materials and information was upgraded. I had the chance to work more effectively, with so much intel and with very bright and high-ranking individuals. My work at NORAD allowed me to learn things that I had not envisioned before.

Back then, working at NORAD was terribly hectic but, for many people including myself, having the opportunity to work there was a remarkable goal to go after. What I didn't realize when I started working at NORAD was that I'd be helping to protect the United States from a nuclear attack! I'll explain...

After I got the job at NORAD, I began to work my way up the ladder. I did consider myself highly privileged, but at the same time, I knew there was no place at the organization for mediocre or lazy employees. I knew I had to give my best if I was to

survive at NORAD. I also knew there were a thousand people waiting to replace me if I didn't put my best foot forward. So, I gave myself wholly to the job and became as malleable as I could be, eager to learn and improve at every turn. This earned me not only more knowledge and wisdom, but a healthy reputation among my colleagues. This earned me privileged roles and duties at System Development Corporation (SDC), one of the major service providers for NORAD in the areas of system development, installations, maintenance, monitoring, and observation.

NORAD was one of the first places I worked in after graduating from Caltech through employment with SDC. It was mainly a think tank and operational center for the United States Air Force, with offices at Cheyenne Mountains and Colorado Springs.

This arm of the United States Air Force was tasked with inventing an innovative solution for the prevention of any nuclear attacks on American soil. Given the highly volatile relationship that existed between the United States and the Soviet Union, the threat of being attacked with such weapons of mass destruction couldn't be ignored, and the American government put up measures to prevent such a tragedy from ever happening.

Our job at NORAD was to design simulations of attacks at various points of entry into the United States airspace using the Single Integrated Operational Plan (SIOP). We then needed to develop countermeasures and workable solutions for early detection, prevention, and minimum damage to life and property in the case of a successful attack. These drills were carried out regularly, and experts came up with brilliant solutions to handling the various problems the country might

face. This plan integrated the capabilities of the nuclear triad of strategic bombers, land based intercontinental ballistic missiles, (ICBM) and sea-based submarine-launched ballistic missiles (SLBM). The SIOF is a highly classified document and was updated annually until 2003 when it was replaced by Operations Plan (OPLAN).

My job was in the area of developing tools to perform drills to support SIOF. These experiences opened my eyes to the realities of nuclear threats and their devastating capabilities to America and all of humanity. I also learned a great deal about how to secure the North American airspace, leaving no stone unturned.



BIRTH OF PAN SCIENCE SYSTEMS

I worked in the public sector for about twenty-eight years. I always wanted to venture into entrepreneurship even though I never had any formal training along those lines, but it had crossed my mind many times. However, when the opportunity to explore this possibility presented itself, I did not hesitate for a moment. What I did not know was that the reality would be far from what I had expected.

I remember being at work one day not long after finishing my Ph.D. from UCLA. One of my colleagues and mentor, Jim Dyer, with whom I had associated very closely approached me.

“Hey Mohan, I have been thinking of kick-starting a research-based company,” he said. “Would you be interested in being a part of it?” he asked.

I sat down and listened to his ideas about the business, and I thought it was brilliant.

“Okay, look, I’d be glad to work with you on this. I think it’s brilliant,” I said as he nodded his head in appreciation of my compliments.

He called the company Pan Science Systems, Inc. (PSS). It was designed to provide research on systems engineering related to space missions. This company went on to work with many government bodies in the areas of research and consultation.

One thing I learned while helping to start up PSS is the nitty-gritty of setting up a company. It was my very first, and I saw firsthand the struggles that came with setting up, running, and sustaining a company.

PSS worked with NASA in getting information for them by means of carrying out research and offering consultation where necessary, especially during the period where the Earth orbit mission was a priority. The collaboration was reported to have been cordial and extremely successful.

PSS also worked with NORAD. Like with NASA, we provided data collection services, research, and consultation. We collaborated with NORAD in the effective delivery of airspace surveillance systems. This collaboration was a huge success.

During my experience working with PSS for about two years, I had the opportunity to work with a multinational Japanese-based company called Fujitsu. This was a company owned by Dai-ichi Kongyo Bank, one of the largest asset-holding banks in the world at the time. Back then, they were working on

developing computers. During this time, I would often visit Japan and work with the company on various technology solutions. This afforded me the privilege of meeting and working with top-level staff in the company. Our main focus was on the development of hardware parts and software applications.

My exposure to Japan also allowed me to play a really useful role in their then-nascent space programs. Thanks to recommendations from many colleagues, I was invited to lend my expertise on ways to move their space programs forward.

I was later privileged to work at Jet Propulsion Laboratory (JPL), a private technology-based firm, owned by the California Institute of Technology, but run primarily to offer technological-based solutions to NASA. JPL was tasked by NASA to provide innovative solutions for all of its unmanned interplanetary based programs. And like other NASA affiliated centers scattered across America, JPL was wholly committed to excellence and the development of breakthrough innovations. Until I started working there, I had no idea what amazing ventures I would become a part of; the innovations we would develop, and the brilliant minds I would work with.



EXPERIENCES AT JPL

Nestled in the San Gabriel Valley town of La Cañada-Flintridge, JPL is a collection of modern-looking white buildings that resembles an office complex. But inside the buildings are brightly lit, impeccably white labs where teams of engineers are hard at work on new ideas.

JPL was and still is an incomparable research center that designs and executes robotic space and Earth science missions. JPL played a significant role in the birth of the Space Age, and it did this by building America's first-ever Earth-orbiting science satellite. It also developed the very first ever effective interplanetary spacecraft, along with launching robotic missions into space to understudy planets within the solar system, comets, Earth's moon and asteroids. JPL, alongside these critical missions, designed and created NASA's Deep Space Network, which is a wide-reaching system that links with interplanetary spacecraft.

From the long history of leaders drawn from the university's faculty to joint programs and appointments, JPL's intellectual environment and identity are profoundly shaped by its role as part of Caltech. While I worked at JPL, I worked with the unit tasked with mission design and navigation. This entailed planning voyages to other planetary bodies, the launch and orbital sequences, planetary exits, and entries, amongst many things. At the time, there was no template for this work. We were simply improvising as we went along. It was a time of extraordinary discovery.

An unmanned interplanetary mission has a lot of things to consider, and one of my roles was to simulate workable sequences that could help make such missions successful once they were launched in the real world. When I first began, I had no idea if our complicated plans would work.

This meant working with brilliant scientists, physicists, and mathematicians in order to establish the best trajectories to employ in order to achieve a successful launch, a successful

orbit, and a successful switch from heliocentric maneuver to a planetary orbit insertion.

It is important to note that at the time, we were the pioneers of innovative ideas. We had no proven knowledge to fall back on. So, we had to be extremely meticulous, highly optimistic, and very intelligent in our various approaches to the problems we needed to solve.

One of the critical components when it comes to space exploration is the concept of deep space navigation. This concept facilitates missions in the precision targeting of distant solar system bodies or specific locations of interest. For spacecraft operations and control, such navigation occurs in real time so there is no room for error. It is also used for the creation of higher-dependability reestablishments of a spacecraft's path for imminent sequence rectifications and for scientific and operational purposes.

Given that the Earth's orbital parameters and innate motions can be clearly identified, the measurements of the motion of a spacecraft, as visualized from Earth, can be changed into sun-centered orbital parameters. These conversions are required in order to define the spacecraft's trajectory. The evocative extents of the spacecraft's motion, which can be made from Earth, comprise the distance from Earth, module of its velocity that is straight toward or away from Earth, and its relative position in the Earth's firmament.

Working at JPL, I was greatly influenced by the serene academic environment that the school provided. My work experience there could not be compared to that of an entrepreneur because I had no reason to combat any form of stress at work.

Unlike if I had been an entrepreneur, I'm sure that I wouldn't have enjoyed the measures of expertise, professionalism, and interconnectivity between colleagues as I did back at JPL and for that, I am incredibly grateful.

One of the responsibilities I had when I was working at JPL was to help develop systems that would navigate satellites to reach other planets in an optimal way and be able to precisely insert the satellites into the desired planet's orbit. In the pages that follow, we will further explore the role of optical navigation systems in interplanetary navigation.



INTERPLANETARY NAVIGATION

When a spacecraft reaches a planet, there will be a transfer from a radiometric system to an image-based optical system to determine the accurate location of the probe and then calculate the insertion. To be able to do this, we used the optical navigation system, one of the concepts which I was privileged to pioneer. The movement of a satellite probe from Earth to another planet is mostly calculated to achieve a minimum amount of navigation error. This helps the probe reach its destination in the least amount of time. Usually, taking into account the distance of the destination planet with relation to the sun, the distance of the Earth to the sun and other relevant parameters, particular days are chosen for a possible launch. This will greatly reduce the amount of time needed for the probe to reach its destination and the number of errors in various calculations to achieve the same result.

The probe is timed as its course begins in Earth's orbit so it can escape the Earth's gravitational pull. Once the probe reaches space, another course correction is initiated for the probe to go into a heliocentric orbit, which means that the satellite moves around the sun rather than the Earth. As the probe is traveling in the heliocentric orbit, we can calculate its location by processing radiometric data, and if it appears to have deviated from the originally designed path, there can be slight course corrections. Once this is successfully achieved, the next objective would be to initiate another course correction for the probe to achieve the destination planet's orbit; this is essential for its insertion in the right direction, which consequently leads to the probe entering into the destination planet's orbit.

Such intricate calculations are done with the utmost attention to detail because if such course corrections aren't done properly, and the satellite probe fails to successfully make an insertion into the orbit of the destination planet, we would run the risk of losing the probe. To avoid such occurrences, we depend on radiometric data. This is a set of radio waves which provides ranges and measurements, and once processed, is used to pinpoint the position and navigation pathways of a satellite.

These radiometric data help resolve the angular measurements, which are comprised of right ascension and declination, all of which is geared towards getting the position location of the satellite. Like all calculations, angular measurements have some measure of error associated with them. However, the challenge with using radiometric data is that the margin of error increases as the satellite gets farther from the Earth. So, there is a tendency for a greater margin of error in calculating

the insertion maneuver of a probe sent to enter the planet Jupiter than there is in the calculations for the insertion maneuver of a probe sent to enter the planet Mars.

My involvement in these projects have given me immense fulfillment knowing it would (and it did) help improve the lives of future generations. After some significant success in my career as an engineer, my interest in medicine started to return when the opportunity presented itself. I'll tell you more about it.



ADMISSION TO POST PH.D. TWO- YEAR M.D. PROGRAM

Some years later in 1972, after I had finished my doctorate degree and was working at JPL, I came across an advertisement from the University of Miami stating that if a Ph.D. holder wanted to study medicine, he would not need to go to medical school for four years like other students studying basic science. Instead, they would simply go through clinical sciences and finish in approximately two years provided all requisite exams were to be taken and passed. There was a voice in the back of my head saying, "*this is the next logical step for you, Mohan.*" But I was not sure if I should listen.

Out of curiosity and based on the advertisement I saw, I applied to the University of Miami, without even telling my wife, thinking that I wouldn't be considered for admission. To my utter surprise, I was given admission to study medicine at the University of Miami. Despite this, I wasn't sure this was the right path for me, so I opened up to my wife to ask for her

opinion. She was very supportive and urged me to do what I thought was right.

My thoughts went in circles in my head. I had always looked forward to a second career this time in medicine. I even went as far as taking electives from the biological science department. Now, I stood at a crossroads.

“Is it worth it?” I thought. *“Will going through all the trouble at this crucial point of our lives be the wisest decision?”*

I reflected deeply about it. My wife had just given birth to our first son, and I had a lot of new responsibilities. I knew if I went away to Miami to study, we would have gotten by, but it would take an unnecessary toll on us as a family. As much as I wanted to explore this opportunity, I knew I had to sacrifice it for the sake of my family. I went through a few agonizing days, all in a bid to make the right decision. It wasn't easy at all, but I finally knew what I needed to do.

I thought to myself that the best choice was to stay home. This was a crossroads in my life I would never forget. In many ways, it has helped me realize that it is essential to have robust decision-making capabilities. Most of the time, it is critical to evaluate all aspects of the challenge and be decisive. I don't know what my life would have turned out to be if I had pursued medical science, but I'll never regret that I made a decisive choice about the matter.

That was how my desire to explore the field of biological sciences came to an end, but not without a twist. Many years later, I witnessed a heart surgery, an experience beyond my wildest imagination.



HEART SURGERY

I was already an entrepreneur when this exciting event happened in my life. A close friend of mine, Paul Ironside, was a vascular surgeon with whom I had worked over many years as one of his advisors in his business. He asked me whether I would like to accompany him to another hospital where he was going to perform a surgery not too far from where we lived. He used to go to that hospital to perform surgeries periodically and he always took his private twin-engine plane and flew to a small airport near that hospital. He was a good pilot. He kept his aircraft at the Van Nuys airport, the busiest airport for private plane traffic in the U.S.

Since I had some time that day, I thought we could discuss some of the matters we were working on at the time. We drove to the Van Nuys airport where his plane was parked. He told me that we could fly, and I asked him who was going to fly the plane. Paul said he was going to fly, and I said if he was going to fly, he could fly alone. He realized that I was serious, so we drove to the hospital instead.

Prior to going to the hospital, I did not know what kind of surgery he was going to do, even though I knew he was a vascular surgeon so it should involve blood vessels. We went inside the hospital and went straight to a doctor's office. I was introduced to another doctor who was a cardiac surgeon that I had heard about before. He is quite well known and highly respected and a very capable cardiac surgeon. However, I was meeting him for the first time. He did not expect me to be there, but when Paul introduced us, he had also heard about me and was extremely friendly and pleasant. He said that since

Paul brought me there, he would recommend that I participate in the surgery he was about to perform, as opposed to my original plan of staying outside to wait after the surgery. I knew that in operating rooms non-physicians are not allowed, and this would be against the general hospital protocol. But at the same time, how could I pass up this opportunity!

It was interesting to me because I had never been to an operating room, and I had never seen a surgery being performed, even through a window. My experience with surgery had only been from watching movies. I was so excited and asked whether I could come to the operating room. He admitted that there was such a protocol, but reassured me that I should not worry. I would be introduced as a doctor to everyone in the surgical suite. He was popular in the hospital, and everyone treated him like a god, so he could get anything accomplished.

He also said that he was going to introduce me as Dr. Ananda, a visiting professor of cardiac surgery from Mass General. He and Paul took me to the entrance area of the operating room where I had to scrub in before entering the surgical suite. We went into the operating room, and they introduced me to all the people there. There were a number of people in the room, and the patient was already on the operating table with his chest open for a four-vessel bypass surgery. An anesthesiologist was monitoring the patient's vital signs, and two surgeons were engaged in grafting veins from the legs for the bypass surgery. There were also four other surgical assistants who were all busy doing various things.

As I looked around the room, I noticed that the lights were nearly blinking as they bounced off the perfectly clean white

walls. In some ways, it reminded me of the pristine engineering labs at JPL.

As this was the first time I was ever in an operating room, I was overwhelmed seeing the serious activities everyone was engaged in. When I entered, all of them were surprised to see a stranger, but they knew Paul. The cardiac surgeon introduced me and said I would be watching the surgery. He also said that this surgery was particularly interesting because the patient had extremely narrow vessels. Bypass surgery with narrow vessels could be challenging. When the vessels become narrow, the surgical procedures, like sewing the vessels, would have to be done very carefully and would take more time than otherwise. The surgeon needs to be extremely competent in order to do such surgery, and this cardiac surgeon was well known for complicated micro-surgeries. This sounded quite dangerous to me, but I was thrilled to witness it!

There were two high stools on one side of the operating table where the patient was already under anesthesia and his chest open. The cardiac surgeon asked me to sit on one of the stools while he sat on the other. Paul was ready to help the surgeon from the other side of the operating table. Everyone except the cardiac surgeon and I were standing and working. The cardiac surgeon sat next to me, and he was wearing head gear which had a light and a magnifying glass through which he could see the narrow vessels. He said that he would be dictating as he performed the surgery, and this would become operating notes for patient records.

Even though I did not have any surgical experience, I have participated in human dissection when I took the anatomy class at Pasadena City College, as I have earlier shared with

you. Therefore, I was familiar with the anatomy aspects of the surgery. He told me that I could see the heart in the heart cavity, and it was pumping. The surgeon was going to lift the heart out of the cavity, and he wanted me to hold the pumping heart in my palm. He wanted me to show my palm and his hand went into the heart cavity. With his hand, he took the heart and placed it on my palm. The heart was as big as my palm, and it was beating. This was an amazing experience for me. I have seen a pumping heart only in videos, but now I was holding a human heart in my hand. Immediately, he told me that he was going to stop the heart from pumping, and at the same time he would place the patient on the heart lung machine so that the patient's heart functions are done by the machine. This procedure would help him to do the bypass surgery, and after the surgery was completed, he could take the patient off the heart lung machine and bring back the patient's own heartbeat.

As he was doing each function, he talked to me. This was the process he used for dictating the official recording of the various activities he was engaged in. I was holding the heart, and I wondered what would happen if the heart did not start beating again when the surgery was finished. This bothered me, but I did not have the strength to ask such a question. When I talked about this experience to a number of physicians I know, they were equally amazed because none of them ever had such an experience.

The heart was beating in my hand for a few minutes, and then an injection into the heart muscle made it stop. I must have been holding that heart in my hand for over three hours, and I watched the various repair functions which were being carried out meticulously. I could see the patience, sincerity,

concentration, the skill of perfection, and the great work ethic of my friend, the cardiac surgeon. As I was watching him work, I started to respect and admire him more and more. I could clearly say that only a few people in the world could have such incredible talents. My son Ajay is a neurosurgeon, and he does complicated microsurgeries in the brain. I have not personally seen him doing surgery, only in videos. He is certainly gifted, and I could compare him with the cardiac surgeon.

Once the heart was stopped, the cardiac surgeon asked me whether I could feel it beating anymore. I told him that there was no beating, and the heart was completely still. Then he started to make the repairs to the vessels by doing bypass repair work of each vessel one by one. He was doing everything methodically, and other surgeons were doing their part as well while monitoring the patient's vital signs. Periodically, the anesthesiologist would report the status of the patient. The patient was doing well because his heart functions and breathing were performed by the machine, and his vital signs were good. After he finished all the repairs and the bypass surgery was practically completed, he told me that he was going to remove the patient from the heart lung machine, and I would start to feel the heart pump again. He said that if the heart did not start to pump again, he had a major problem. I could feel my own heart start to beat faster after he said this.

I knew that my only contribution to this major surgery was holding the heart in my palm. But I had enjoyed this wonderful once in a lifetime experience to witness an amazing work performed by one the world's best surgeons. It was quite an exceptional experience that I do not think I can put into words exactly how it made me feel.

Suddenly, the heart started to beat, and I was ecstatic. I could see smiles on everybody's face. Initially, I could only feel the heart beating a little bit on my palm, but then it started to beat regularly. Once he verified that the heart was beating properly, he told me that he was going to take the heart from my palm and put it back in the heart cavity. He then said that it was all done, and I thought he was going to close the chest cavity. But he said that closing the chest was not his job, and another surgeon would do it and make all other arrangements to move the patient to the recovery room.

We stepped out of the operating room, and the cardiac surgeon thanked me for my excellent help. I just laughed and thanked him and Paul for the amazing experience. I told him that this all happened because of Paul, and I would always remember this wonderful opportunity to witness such marvelous work they all performed.



INVITATION TO GIVE A LECTURE AT ISRO, THUMBA

I was privileged to travel extensively during the time I was working at JPL. When the Jet Propulsion Center in La Cañada-Flintridge, California was established, it was initially set up to serve as an operational center, but it gradually changed into a major research facility. Once, I travelled to Paris for a conference where I was presenting a research paper. I was able to interact with several attendees from the large audience and one of them was an Indian man. He said he had an inkling that I was from the state of Kerala, so he approached me. I told him that he was correct. He was delighted to meet a fellow Indian

from Kerala and this fateful meeting led to something even more interesting.

He introduced himself as a Mr.M.R.Kurup.He was the managing director of the Thumba Equatorial Rocket Launching Station (TERLS) located in Thumba, Thiruvananthapuram which is near the southern tip of mainland India. The TERLS was an Indian space station, established in 1962 and operated by the Indian Space Research Organization (ISRO). The ISRO has many centers throughout India, and the Thumba facility was primarily interested in developing launch vehicles. However, they did not conduct any launches from Thumba. The launches were conducted from Sriharikota, in the state of Andhra Pradesh. This center is named Satish Dhawan Space Centre.

I was delighted to meet him and expressed that I had great respect for the first head of ISRO, Dr. Vikram Sarabhai, a well-known scientist in India at the time. The Equatorial Rocket Launching Station was renamed in honor of Dr. Vikram Sarabhai as Vikram Sarabhai Space Centre (VSSS).

The gentleman explained that the station, which he headed, was primarily focused on launch vehicle research works, similar to what NASA was doing at the time at the Marshall Space Flight Center (MSFC) in Huntsville, Alabama. We shared a few more moments together discussing the possibility of me going to India to present a paper at his center.

Before he left, we were able to choose a date which would be appropriate for such a visit to VSSS. After the conference, I came back to the U.S. and continued my work as usual.

Soon, it was time for me to visit India for a number of reasons, including attending the scheduled presentation at VSSS. I came to the facility at Thumba and was received well by my hosts. Arrangements had been made for the presentation to begin and everyone was enthusiastic. I had prepared myself for the paper presentation, but I must admit that I under-prepared because I thought that I would be speaking to about four to ten people. I did not yet realize how wrong my assumption was.

Upon reaching the venue, I realized that I had made a terrible assumption about the size of my audience. I had expected as many as ten people at most, but I saw a huge crowd, numbering almost a thousand. The entire hall was filled to capacity and overflowing. The seats were occupied by experts, from low-level to top-level management. I was completely surprised and not at all prepared for such an event.

I was introduced and took the stage to begin my presentation. I was fairly young at the time, but extremely confident. Still, my heart was beating terribly fast as I tried to mentally prepare for such a large audience. I told the audience about a lot of effort being made by scientists around the world in the area of space research, inter-planetary navigation, and systems analysis. I shared with them some new concepts being explored, including my latest invention at the time: the optical navigation system. Even though I wasn't specialized in the area of launch vehicle research, I was able to feed their hunger for learning in many other areas.

After the presentation, I was met and congratulated by the host. From the top-level management officials to other workers, I remember being introduced to a brilliant rocket

scientist, Dr. Abdul Kalam, who was working at VSSS for Mr. Kurup. We interacted on many levels, and I never forgot how kind and intelligent he was. Abdul Kalam later went into politics and became the President of India from 2002 to 2007. He was probably one of the most liked and respected of all the Presidents of India. I always cherish the memory of meeting with him. Unfortunately, I did not have an opportunity to meet him when he was the President of India or afterwards.



BECOMING A U.S. CITIZEN

In 1973, I became eligible to become a citizen of the United States. I never saw it as something I needed to accomplish, as I had always maintained powerful ties with my Indian roots. Becoming a U.S. citizen for me was a privilege, not an escape route as it was for many people. I loved India and I visited it frequently doing charity work, raising capital for businesses, and the likes. So, becoming a citizen for me was not a question of abandoning my heritage.

I do admit though that I did find myself a little conflicted about being a U.S. citizen. First, it did feel like I was abandoning my country of origin and choosing to call America home for the rest of my life. The United States offered a lot of opportunities to me that India couldn't, and I wasn't ignoring that fact. But home is always home. My parents and relatives were still back in India, and they needed to know that I would never abandon them.

Another struggle I went through was the fact that my initial intention of coming to the United States was solely for higher

education. Now, I had acquired everything I had come for, and so much more. Wasn't it time for me and my family to head back home? Doesn't India need me now more than ever to help build it? There were many times that these thoughts kept me awake all night. It was indeed a battle for me. I went back and forth many times as I weighed all of the different factors. It was a time of great internal turmoil, but eventually the answer would become apparent.

I tried to justify how I felt by concentrating my thoughts on the sacrifices I had made for the United States that had given me so much in return. I recalled my decision to serve in combat, even when my friends had every reason to leave. If I laid down my life for the United States, wasn't that payment enough? I recalled all my contributions to its military, space programs, and science. Surely, it could do without me.

And so, I allowed my mind to wander until I acknowledged the truth: the United States had been and would continue to be my home. As much as India had created me, America had nurtured me. Becoming a citizen was another way of giving back to the U.S., while still having the opportunity to give to India where and when I could. So, after a discussion with my wife, I decided to apply for citizenship.

As I filled out the forms and went through the process, I saw that it was all exciting and straightforward. It reminded me of why I considered being a citizen in the first place: efficiency, loyalty, and pride. Ever since I became a citizen, I haven't had a single regret over my decision. My family could now enjoy the many privileges that I couldn't when I first came; for that, I'm thankful.

The idea of a United States passport had a nice ring to it, and it came with a sense of satisfaction. I didn't dare challenge any of those feelings. After all, it is one of the most powerful passports one can possess. Now, because of my travels, I was gradually transformed from being an immigrant to an American.



DEVELOPING THE GPS NAVIGATION AND SHAPING ITS SURVIVABILITY

Starting in the late seventies, I had the privilege of joining a team in the United States Department of Defense, whose purpose was to develop a state-of-the-art navigation system.

The initial idea was to set up a framework that would serve as a navigational support for the military. At the time, the cost was pinned at \$12 million dollars. We spent long hours working under top secret conditions. It was an exhilarating opportunity – we had at our disposal the latest in cutting-edge computers (though they would look archaic today), the brightest minds in our field, and the full support of the United States military.

We set to work. Between 1978 and 1985, we successfully launched about ten trial satellites. This alone felt good, but as computer processing speeds quickened, so did our work. From 1989 to 1994, we launched twenty-four more satellites into orbit. The program we created was originally called NAVSTAR, or the Navigation Satellite Timing and Ranging System. The first prototype spacecraft was launched in 1978, and the full constellation of 24 satellites later became operational in 1993.

Before an executive order was given by the then president, Ronald Reagan, in the 1980s, the GPS was exclusively used by the United States military and therefore owned by the government of the United States. To be more specific, this satellite-based radio navigation system is being controlled by the United States Air Force under Space Command.

Since it became available in the public domain, it started to become known as the Global Positioning System or GPS. It makes geolocation and time data available to a GPS receiver anywhere on or close to the Earth, provided there is an unobstructed line of sight to about four or more GPS satellites. It does not require user-based transmission of information, and it functions autonomously from any telephonic reception, even though technologies like the internet can augment the efficacy of the GPS positioning information. The project was a huge success and became available to every individual through their smartphones.

It's hard to express the many benefits of this breakthrough technology called the GPS, but I'm sure its value is well known to many people today. In the seafaring world, GPS offers the fastest and most accurate system for navigation, speed measurements, and location determination. This accounts for a lot in terms of safety and productivity when traveling by sea. In certain zones such as harbors, substantial vessel traffic, and other shipping canals, risks make maneuvering very problematic, especially when weather conditions deteriorate. While at sea, exact positioning, rapidity, and course path are required to make sure that a vessel gets to its last stop in the swiftest, safest way possible. GPS navigation makes each of these situations far safer.

What began as a military experiment, now plays a central role in our daily lives. Thanks to this one-of-a-kind tool, we can now adequately respond to otherwise burning questions.



HIGH LEVEL OF SECURITY CLEARANCES

When I worked with the defense department, I had the privilege of working with a lot of highly placed defense officials in various departments. At the time, I was largely involved with the development and survivability of the GPS, which was primarily designed to improve precision in the areas of force effectiveness. Unlike today, where the GPS is accessible in our phones and cars, the goal then was to design a robust weapons delivery system with extremely high levels of accuracy. This implied that I had to have a lot of involvement with highly sensitive data and information relating to national security and interface with other existing defense systems implementer-departments. This also meant that I had to receive security clearances on many levels in order to have full access to these data, tools, and personnel with which I worked.

In order to maintain the integrity of the defense department, there were a bunch of modalities carefully crafted to keep every employee in check. One of these was briefing sessions carried out before and after every travel engagement. My job also entailed a lot of traveling, either for official interfacing with other security departments in and around or outside the U.S., or for speaking engagements and paper presentations at conferences and seminars. So, before I was cleared to travel, I was required to have a debriefing (pre-travel) session with staff at the defense department. These briefings were typically

done in person, were simple and straightforward, and weren't particularly interesting, at least not for me. I simply went in, answered a few questions, and left. Once I returned from the trip, I had to be debriefed (post-travel) again.

One incident comes to mind that pointed out to me how strict and cautious the defense department was with their staff, especially with those who have high level clearances. I was scheduled to travel to Tokyo, Japan for a paper presentation, and I was all set to go. As usual, I went in for my pre-travel debriefing, after which I headed for Tokyo. Even though I was working on defense projects, we could present papers at international conferences on research materials which are not classified. Obviously, we had to get permission from the appropriate personnel to review our material to make sure our presentation did not reveal any classified materials. After I arrived in Tokyo and presented my paper to a conference room packed with people, I was applauded as I went back to my seat. After the conference, I was met by a number of people who wanted to commend me on the paper I had presented. Little did I know that I was about to be involved in some sort of international intrigue.

I remember meeting a Russian man who introduced himself as a professor back in his home country. He expressed how thrilled he was with my presentation and extended an invitation for me to come and do a presentation in Moscow. He was in the company of a few other folks whom I had little or no interactions with other than just exchanging pleasantries. I told the professor that I would be honored to go to Moscow and present a paper. After the conference, I traveled back to the U.S. and immediately went in for my post-travel debriefing.

This debriefing was nothing out of the ordinary, but later, while I was going over the events that occurred on the day of the conference, my interviewer said, *“While you interacted with the Russian professor, did you remember seeing a man with a white suit, blonde hair, about 5’7?”* he asked.

I thought for a moment, then replied, *“Not particularly, no,”* I said, *“I did interact with a lot of people, so I can’t readily place all their faces,”* I added.

My interviewer insisted that I try to recall. I was becoming suspicious that they knew something that I did not. Why were they so interested in this mysterious man? So, I put some thought into it, and then it occurred to me that I indeed did see a man that fit the description. He was in the company of the professor, and though we never directly interacted, I recalled that he had a pleasant smile.

“Well, now that you mentioned it, I do recall seeing him with the professor,” I said, *“but we didn’t interact at all, of that I’m sure,”* I added.

“We know you didn’t,” he said, *“just wanted to challenge your memory. You may continue,”* he added.

I was taken aback by his comments. How did he know about this man whom I hardly remembered, and who I didn’t even communicate with? I had to inquire further, *“Pardon me, but who is this man and how come you know that I never interacted with him?”* I asked. My interviewer paused for a moment, dropped his pen, and looked me straight in the eye. *“That man is an active agent working with the Russian Intelligence agency, the KGB,”* he said, *“and we know whether or not you interacted with*

him because you, like every other person whom we have given access to high level security clearances, are under our watch,” he added.

Upon hearing this, I was astonished. I knew the various obstacles I had to overcome in order to get security clearances from the defense department, and I also knew that the U.S. took the issue of security very seriously. But that day I realized that they did quite a bit more to protect their assets, whether it was human or material.



LAW SCHOOL

While my wife dedicated her time to getting her neurological practice up and running, there was a need for me to step in and help out with our home. Our two boys were still young and required close supervision. We had a lot going on at the time and we couldn't really afford a nanny.

I then decided that I could try to help out as much as I could, and it turned out to be all right. So, as my wife dedicated her attention to building her career, I covered for her on the home front. I never felt bad for doing this because my wife had always supported me as I built my career. During my years of working long hours and traveling, times when I wasn't around much, she covered for me and did a wonderful job. I also saw this as an opportunity to get much closer to my kids and get to know them better.

As I spent more time helping out at home, I began to ponder the idea of having a career change. I considered the fact

that my job at the time was extraordinarily demanding and involved a lot of traveling, which took a toll on my family life. But in which direction should I go, I thought. The change seemed daunting.

My time spent with my kids and taking care of the home while my wife established her career afforded me an opportunity to see how distant I had become from my family. I knew that if I continued not being present when my family needed me, it would result in catastrophe in the future. So, my mind began to explore the possibilities of venturing into another career, which could afford me more time with my family.

One night, as I settled onto a sofa in our cozy living room and watched a few television shows, I came across an ad about admission to a law school which offered evening classes. It wasn't long before my curiosity took complete control over my rational mind. I began to think about the idea of law school constantly. I was definitely considering law as a second career. One of my biggest motivations to take that path was my time working for Robert F. Kennedy, who was a prolific attorney and a principled leader. I also took note of the fact that the people who were at the frontline of American politics were mostly lawyers, people who knew how to interpret the law that they had sworn to serve. This much inspired me to choose law as a second profession. Moreover, I always thought if you cannot fight them, it is better to join them.

After discussing the idea with my wife, I took the steps to gain admission. I went to law school at the university and applied. I was then given provisional admission to study law under a part-time arrangement. The degree could be acquired in four

years and classes were to be held only at night and on the weekends.

I was happy with the arrangement as I knew that I could then work and help out with the home, while my wife would be around on the weekends. I thought it would all work out in the end. What I did not realize at the time was how complicated things would become.

I studied law part-time for the next four years, and those years turned out to be really exciting. The school I attended boasted that they had produced some of the most excellent lawyers in the state, and we were witnesses to such brilliance. I must say our classes were mostly fascinating and full of life. Most of my fellow students were all career workers and people with busy lives, so it was easy to relate and connect with them.

As I gave myself wholly to family, work commitments, and study, things did not turn out as I initially had anticipated. In fact, the challenges continued to increase. Juggling my time between all the things which I considered important was no easy task at all.

At the time, my wife had a huge workload, and we struggled to make sure we were able to do everything the family needed, but my job also placed increased demands on my time. They required me to handle tasks outside California, and sometimes, outside the United States. My law school commitments also took a toll on me because there were always more classes and assignments to handle. I felt as though I was always treading water, trying to catch my breath.

It wasn't long before I had to learn to effectively manage my time. Otherwise, I would have broken under the sheer stress of it all. Each moment of the day became precious. I came up with a schedule and adhered to it strictly. Any lapse was quickly compensated with alternative measures. As difficult as this period was, I learned a lot of valuable lessons about time management that have served me well in other parts of my life. Our lives are precious, and that means our time is precious. If we are to live fully, we must be conscious of how we spend our time.

PART III



PRIVATE LEGAL PRACTICE AND BUSINESS VENTURES

In this section, I will talk about my transition from being an employee to an employer. In Part 1, I have shared the strong influence my parents have had on me and how they have helped shape my outlook in life. In a fast-changing world, it is a significant challenge to stick to what our loving parents taught us about the world. I have faced many crossroads where I was torn between sticking to what I know versus discovering what else is out there. I have always been slow to change and adapt. My inquisitive mind kept tempting me to stay in or return to the path I'm used to before switching to another. It was more convenient for me to follow in the footsteps of my parents rather than suddenly change for the fun of it.

Living far away from the country of my birth, I have developed the courage to take some risks and venture the unknown. Transitioning from being an employee to an employer seemed to be the natural direction to take after working with some of America's greatest institutions. I took my career in law on my own by starting a law firm. This decision proved to be very useful when I became an entrepreneur. Around 1988, I started becoming involved with a number of companies to raise capital, provide intellectual support, and ensure that they meet all the legal requirements to proceed. I had some experience in helping companies start from scratch. Usually, the job involved determining where the loopholes are and coming up with effective solutions to set or scale the company up for growth.

Startups typically struggle for capital. The most frustrating part is having a great idea for an innovative product or service but not having the sufficient funds to start a company. It is crucial to have a steady cash-flow system in order to effectively support the venture before it begins to generate sufficient revenue and sustain itself. At other times, the problem wasn't the need for capital but having no access to facilities and resources that would help develop those great ideas. None of these challenges stopped me from pursuing those ideas, and with such relentless spirit that I developed from building my life as an immigrant in America, I, and with the help of some amazing individuals, gave birth to several successful business ventures.

“We can’t work with you, Mohan.”

I gave my pitch for 10 minutes but within two seconds flat, my hopes of working with a tech giant like Microsoft was shut down. That’s not what I was hoping to hear. He thought my idea was great but confidently claimed that his team could come up with something better than my product. He was in no way rude about it, but he made it clear that they had all the ideas and manpower they needed. I left his office with the weight of disappointment weighing on me. The refreshing breeze outside the building somehow made me feel reassured that I was maybe looking for opportunities in the wrong place...



BIRTH OF LAW PRACTICE

After obtaining my law degree and license to practice in the state of California, I began to pursue opening my own law firm. I partnered with my friend, Steve Krause, whom I met at law school, and we decided to open our own firm called Ananda & Krause.

As time went by, we were involved in providing legal services for startup companies, business consulting, corporate law to small and medium companies. We also did other work like taking businesses public, raising capital, intellectual property work, reviewing trademarks, copyrights, and other related services. Even though our clients were mostly business and technology related, we also ventured into some immigration work as well. Because I had clients from India, I became involved in services such as applying for visas, work permits, employment-related work for migrants, and so on.

On one occasion, I was on vacation and my partner was visited by a woman who was seeking a lawyer to help her handle her immigration problem. This woman was a mother and a daughter who unfortunately got mixed up with narcotics, which led to her incarceration for about five years. As soon as she had finished serving her time and was released, she was met with another problem: she was approached by immigration officials who told her that she had been scheduled for deportation from the U.S. back to Canada. This came as a surprise to her as she had thought she had been born in the U.S. from parents who had migrated from Canada. She grew up, got married, and had kids all in the U.S., but she didn't know that she wasn't an American citizen.

My partner informed the woman that we would represent her and that she had nothing to worry about. But unbeknownst to us, this woman had gone to over a dozen other law firms in search of a lawyer who would defend her in court, and she had been turned down simply because it was an open and shut case. Most lawyers knew that she had no chance of winning, so they refused to take her case. As soon as I returned, she came to the office to see me. After she explained her story and gave me all the information I needed, I looked at the case and realized that it was a very difficult case to win, and we did not have enough time to prepare for such a case. She had been given a week to appear in court, and I knew that was too little time to do my research and come up with a meaningful defense.

I admitted to her that immigration law wasn't my specialty, but I would see what could be done. I encouraged her not to worry, but also not to be too optimistic as the case looked pretty difficult. She was grateful all the same, knowing very well that just getting representation was a huge step for her. I approached the court and asked for more time.

"Well, how much more time do you need?" the judge asked me.

"Your honor, I would like an extension of about three weeks," I said as I smiled with optimism.

The judge didn't agree at all, *"Three weeks is a bit of a stretch, counsel,"* he said. He then inquired from the federal prosecutor who was largely relaxed knowing very well that the case was open and shut. *"What amount of time does the prosecution suggest?"* the judge asked.

“Your honor, I think a one-week extension would be just fine,” the prosecuting lawyer said. The judge immediately ruled that an extension of one week was granted to us.

I stepped out of the court knowing a week was all I had to do my research and come up with a defense. So, I went straight to work. As I studied, I noticed from judgments handed down by appellate courts that the judgment of deportations, by law, weren’t at all mandatory. There were discretionary powers which could be exercised by the judge if he chose to do so. By implication, once the defendant had been found guilty, it was within the judge’s discretion to deport her or issue any alternative judgments which he deemed right or appropriate. Once I noticed this, and going by how bad the situation was, I knew I had to explore this option because it seemed like it was most likely her only chance. If I failed, she would surely be deported.

I proceeded to call my client to the office and gave her a few instructions.

“First, can you get your mother and all three kids in court with you on Monday?” I asked her.

“Well, my kids are here with me in California, and they will gladly come,” she said. *“My mother, however, lives in Florida,”* she added. *“If you think her presence would make any difference, then fine, I can fly her in,”* she said with a puzzled look on her face.

“Believe me, it will. Go ahead and bring her in,” I instructed. *“Make sure you are all here, well dressed, and calm.”*

I explained to her that it was important that their physical appearance is decent as she was already at a significant disadvantage. The judge would be more inclined to be biased against her, seeing that she had previously been convicted for dealing narcotics.

“When you are cross-examined, keep your answers minimal. Simply say ‘yes’ or ‘no’ as the need arises. Don’t be tempted to expand on anything,” I said to my client. She listened carefully and promised to do exactly as I told her.

On the day of the hearing, we all showed up in court. My client, together with her three children and mother who she flew in from Florida were all present, and as modestly dressed as they could be. The prosecutor came and greeted me warmly. He obviously didn’t prepare much as he knew the case was clearly going his way. Soon, the court was in session. The courtroom was bright with a high ceiling and dark wood paneling behind the bench. The judge sat high above us, looking down from his seat.

I called up my client for examination. We went around getting to know her, her mother coming from a distance for the hearing, and her kids.

“When did you first come to the U.S.?” I asked.

“Back when I was two. I came with my parents,” she answered.

“And have you ever been to Canada since then?” I asked her.

“No, absolutely not,” she responded.

From my line of questioning, I was able to help the court see that my client hadn't been to Canada in the last fifty years, and unlike in the U.S., she had no relations or any connections to anybody in Canada. My aim was to make the judge see that deportation wasn't the best option for her.

After my cross-examination, the judge asked the prosecution if they had any questions for my client, and he said he didn't. I think he was so confident of a victory, he didn't want to drag the case out any further. So, my client stepped down.

"Your Honor, I do have some information which I'd like for the court to review," I said.

This caught the attention of the judge and the prosecution. Suddenly, it looked like the prosecutor wasn't as confident about his victory.

"I realize that many may think this ought to end in deportation in accordance with U.S. immigration laws," I said.

"That is usually the case," the judge said. *"Isn't that right, counsel?"* the judge asked the prosecution.

"Yes, your honor. Matters such as this end up in deportation," the prosecution affirmed.

Then I drew their attention to a number of cases that point out that such cases aren't tied to mandatory deportation, but to the utmost discretion of the judge. The judge was startled as he hadn't expected that a twist could come from this case. He asked the U.S. attorney if that was the case, of which he responded in the negative. I then gave both the judge and

the prosecution copies of two cases in which the judge's discretions were expressly utilized.

This brought some confusion into the court for a moment. The judge then asked if the prosecution had any comments on the matter so far.

“Your Honor, whether or not you have discretionary powers over this judgment is neither here nor there. It is important, however, to remember that this woman is not a citizen of this country, she has committed heinous crimes while living here, and should be deported immediately,” he said vehemently.

As a response to the prosecutor, and in a bid to persuade the judge to decide in favor of my client, I said, *“Your honor, I speak of your discretion because there are a few facts to consider. She has no family in Canada. They all live here and are citizens. She did break a few rules, but she did her time. I believe she has long been rehabilitated. I don't see why a discretionary judgment wouldn't help her reunite with her family and lead a better life. Moreover, her mother is over eighty years old. She periodically visits her mother. If she is deported to Canada, it would be almost impossible for her to see her mother at this old age.”*

The judge looked at me, then at the prosecution. He then adjusted his glasses and reviewed the papers before him. My heart raced as the judge considered my argument. In what would appear to be a miraculous twist of fate, the judge ruled in favor of my client. We were all glad. All, except for the prosecution.

As soon as we came out of court, I told her to go straight to the immigration office and get all her papers and apply for

U.S. citizenship. The entire family was elated and thanked me profusely. I went home and took time to bask in the feeling of victory.

Three months later, I learned that the loss of that case led to the amendment of the immigration law which expressly removed discretionary powers from the judge. This news hit me hard because I felt as though I had unwittingly played a part in closing a loophole that could end up helping other people like my client.



AMAZING RELATIONSHIP WITH VAN PATTEN

One memorable experience I had working as a lawyer was my involvement with a case that had to do with check kiting. A dear friend of mine, Van Patten, a well-known U.S. lawyer at the time and a graduate of Stanford Law, drafted me onto a legal team which was employed by the Federal Deposit Insurance Corporation (FDIC).

The FDIC is a large governmental entity that insures a lot of financial institutions. In the event a bank goes into financial distress and goes bankrupt, the FDIC is responsible for reimbursing account holders of that bank up to \$250,000 from the insurance proceeds.

A bank in Las Vegas had lost quite a large amount of money due to a form of bank fraud called check kiting. This was a systematic floating of checks from a customer with multiple bank accounts in many different banks. The customer wrote checks from one of his accounts to an account in another bank.

He did this over and over, and since clearing checks was not particularly fast back then, the customer ended up having large amounts of money in his accounts.

Now, the bank in Las Vegas that had been hit hard was Mineral Bank. This bank was a regional bank, and they had a number of branches in a few states. They discovered that a certain man, Augusta, who was a highly connected man with the Las Vegas mafia, was responsible for the fraud. The bank had been hit so hard that they lost about \$30,000,000.

Upon discovering that Mineral Bank could no longer stay afloat as a financial institution, the FDIC took the reins in accordance with federal laws. I was part of the legal team that was tasked with suing the Augusta family and recouping the stolen funds.

The case was filed in Los Angeles, but we needed to go to Las Vegas a number of times in order to take depositions from relevant people involved in the case. The Augusta family, however, hired a prominent law firm to defend them.

I remember my travels to Las Vegas as the case went on. Knowing what Vegas is popular for, it's interesting to have a vastly different reason for going there.

The interesting thing about this case, for me, was the fact that even though we were dealing with very dangerous people, I had no bodyguard at all. I had no gambling problems, so I didn't find going to the casino challenging either. I simply gave my best and got everything I needed. This experience deepened my law practice and set me on the path to achieving even greater things.

The case dragged on for quite a while, but like everything, it had to come to an end. The end of this case, however, didn't favor the Augusta family. They lost, and the FDIC was able to recover a significant portion of the stolen funds.



CASE AGAINST GE AND JOHNSON & JOHNSON

In the mid-eighties, I had the privilege of representing a medical diagnostic firm called Medical Diagnostics Imaging (MDI). I provided legal services to them on a number of issues ranging from procurement, contracts, and the like. I clearly remember one incident that happened in 1986.

This company, though small, was providing a great service in the healthcare space by providing diagnostic tests to patients with advanced technology equipment. Their diagnostic center had various kinds of diagnostic equipment such as CT scans, MRI, ultrasound machines, and such other equipment.

That year, MDI purchased an MRI machine from a company called Technicare for a couple of million dollars, and Technicare was a subsidiary of Johnson & Johnson. The MRI machine was a Tesla 0.6 model, which was the state-of-the-art MRI machine at the time. The machine was delivered with various conditions. One of which was that Technicare would offer maintenance services for the newly installed, highly sophisticated machine on a continuing basis.

As time went on, the parent company, Johnson & Johnson, for reasons only known to them, decided to sell Technicare to General Electric (GE) who also made MRI machines that

competed with Technicare. As soon as Technicare successfully merged with them, GE decided to stop all MRI productions from Technicare and halt all maintenance commitments to Technicare customers. This meant that customers who had Technicare manufactured machines had no way of servicing them. This is obviously a problem when you've already bought such an expensive piece of equipment. I realized we had no choice but to take on Johnson & Johnson, but they were such a large company. How could we possibly compete?

GE then approached MDI saying they had a more sophisticated MRI machine for sale: a Tesla 1.5 model. They assured my client that this was far better because it had better features and was much faster. Their condition, however, was that MDI must pay an additional 1.5 million.

This was unacceptable to my clients as they didn't have that kind of money lying around. Additionally, their machine was not getting the necessary service required, and that was costing them customers every day. So, they gave me a call and asked what they should do. I took some time to go through the purchase agreement and noticed some key areas in which the seller was in breach of contract.

I advised my client to write a letter to both Johnson & Johnson and GE, very clearly, that we were going to sue them if they didn't honor their part of the purchase agreement. In addition, I advised that the letters should categorically state that we would also be suing for punitive damages. My clients agreed and directed that I draft and serve the letters to both GE and Johnson & Johnson.

Johnson & Johnson and GE were household names, and they were very big companies who could threaten anyone, let alone a small medical diagnostic firm. As expected, both companies replied with even more serious threats to counter sue. They stated that they weren't in the wrong and wouldn't tolerate any form of damage to their brand names.

After receiving the letters, I advised my clients to sue both companies. First, sue Johnson & Johnson because they were the signatories to the purchase agreement. Then, sue GE because they are now responsible for Technicare's commitments. We went ahead and sued both companies. At first, they probably didn't think we would go through with it. But they were surprised when we did.

As the days went by, Johnson & Johnson and GE saw that we weren't backing down. They knew that if we succeeded in making a lot of noise, it would affect their customer base and even prompt other firms to sue along the same lines. This propelled them to ask for an out-of-court settlement. When we sat down with the companies, they agreed to give my client an MRI Tesla 1.5 without any additional fee.

This was a delightful win for me and my clients, and it did point out to me that once a system is well structured, it doesn't matter how big the challenge is, justice will always prevail. Unfortunately, other countries such as India, where the justice system is riddled with corruption can't get such levels of justice. This, to me, is sad.



ESTATE PLANNING

In my law practice, I have had the privilege of meeting several highly successful business personnel, and during the process they became interested in the area of estate planning. Even though my specialty was not in the areas of wills and trusts, some of my clients had sought advice from me in helping them to transfer their wealth. I was also interested in the subject because of my personal interest. I did considerable research in the subject matter and became reasonably proficient and even gave a few lectures in this area to both law students and MBA students in some of the nearby universities as a visiting faculty member.

I would like to give a brief summary here and recommend strongly to seek professional help to make sure everything is done properly and legally. Estate planning has to be done in compliance with laws and regulations. Moreover, it has significant tax implications, and proper planning can help to reduce the tax impact.

Estate planning is necessary for most people, but more so for wealthy people. Here, in the U.S. a small number of people have enormous wealth while most people have far smaller wealth. A review of wealth distribution in the U.S. is interesting and very informative. Forbes magazine publishes the wealthiest 400 people in the U.S. every year. Net worth is the value of all the non-financial and financial assets owned by an individual minus the value of all their outstanding liabilities. Let's look at the illustration below to better understand wealth distribution in the United States:

American Citizens (by population)	Net Worth (in USD)
600	\$1B and above
2,000	\$500M – \$1B
3,000	\$250M – \$500M
14,000	\$100M – \$250M
40,000	\$50M – \$100M
70,000	\$30M – \$50M
1.3M	\$10M – \$30M

There are about 1,440,000 people or families who have a net worth over \$10 million compared to the total number of families in the U.S. which is about 120 million. In the U.S., a person is considered wealthy if they have a net worth over \$10 million and ultra-wealthy if they have a net worth over \$30 million.

It is true that only a small percentage of the population in the U.S. is considered wealthy, but most families need to address estate planning issues to avoid many pitfalls in making sure that the assets are transferred properly from one generation to the next. The wealthy have to be extra vigilant.

Generally, it is highly recommended to have two instruments, a will and a revocable trust also known as a living trust, properly prepared and executed for everyone. A will is a legal document that sets forth one's wishes regarding the distribution of the person's property and the care of any minor children. If one dies without a will, those wishes may not be carried out. Further, the person's heirs may be forced to spend additional time, money, and emotional energy to settle the person's affairs after the person has died. A revocable trust

or living trust is a legal document or trust created during an individual's lifetime where a designated person, the trustee, is given responsibility for managing that individual's assets for the eventual beneficiary. A living trust is designed to allow for the easy transfer of the trust creator or settlor's assets, while bypassing the complex and expensive legal process of probate. Living trust agreements designate a trustee who holds legal possession of assets and property that flow into the trust.

I would recommend transferring all personal assets such as jewelry, and any other personal possessions through the will, and all other assets such as real properties, financial assets, and other assets such as retirement accounts and any proceeds from life insurance policies through the living trust. This will eliminate or reduce the cost and time delay due to the probate process.

People who have larger estates should look into protecting their estate from other types of attacks that may be charged against the estate. There are potentially three types of threats. First and foremost is the possibility of estate tax, and it could be significant if the estate is large. The second is the possibility of third-party creditors due to legal judgements, who can make claims on the estate assets. The third possibility is that, once the estate assets are officially given to the beneficiary, if there is a divorce, the beneficiary could be subject to potential claim in their divorce litigation.

There are ways to eliminate or reduce such claims if the estate planning is done properly. Most wealthy people seek professional help from experts and plan to avoid all of these attacks. I will be addressing the **three possible attacks**, but your experience will be determined by your individual situation.

First is the estate tax. Most States in the U.S. do not have any form of state estate tax. Here in California, we do not have a state estate tax, however there are discussions going on between legislators to create one. The difference between estate tax and inheritance tax is that estate tax is paid by the estate before any distribution to the beneficiaries are made, whereas inheritance tax is paid by the beneficiary when the inheritance is received. For example, while New York doesn't charge an inheritance tax, it does have an estate tax. The state has set a \$5.25 million estate tax exemption, meaning if the decedent's estate exceeds that amount, the estate is required to file a New York estate tax return. The state government requires that these be filed within nine months of death, though extensions are available. The highest tax rate one could possibly receive in New York is 16%. This is in addition to the federal estate tax. As of 2020, Washington, Oregon, Minnesota, Illinois, Maryland, Vermont, Connecticut, New York, Rhode Island, Massachusetts, Maine, Hawaii, and Washington, D.C. all levy state estate taxes. That means that the estates of people who live in these states may face estate taxes at both the federal and state level.

The estate tax is just what it sounds like: a tax that the government levies on estates when one passes away and passes on their assets to heirs. If the estate has a high enough value after the person passes away, the person has to pay estate taxes on anything the person is looking to bequeath. This could include cash, real estate, retirement accounts, or a range of other assets. In 2020, the threshold for federal estate taxes is \$11.58 million, which is up slightly from the 2019 limit of \$11.4 million. For married couples, this threshold is doubled, meaning they can protect up to \$23.16 million for 2020. The federal estate tax rate is 40% if the taxable amount

is more than \$1 million. However, this increase in the estate tax exemption is set to expire at the end of 2025, meaning the exemption will likely drop back to what it was prior to 2018. In 2018, the estate and gift tax exemption was \$5.6 million per individual, and therefore, if the laws are not changed, the exemption for a married couple will revert back to \$11.2 million beginning in 2026.

I recommend that everyone do some early planning to avoid or minimize estate tax, especially those who do not currently have a large estate. There is always the possibility that the estate will become larger, and the estate tax laws could change to the detriment of the estate holder. There are many ways to accomplish this, and experts can advise appropriately under your particular circumstances. Any asset which has a potential to grow its value over time should be gifted to potential beneficiaries as early as possible so that its increased value is removed from the potential taxable estate. For example, if one makes an investment in a startup business that has growth opportunities, this investment could be a candidate for gifting to beneficiaries. Income producing real estate holdings could be another candidate for early gifting. When the loans on the properties are paid, the full value of the properties will be not included in the taxable estate.

I would also recommend forming an irrevocable insurance trust if one plans to buy a life insurance policy. If the trust is not done properly, all of the proceeds will be included in the taxable estate. The irrevocable insurance trust document will identify the beneficiaries of the life insurance proceeds.

There are also yearly gifts that can be made to beneficiaries without affecting the gift tax. For retirement funds, there are

possibilities of double taxation. First, it could be subject to estate tax if the total assets in the estate exceed the minimum for estate taxes. The beneficiary of the retirements funds is also required to pay tax on the funds at the highest tax rate of the beneficiary, and the retirements funds have to be withdrawn within ten years of the transfer. For example, the estate tax could be as high as 40%, and the beneficiary's highest tax rate could be as high as 50% for both federal and state taxes. Therefore, the effective tax rate for the retirement funds could be as high as 70%. Because of the high tax rate, many people can contribute retirement funds to charitable organizations or to their own private foundations to avoid paying high taxes to the government.

The second reason for careful estate planning is to **protect the assets from potential creditors** due to judgments caused by some errors and omissions. I generally recommend to my clients to have some form of errors and omission insurance coverage if they have a business to protect from liabilities for activities knowingly or due to some unknown reasons that could cause damages to others. Similarly, I always advise my friends and clients to have sufficient umbrella insurance coverage for protection from potential claims due to damage caused by unknown events. A few of my clients had to file for bankruptcy protection because of large judgements against them and their insurance policies did not have adequate liability coverage. They also did not have any umbrella policy coverage.

If the estate assets are directly transferred to the beneficiaries, then they could become the assets of the beneficiary. If a claim is made by a third party for any reason and a judgment is obtained against the beneficiary, the assets could be used to satisfy judgments. However, if estate assets are not directly

passed to the beneficiaries and are transferred to an irrevocable trust, and the trust is managed by a trustee, the assets could not be used to satisfy any claims against beneficiaries by any third-party creditors. Most people of reasonable wealth create an irrevocable trust to protect their assets from claims or judgements. I would strongly recommend getting advice from experts and planning as early as possible. I also recommend that the selection of the location of the irrevocable trust be formed in a state like Nevada instead of California so that any income generated by the trust is not subject to the state income tax.

The third reason for careful estate planning is to protect the estate assets when distributed to the beneficiaries to **keep them away from the community property of the beneficiaries.** If this is done, assets are not included in the assets of the beneficiaries in the event of any legal action for divorce. This can be achieved by transferring the assets to an irrevocable trust managed by a trustee. Any distribution of the income from the assets to the beneficiaries is done by the trustee as per the specific instruction of the trust document. In many cases, I have seen and heard from my clients that their marriages lasted longer because estate assets were transferred by their parents to irrevocable trusts rather than directly to them.

Estate planning is also useful when planning for the unknown, such as in the event that you become incapacitated. A living will is a legal document, also known as an advance health care directive. It details how one wants to be cared for if something unexpectedly impacts the person's health and the person winds up on life support. A living will also forces one to answer those unthinkable questions, such as whether or not the person wants doctors to do everything they can to keep

the person alive, even if the outlook is hopeless, or give them permission to let the person die.



BIRTH OF MICRO SUBSTRATES, INC.

A close friend of mine, Ram Panicker who had a doctorate degree in material science from the University of Southern California, was working in the cutting-edge field of designing and developing computer chips. However, due to the weak economic conditions among the highly advanced technology companies at the time, he lost his job. He was exploring opportunities to find a suitable job in his highly specialized field. So, one day he and another friend, Anil Agarwal, came to my house to discuss with me how best he should do it. As we discussed how Ram could get a job that he wanted, I suggested that instead of looking for another job, both of them could come up with a business idea—some form of service that society would readily appreciate and patronize. We established that they could come up with something brilliant from their field of expertise, while I probed their ideas for loopholes and workability, and then set up a plan for its survival.

Whenever you have a startup company, there are three main ingredients: The management team, sufficient capital, and the concept of either a product or service which serves and addresses the needs of customers. The management team has to first develop a business plan that will enable the company to operate for a period of at least twelve to eighteen months without much revenue. At this stage, developing a well-structured cash flow management system to sustain company operations is crucial. In addition, the management team has

to have the required know-how to sufficiently execute the business plan and appropriately make the changes required as circumstances change.

My suggestion to start a new venture thrilled the duo, who then brainstormed and eventually decided to explore the market of integrated circuit design and fabrication space. Back then, Intel was the major computer company which was designing and manufacturing computer processor chips, and they knew that the demand for these chips was increasing rapidly. Companies like Intel would be our new company's customers. Our team had to come up with various designs for testing which would eventually become the template to build a prototype. If the prototype met all the requirements of the technology industry and was proven to work, then selling the product would be feasible. However, we did not know if this would work. We were taking on a great deal of risk.

We called this company Micro Substrates, Inc. The first thing we did was to develop an action plan to span about six months. To give it some initial momentum, we funded the company with our personal funds. However, it was not sufficient to execute the full plan with a small capital so I ventured out in search of an investor who would look at the idea and invest. This way, we could grow the company beyond what we already had. We also explored purchase order financing where the product could be produced abroad once purchase orders were obtained from reputable companies.

I reached out to the investment community and venture firms to raise seed capital. Since I have worked with a few of these entities before, I have developed close relationships with a few of them.

One such friend was Brad Jones who was the managing director of Brentwood Ventures. In a quick phone call, I gave him a brief introduction about our venture and asked whether I could meet with him to present our proposal in person for which he gladly obliged. He probed extensively during our meeting, and I considered it to be a good start because it showed that he was interested. As he scanned the page showing how much we need as seed capital, his eyes narrowed and went silent for a few seconds. It's understandable because \$3,000,000 was glaring at him in bold numbers.

Finally, he looked up and said, "It would take some time for our group to carry out due diligence and come to a decision on this project but..."

He didn't finish his sentence. Instead, he looked at me intently as if to say I should go on and say something more to convince him. So, I said, "If we could get anything close to that amount, it would go a long way in breathing life into the project."

Generally, these investors would look at a new venture from many angles: the originality, viability, sustainability, and so on. And if the project looks like something that they are interested in, they would then invite us to do a formal presentation. That presentation would then be followed by internal discussion until they reached a consensus about making an investment. This usually took a lot of time and resources. I knew we would have to wait a while for any form of monetary investment.

"I understand and we are willing to wait for their process," I told Brad. Brad is a very important figure in the investment arena, and he's taken the time to listen to my proposal. That

alone was a great privilege. Truthfully, waiting for a response was difficult, but we had no other choice.

As we were wrapping up our meeting, I thanked him and said, *“To be honest with you, we are in dire need of an immediate cash injection to help us go further in our product development. We have some bills to pay, some parts to order and a few other things that require some immediate capital.”*

I actually made those remarks without an iota of faith that anything would come of it. Usually, no investor commits any cash when considering a new venture. So, my expectation from him was that there was nothing he could do.

“That’s understandable,” Brad said. *“Well, how much do you need?”* he asked.

I was both surprised and relieved that he asked such a question, but I knew we had a glimmer of hope for an immediate cash injection. So, I thought of a number in my head and responded immediately.

“We will need about \$100,000,” I said, the nervousness in my voice a little obvious.

He brought out his checkbook and wrote out a check to our company, Micro Substrates, Inc. without asking for any other details. I was extremely thankful to him, but this also encouraged me tremendously. His cash infusion to the company came without any documentation or formalities. This incident was the beginning of a long-standing relationship between us, and it still continues to this day. Currently, we sit together on the board of another company which I will tell

you more about in a moment. But to give you a quick hint, this company was the one I founded following that initial idea that was turned down by a Microsoft executive which I shared in the beginning of this section.

Soon after, a company in Arizona called Circuit Components approached us saying they were also interested in investing in Micro Substrates, Inc. They had some conditions, however: all of our production facilities were to be moved to Arizona, and, Ram, the CEO, was to operate from there. This meant he had to move to Arizona and basically start a new life. I told him that it was his decision to accept the offer or not, but after he thought about it, he concluded that he didn't mind moving if it meant the company could grow. This decision put me in a corner as we had already received a \$100,000 investment a month earlier from Brentwood Ventures.

I went back to Brad and explained to him that we had received full funding from another company in Arizona. Brad graciously accepted the money back. This gesture by Brad Jones went on to further solidify our friendship that lasted for decades.

The company in Arizona went on to operate for another fifteen years with reasonable growth in revenue. But as time went on, the technology became obsolete. The main element of manufacturing the company's product was based on a metal frame. It was not only fragile, but it was expensive. Various research studies were carried out on alternative materials for making such products, but it wasn't long before other companies started discovering methods to produce similar products using plastic. This discovery significantly impacted the demands for our products and crashed the price and significantly reduced our sales. This plunged the company into distress. It wasn't

long before we realized the company had become obsolete. This finally led to the company going out of business.

It was only the start of my entrepreneurial career. My role in Micro Substrates, Inc. was to sit on the board and offer advice and counsel, but the experience did add some value to my life and encouraged me to work more in areas outside my field of expertise.



BIRTH OF STAMPS.COM

Remember my story when I approached a Microsoft guy who turned down my proposal? It was the idea upon which Stamps.com was built.

In 1996, the Internet was still young, and e-commerce did not exist yet. At the same time, I was looking for an application to start a new venture after I obtained a U.S. patent for developing an e-commerce technology solution. I came up with a few possible ideas for using the software but there was a problem with its marketability. Back then, most software was very restrictive. You had to buy the software, install it, and then begin to use it. That software would become the user's responsibility. This had benefits because the user is in total control of the software and able to manage and configure the software independently. But the downside was that the software was susceptible to malfunction and hackers. In this case, if anything goes wrong, the user loses the value of the software and maybe some vital data. I wouldn't want to offer a product which will quickly lose its value to the user, because if it does, then it's not a real technology solution.

I let the idea percolate, and the potential solution came upon me in my attempts to answer these questions: what if the software didn't give the user total control? What if the manufacturer of the software had to be responsible for the management and protection of the software from damage and hacking? This idea wasn't commonplace back then, and the limited availability of the Internet didn't make this idea any easier.

I was originally interested in trying to license my patented technology with Microsoft as I have shared with you earlier, but they were indifferent to my suggestion. One of the senior executives, who directly reported to Bill Gates, told me that they were not concerned about my patent, and they could do anything they wanted to circumvent it. Disappointed, I was looking for possibilities for an application for my newly developed technology. Soon after, I started speaking with a few other tech firms. I was able to partner up with some of these tech firms and that has paved the way for the birth of Stamps.com.

The patent I'm talking about is the underlying technology behind Stamps.com. Before I tell you more about the patent, I would like to share where the business idea of founding Stamps.com started.

At the time, my older son, Ajay was studying medicine at the University of California in San Diego. He used to come to Los Angeles periodically, and one day he was having lunch with one of his high school classmates, Ari Engelberg, who was studying at UCLA on a combined MBA and law program. They were having a casual conversation during lunch, and Ari told Ajay that their MBA program was doing a project and how

massively interested he was at working on such a project. It was a team project with their two other classmates where they plan to develop an application for the United States Postal Service (USPS), something similar to a franking machine. Original franking machines were developed by Pitney Bowes about seventy-five years ago. These franking machines are now used for printing stamps from a preloaded value of stamps.

Ari and his team were thinking of creating a portable device that you would attach to the computer to secure and print stamps. It's a smaller and more accessible version of the franking machine. However, there was a potential security risk. Without the security device, anyone could print any number of stamps, and it would be like printing money. This would not be acceptable to the USPS. They were looking for a device that could be preloaded with a certain amount for a certain value of stamps, similar to what the franking machine could do. When the full value was used, it could be replenished for additional value.

While Ajay considered it to be a great idea, he thought it would only accomplish miniaturizing a franking machine. Instead, he said they should consider getting rid of the device and use secured software. My son told Ari that I had a new patent for security software and that Ari should talk to me. Ari had known me for a number of years. He used to come to our home with Ajay and was thoroughly knowledgeable about the technology I had worked on.

That same day, Ari came to our house and explained his project and the possibility of using the software I developed. Little did I know that that conversation would change my life in drastic ways! I immediately recognized the value of the application.

The application works this way: it's like printing money, but remotely, and in a secure way so that all the information is controlled. We had already developed the technology with all the security required, and since we also had the patent, nobody could steal it. But I told Ari that we could not develop and implement this technology without approval of the USPS because they unilaterally control the printing and distribution of postage stamps.

We knew very well that the USPS as an organization is filled with bureaucracy, and nothing moves fast. The last time a new technology was approved by the USPS was in 1920 when Pitney Bowes invented the franking machine. The USPS had not done anything revolutionary since then. I knew that this would be a big mountain to climb to get approval from the USPS. If the USPS did not formally give approval, there was no further hope because the USPS was the ultimate gate keeper for this new technology. They would either say yes or no, and based on their track record, there was a high probability that the answer would be no; not because of the lack of innovation of the technology, but because the way things were done in the USPS administration.

I recognized that this was an interesting but narrow application. If we could pass the USPS hurdle, the possibilities of competition were practically eliminated because any potential competitor would have to overcome our patent protection and get approval from the USPS. This was a clear barrier to entry and that gave me more interest in pursuing the application.

We immediately formed a company. I had been working with a number of startups, and I was aware of all the organizational

formalities that needed to be accomplished efficiently and inexpensively. First, we had to come up with a name for the organization, and it's always difficult to be creative on short notice. Without thinking for long, Ari came up with the name Stampmaster and I thought it sounded good. This was the original name of this company, but later we purchased the domain name *Stamps.com* from someone else who originally owned the name. Surely, there must be a way around this problem...

Ari was working with a couple of classmates who were involved in this project at UCLA in their MBA program. After Ari talked to them about our meeting, they became part of the original team. I had a law office, and a few people I know also joined the team. My law office became the first office for the company. Nobody received any cash compensation, but everyone was given stock options, and they all understood that there was no money available until we could raise capital from potential investors. Even then, there were other expenses for travel, so I decided to underwrite all these expenses from my personal funds. Initially, I had to do it without discussing with my wife because she would certainly have opposed it, but with my persuasion I knew she would finally agree. I felt that there was clearly an opportunity here even though getting approval from the USPS was a very difficult task. I, for one, did not see how we could possibly prevail, but I have learned that optimism can be a very powerful tool.

As I have discussed previously, there are three ingredients to having a successful startup. The first and foremost is to have a good team. In this case, I felt that our initial team was exceptionally hardworking and motivated. The second ingredient is a good product or service to offer. In our case, we

were convinced that our product and service would be highly innovative and valuable. The third ingredient is the sufficient capital to take the company to the revenue generation stage. I decided to fund the company up to \$500,000 without any cash going to our team members except for reimbursements. But in order to fully develop our technology platform and launch it, we would need to acquire revenue generating customers. Otherwise, we had to raise capital from initial stage or venture firm investors.

I was concentrating on two problems with the help of some of the team members. The first was to raise the needed capital. The second was to take steps to get approval from the USPS. I had a few contacts in the investment community, and I had reached out to some of them. We had generated an investment pitch deck and a business plan outlining the business model and the expected growth strategy.

Regarding the USPS approval, first we had to reach out to them, and they had to give us an opportunity to present our request to them. There was no existing method for such a request and application. Nobody at the USPS was looking for technology advancement that would help them or their customers. Since there was no existing procedure to follow, I decided to contact them directly and reached out to the Postmaster General with copies to their marketing head and their technology head. I did not get a response, and I had to make a number of phone calls to many people at the USPS. It took a few months before I could talk to someone who was willing to listen to us, and finally scheduled a meeting with them in Washington D.C. The meeting was finally scheduled for a Friday at 4:00 o'clock at their headquarters at L'Enfant Plaza. The day and time of the meeting made me believe that they were not serious about us,

because I knew most government employees leave very early on Friday, and our meeting was scheduled at a time of day when offices start to get empty. Even though I was happy to get a meeting at all, I became quite pessimistic about it.

In the meantime, we had completed our presentation material, and our technology team had started putting together a minimum viable software platform that could be launched as a test case to go through quality assurance. It could also be used to do some testing with real customers.

Before our meeting with the USPS, we had been presenting our materials to some of the well-known venture firms in the Bay Area at Sand Hill Road in Palo Alto. This was in 1996 when venture firms were funding many start-up technology companies. We must have talked to about fifteen to twenty very well-established venture firms, and we gave a very credible presentation. To our surprise, they were extremely interested in our company, and were enthusiastic about our vision. Based on the initial feedback and their interest in our business model, I felt that we would get more capital than we were seeking. They liked our technology, innovation, and the very creative application, so I started feeling more optimistic about our meeting with the USPS. Perhaps they too would see how our product could revolutionize the industry. But my pessimism would keep creeping in because they would only fund us if we got the USPS's approval. Without their approval, the product would be worthless. This was very frustrating to us because we felt that the possibility of getting the USPS's approval was very remote.

Even though we were discouraged, we decided to attend the USPS meeting. We took a red-eye flight and reached Washington

D.C. the next morning. We went to the hotel and took showers, and in the late afternoon went to the USPS headquarters for the meeting. I told my team that I would do all the talking, and when I wanted someone to explain something, I would invite them to take over. We had to have a clear plan to communicate to the USPS personnel. I also told my team that we had one opportunity to meet with them, and if we did not use that opportunity well, there would not be a second chance.

But to my surprise there were a number of people from the USPS staff, about fifteen of them, at the meeting. I was pleasantly surprised that so many people were there. We started the meeting, and I introduced myself and my team members. Suddenly, I was overwhelmed with positive feelings. It might actually work...

I explained that the underlying technology and system description was quite innovative. I emphasized that we had obtained a patent for our new secured software platform. Moreover, my credentials were pretty good and because of my prior work experience with NASA and the DoD, they recognized that we were aware of their concerns about the security of the system. We would potentially be handling a large amount of money through our platform, and any failure in the security of our system would cost the USPS a lot of money. Our team had anticipated all the possible concerns and questions the USPS would have, and we were well prepared to address their concerns. Their main issue was potentially losing enormous amounts of money because of any possible security flaw in our system, so we explained that we had developed the system to prevent any defects by monitoring and tracing all the usage of the system.

I tried to explain to them, in detail, all of the aspects of the system, how it would work, and specifically the security concerns. We also showed them why the security system could not be hacked. They had an incredible number of questions, and we addressed most of them to their satisfaction. As the meeting went on, I started feeling more confident that they had a lot of interest in our proposal. They were probing me and our team deeper and deeper, and I felt that they saw the value of what we had to offer. I realized that, perhaps I should not have assumed that they would not be receptive to our idea. It was the contrary! They seemed to be quite interested in new technology.

The meeting lasted for about four hours without a single person leaving the room. This gave me and our team tremendous encouragement that something positive was going to happen. It was strange to see people sitting in a meeting on a Friday evening past dinner time. They were very supportive, friendly, and started suggesting several ideas about how this could be used to distribute postage in a secure way. Their team leader said they would like to take it to the next level and warned that there would be many procedures and hurdles to be overcome. The first step would be independently verifying that the technology performed as we said it did. They also had to independently verify the security of the system and whether they could come up with a method by which they could circumvent it.

They said that what they would do first is to hire an expert with whom they had a relationship to do a thorough analysis of our system to review the total security protocol. Depending on his report, they would take it further. He told us that their expert was a professor at Ohio State University and an expert

in cryptography. We needed to provide everything to him, and work with him to get a detailed evaluation completed. The team leader also said that they could not do anything further until this report was completed. Based on the recommendation of this report, they would consider what to do.

This was very encouraging to all of us, and this gave us a lot of hope. There were many hurdles still yet to overcome. The report might say that the system did not do everything they needed it to do. The system might have a few holes and might not work under certain conditions. We were not sure what the report would say. Even if the report was very positive, there would be other procedures like publishing projects in the federal register and requesting others to submit similar systems developed or available. They said that this was a government requirement and they had to go through all these procedures. With many different players involved in the evaluation phase, only the USPS will ultimately make the decision.

We had achieved more than we had hoped. It was a good meeting, but now there was more work to be done, which meant we needed more capital to meet all the requirements. I had been underwriting all of the expenses personally until then, and the cash balances in my original budget were getting low. The need to supplement was becoming more urgent. I had spent close to half a million dollars thinking that there was some value to this idea. We were doing something good, not just for us, but for the whole of society. It became clear to me that we had to raise capital very soon.

When we got back from Washington D.C., all of our team members were in great spirits, but they had many things to do. They started planning for how to get all the work done. They

were charting out the various tasks regarding the relationship with the Ohio State University professor in order to help him with all the information about our software platform and all the supporting documentations that would help to complete the process faster. All these tasks were being done by my very efficient team, and I did not directly participate in these efforts. We had a small team and each of them had their own specific responsibilities, but each of them was helping each other as needed and many of them were wearing many hats.

To raise capital, I was taking the lead by meeting venture firms in Palo Alto. I casually mentioned that I had a prior relationship with Brad Jones at Brentwood Ventures. I decided to meet with him and give him the full account of the meeting. If any one of the big venture firms from the Bay Area would have funded us as lead investor, I was planning to approach Brad to ask him whether he wanted to join us. But all the big firms turned us down. They did not turn us down because our idea was not good. They agreed that our idea was very good, but we would not get support from the USPS.

I met with Brad and told him the whole story. He reviewed everything thoroughly and gave me enough time to go through everything in detail. After a lot of discussion, questions, and answers, he asked me how much capital I was looking for and what would be the minimum I needed to take it to the next level. I told him that I needed a minimum of \$6 million and I had a well-planned budget, but it would take some time before we started generating revenue. I also told him that we would have to raise more money when we started generating revenue to expedite our growth. The only time we could start generating revenue was after all the USPS approval processes were completed. Then we had to acquire customers who

would use our system on a subscription model. He understood there were many hurdles we had to overcome, and he was also aware of the fact that everything would fall apart if we could not get the USPS's approval. But he understood that the USPS had started to make some investment in hiring an expert to evaluate our system. He thought there would be a good chance that if the evaluation report was positive, the USPS would grant us their approval. Still, there was always the chance that we would be denied.

He looked at our budget and without really doing any detailed analysis, he said that he would not be able to fund the whole six million dollars because it would be a big risk for him. But he said he would be able to invest \$2 million, provided we find one or two others who could help us reach \$6 million. He emphasized that I would not get the two million dollars unless I first secured the other four million dollars. I was thrilled! It's not exactly what we were hoping for, but it was a fantastic idea and a great start.

I was very happy to hear that, and I told him to give me a formal term sheet because it would be useful for me when I talk to other investors to show them that I had a formal offer from a prestigious venture firm. Generally, a term sheet is a one-page document which details the various conditions of the offer and identifies the pre-money valuation and various rights of the investor. This term sheet would be converted into a formal legal agreement between the company and the investor prior to transferring the funds to the company.

Pre-money valuation is determined not by any exact science, but by expectations of how the business should perform under certain assumptions. One method used is looking at the

financial forecast, for say four to five years, and estimating the potential market value of the company at that point and then discounting it back to the current year. Most entrepreneurs depend on the pre-money valuation suggested by the investors and sometimes there is some room for negotiation.

Brad and I had some discussions regarding the pre-money valuation of our company and some other terms and conditions of this offer. We agreed on all of them, and he got his staff to prepare a term sheet. Then, I had to find some other investors to make up the balance of \$4 million. At first, I really did not know whom to approach, but I was more confident than before that I could convince investors. It had become very clear to me that this venture had potential.

In this venture the capital required was primarily for people. We did not need expensive hardware, and the cost for data storage and cryptographic equipment was very reasonable. This was before the availability of cloud storage. Other expenses included marketing to acquire the customers. Customer acquisition costs needed to be well-planned and managed. The general principle is that the more one spends for customer acquisition, the more customers one can acquire. The cost of initial acquisition per customer will be significantly more than for new customers in the future. Essentially, once you *have* customers, it's easier to *get* customers.

After getting the term sheet, I said to Brad that I would go and get others to participate in this investment cycle and asked him whether he could recommend two other people who might be interested in investing. Brad gave me two names, and I was free to contact them and say that Brad was investing in our venture. He gave me the names of Jeff Brown and Tom

Clancy. Interestingly, the Tom Clancy that most people know about is a famous novelist, but this Tom Clancy is an investor and had his own investment firm. Jeff was from Orange County, and Tom from San Diego. I never met them before but with Brad's introduction I was eager to contact them.

I was extremely excited about this development, and as soon as I reached home, I called Jeff, who took my call. I introduced myself and told him that I got his contact information from Brad. I explained our project briefly and said Brad was making an investment and I was planning to talk to other investment firms. I also told him that Brad gave me Tom Clancy's contact information as well, and he wanted me to talk to him also, but I said that I had not talked to Tom yet.

I gave Jeff a short summary of our venture and a short summary of Brad's offer. I told him that I was looking for one or two people to invest the balance of \$4 million, and I would like to get it done as soon as possible. He asked me whether I had Brad's term sheet, and I said that I did, and that I was going to fax it to him. We concluded our conversation and he said he would review the term sheet. I told him that I would like to hear from him either way so that I could talk to other people accordingly. He said that he was looking forward to it and would get back to me very soon.

I faxed the term sheet to Jeff right after our call, and decided not to call Tom until I heard from Jeff. Within about thirty to forty-five minutes, Jeff called me back and said, "Mohan, I got it, it looks pretty interesting, and I am in." I was thrilled to hear that. He told me that he was ready to invest \$2 million and he was fine with Brad's term sheet. This made me extremely happy, but I still needed an additional \$2 million from another

investor. I just had to hope that Tom would also invest. My heart pounded as I dialed Tom's number.

After my conversation with Jeff, I called Tom, who also took my call. I gave a brief summary of the project, and told him that Brad and Jeff were each making a \$2 million investment based on Brad's term sheet, so I needed an additional \$2 million. Similar to Jeff, Tom asked about the term sheet and asked me to fax it to him. He said he would get back to me after he could review the term sheet and would inform me whether he would make up the balance of the investment.

Within half an hour of faxing the term sheet to Tom, he called me and said, "It is very interesting, Mohan. I am in as well." I was extremely happy to hear that. My primary job was done. The commitment for the required capital was obtained in less than a day, and I am not sure how many people could have accomplished this task so fast. Everything fell into place but I'm sure luck played a major role as well. This was all done without any of my team members knowing what was going on. The next morning, a team meeting was called, and I informed all the team members of the good news and told them that now we had the money. We had to put in the effort to make the project successful. All of them were thrilled partly because they would start getting paid for their work.

As a lead investor, Brentwood Ventures hired a well-known law firm, Irell & Manella, as their firm's legal counsel. The agreements and documents were drawn up and the funding could be put in place. Even though I am a lawyer, I did not want to represent the company, so I needed to hire an outside law firm to represent our interest. But I did not have a lot of

money to spare to pay a law firm. I was already at the brink of my budget, so I needed to be creative about hiring a law firm.

We did some research and got a law firm called Venture Law Group, in the Silicon Valley, to represent us. I met with their senior partner, Craig Johnson. They do not exist now since they have been absorbed by one of the leading Silicon Valley law firms, Wilson Sonsini. They were pioneers with start-up companies and instead of charging fees for their work, they were interested in equity in the company. This was good for us because we did not need to pay them cash. If our stock became more valuable, they would make more money. However, they were also taking risk because if we were not successful, they would have been paid nothing.

During this process, the investor's law firm also did a detailed due diligence of our technology including my patent on this new platform. They also wanted to make sure that my patent was solid and well structured. Irell and Manella is well-known for their patent division, and they have one of the best patent lawyers in the U.S. I had a few personal interactions with their patent lawyers because I had obtained the patent in the first place, and I was in the best position to explain it.

Even though we had a term sheet, the funding would only happen if all the due diligence was successfully completed. This would take about two months to complete. This is what all start-up companies had to fulfill to get funding from any venture firm.

I had a number of conversations with attorney Seth Weisberg who would handle due diligence. At every step of the way, I felt as though things were going very smoothly. Seth was very

competent, and I felt that we worked well together. It appeared as though the patent was as rock solid as I had hoped. Our funding was on the horizon.

After the funding was in place, I hired more people so that we could move more quickly. We hired technology personnel from India and brought them over on work visas. Their job was to have the platform ready to launch as soon as the USPS approval happened. We did not have in-house legal counsel at the time, but I had a good relationship with Seth, so I asked him to join our team. I knew he would have to leave a very prestigious law firm to work for a risky start-up company. But he knew that we could offer a very attractive stock options plan. Unfortunately, our cash compensation would be considerably less than what a big law firm could provide.

I talked to Seth, and he showed interest and said he would get back to me after he discussed with his wife. I did not expect him to join our company, but he called the next day and said that he would. I was delighted. He stayed with us until 2019 when he decided to retire early and travel around the world with his family. He has continued to be available to the company on a consultation basis as needed. This was possible for him and for a few others in our company because of the great success of the company and the stock options compensation package.

One of the others who retired early is Kyle Huebner, who was our CFO and then president. He and his family are still traveling around the world. Currently, due to the pandemic they are living on one of the beautiful islands in the Caribbean Sea awaiting further travel. Michael Biswas, our Chief Technology Officer, also retired early. Ari left the company a few years ago and practically retired, however, he is engaged in many activities

including working with several charitable institutions. He is in constant contact with my son Ajay, and they periodically play basketball together.

I am proud to say that many of my employees became multi-millionaires because of our success. I have been able to employ thousands of people in my various companies, and many of them have become significantly wealthy and this was all because of their hard work. I only played a very small role in their success.

Within a couple of months of raising the initial capital, we did get the approval from the USPS, and it was a great day for the company. Soon after, we decided to raise the second round of capital with a goal of \$30 million. As soon as the word got out that we were raising capital, we were offered \$60 million from different investors. Within a few months, we launched our technology platform, and we started a small amount of revenue. Marketing became a priority, and we started hiring a number of employees.

I decided to step down from the CEO position, though I continued to be on the Board. Even now, I serve on the Board. Currently, Brad and I are the only original board members from the start of the company since our initial investor funding. The company went public in 1999, and it had a secondary offering where we raised over \$400 million from the public offering. Over the years, the company made a number of very valuable acquisitions and has been very profitable. The company has no debt, and it has significant cash on-hand that can be used for any future acquisitions. Currently, the company has over 1200 employees throughout the world, and it is transforming from a U.S. company to an international company with over a

million customers and yearly revenue reaching about a billion dollars. The company has successfully progressed over the years and, as of July 2021, *Stamps.com* has executed a definitive agreement to be acquired by Thomo Bravo, a leading software investment firm, in an all-cash transaction that values *Stamps.com* \$6.6 billion. Under the terms, *Stamps.com* stockholders will receive \$330 per share.



E-COMMERCE PATENT

When it comes to technology security, my mind was always on high alert for potential threats. Working with NASA and the United States Air Force had been instrumental in developing in me this kind of thinking. So, when I developed my first patent for e-commerce, I put high priority on fine-tuning the security aspect of the technology.

It was in 1996 when I obtained my first patent in the field of e-commerce, and I have acquired three more in the same field. Over the years, I have amassed fifteen patents in various areas of technology. The first e-commerce patent has become a reference material for all of the e-commerce related patents issued subsequently. My interest in technology was originally in the area of interplanetary navigation working with NASA and GPS working with the United States Air Force. The key aspect in both of these projects was the security of the system. Security, in this case, meant that no third party could intrude and take information or make any changes to any of the system components.

An important factor in designing a secure system is figuring out how such a system could be broken into by anyone under any circumstances and consequently developing a system that can survive such attacks. I studied such systems when I was working for the Department of Defense (DoD). In the DoD environment, all systems, including weapon systems, must be survivable under all threat conditions. Generally, the intelligence department developed the threat profiles and conditions, and the system design personnel designed the systems.

As I have mentioned earlier, I was used to thinking about threat conditions. I was aware of the potential threats that would happen to an e-commerce platform. It involved proprietary and confidential information that must be protected under all circumstances. Therefore, the system I was developing had to have all the necessary safeguards to protect the integrity of the content and operation of the system.

The communication system that was generally available was mostly open, meaning that it could be broken into by any outside personnel or systems. That was the prevailing flaw in all communication systems. For example, our telephone conversations are through an open system. Without our knowledge, anyone can hear or record our conversations, and therefore the telephone system is not a secured system. Once a secure system is developed, it has to be secure one hundred percent of the time. Nobody other than the intended person or system should be able to access, store, or change any information or stop its functionalities.

I started thinking about the security features related to software and the way the software is disseminated at that time.

This was between the years 1992 and 1993. Computer science was an emerging discipline in the late 1950s, and in 1969 the DoD started a project known as ARPANET primarily to connect a number of computers at various institutions located around the U.S. so that computers could communicate with each other. In the early 1970s, international working groups led to the development of protocols for inter-networking, in which multiple separate networks could be joined into networks of networks by which various standards were developed. By 1974 Transmission Control Protocol (TCP) and Internet Protocol (IP) had been developed, and that became the standard that is used today. Between 1989 and 1990, the concept of the World Wide Web came into being, and a very limited form of Internet services began commercially in the mid 1990s. From there, the Internet applications started to grow.

At the beginning of the Internet, I started to think about developing a technology leveraging the Internet. Prior to this, users purchased the software needed and downloaded it into their computer. If there were any new updates to the software, they had to purchase an entirely new software with updated features and start the process of downloading and reconfiguring it to their system all over again. That was not practical, but I saw an opportunity in this flaw.

Even though there were no practical e-commerce transactions in 1992-1993, I pondered upon the concept of selling the software by licensing it online through the Internet. You will remember from the previous topic (birth of Stamps.com), these concerns of mine when I was developing the technology. At the time, I didn't know what would become of the technology, but I went ahead and worked on it anyway given the resources available to me. By licensing the software, the users don't

need to purchase it each time there's an update. This licensing model is now known as SaaS or Software-as-a-Service.

SaaS is a software licensing model in which access to the software is provided on a subscription basis, while the software is located on external servers, generally maintained and managed by the providers of the software rather than on the user's servers. SaaS is typically accessed through a web browser, with the users logging into the system using a username and password. Instead of each user having to install the software on their computer, the user is able to access the program via the Internet.

We could then monitor the usage of the software in a secure method and charge accordingly. The technology behind it is a cryptographic communication software between the merchant and the user. We developed the protocols for various applications, and some of the applications are now being used for streaming music and videos, printing postage stamps, and running various kinds of e-commerce transactions.

The rise of SaaS also coincided with the rise of cloud-based computing. Cloud computing is the process of offering technology services through the Internet from a cloud service center, which includes data storage, networking, and other various features related to security and other tools.

The primary invention of this pioneering technology, for which I obtained a few patents, is that one can do transactions on the Internet securely. Security was the main objective, and we could achieve it in almost all areas of e-commerce. This began to grow rapidly. When I started this effort in 1992, the applications on the Internet were greatly limited, but I

was confident that the Internet would see significant growth with the availability of much broader bandwidth. Today, this dream has come true, and the whole e-commerce industry has transformed the lives of both merchants and customers.



ENVESTNET

In 2001, after I took *Stamps.com* public and raised a significant amount of capital, close to \$500 million, I was approached by one of my friends, Suresh Siva, who was a very successful financial advisor. He suggested that it would be interesting if we could develop a digital platform for the financial services space that would help both investors and financial advisors like him. I recognized that it was great idea, but as I was new to the financial services world, I told him to let me do some research to acquire a good grasp of this industry. In order to navigate this area, I studied what was being done and whether there was competition, and how the system should be structured.

As in any start-up, there are three elements for success.

The first is a good team of competent people. I told Suresh that we needed to have a good team to manage this venture. Our plan was to combine the few competent people from his existing organization with those from my network.

The second is the product or services must be identified.

The third element is to come up with sufficient capital to move forward. In my research, I found out that there were

digital platforms existing in the market, however, they were used by big investment companies for their own internal use and were not available to independent financial advisors. It was clear to me that there was a market for this product if done correctly and we could take advantage of all the new developments in digital technology. At the time, most of the existing platforms used by the large financial institutions were using rather old systems and were not able to adapt to the recent advancements in information technology. I felt there would be great interest in the new products, and it could be marketed as a new service for the financial community.

A new company was formed called Net Asset Management. The objective of Net Asset Management was to develop a technology platform that would provide all the functions when a customer opened a new account. We would take the investment and deposit it in a custodial bank account to develop an investment plan tailored to the consumer's desire and risk tolerance. After doing a detailed asset allocation analysis and making the appropriate timely investments, we would then generate all the regulatory reports including tax analysis and tax reports that are made available to an independent advisor. The revenue model was rather simple so the company would charge a fee based on the assets under management. This was customary in the financial world. The fees were between 10 basis points to 50 basis points depending on the types of assets that were held.

It was evident from the beginning that the company had to have a large asset under management in order to have enough revenue and having a recurring revenue stream is a great advantage to make this possible. As one built assets, the revenue would increase proportionately. I brought two

technology people to Suresh Siva who had worked with me in the early stages of Stamps.com and would be able to manage the technology platform development in a cost-effective manner. They were Babu Sivadasan and Suresh Kolachalam. Babu continued to be with the company for a long time and became the executive vice president and a president of one of the divisions. He later left and founded an artificial intelligence and automation company known as Paanini, Inc.

Suresh Siva was very happy with my recommendation regarding the technology personnel. Having a great team means putting the right people in the right jobs and this is something I have learned very early in my entrepreneurial experience. The work I've done with NASA, NORAD, and the United States Air Force was accomplished by different teams that I was a part of, so I know that it is crucial to put together the right individuals in a team in order for a project to be a success.

An initial management team for Net Asset Management was pulled together, and a business plan was developed. We also met with a few venture firms to raise capital. Interestingly, it had not been difficult to convince investors to fund the venture. They remembered the time that I raised significant capital through private and public vehicles to fund Stamps.com. When we met with a few of the venture firms, they said that they had missed the opportunity to invest in my prior venture and were happy to participate in this new one. We were able to raise reasonable capital to develop the technology platform and for an initial launch. I joined the team on the board of the company, and my main function was to advise them regarding technology, marketing, and cash flow management. I advised the management that they should develop the product in a cost-effective manner and keep the labor cost to a minimum. It

was clear to all of us that the revenue could not be generated until the product was designed, developed, implemented, tested, and launched. Only then could we market to potential customers.

I also told Suresh Siva that one of the ways they could reduce the cost of development was to do the work in India where labor costs were lower. Suresh Siva appreciated my suggestion. Suresh was originally from Sri Lanka, and he knew about India. He was ready to go with my suggested plans, so we started a small team in India and the work started progressing. One of his close associates and the co-founder of the company, Karen McCue, who was functioning as the Chief Operating Officer, was not comfortable with the idea of having most of the work being done so far from the U.S. In her opinion, it would be very hard to manage the activities in India from the U.S. As a result, I suggested that before coming to a final decision, she should go to India and spend as much time as she needed in order to make a well-informed decision about how to go forward. I told her that she could see the situation there and interview the people. Then she could personally witness the work ethics and make her own assessment. Based on what I had seen, I had a feeling she would approve.

The main reason I was suggesting that we use the work force in India was because the salaries for highly skilled technical personnel in the U.S. were fairly high compared to India. I had been insisting to the management that they must allocate for expenditures in a very frugal manner, because I had seen companies spending capital too fast by spending on too many employees. In my opinion, this would not work because it always takes more time than expected to develop, implement, and market products. It is always necessary to plan for

unexpected events and delays due to errors, and it is prudent to keep cash reserves for such contingencies. The success of any start-up depends on cashflow management.

Karen decided to go to India, specifically to Trivandrum, in the State of Kerala where the company had a small team of technical personnel working on the design and development of the new technology platform. Karen told me that she was just doing it for me, and she was certain this type of remote operation would not be possible. She assumed we would have all kinds of difficulties. She went and met with the team in India. At that time, we had a few people mostly engaged in the early design and development work. I communicated to the team prior to her arrival that she had no confidence in having a remote team for the development and operations of the platform. I told them she was coming to India to confirm her belief, and to prove her wrong, I advised that they should respond to her questions as best as possible and make sure she was fully informed.

The team in India recognized the issues, but at the same time they had to be truthful about what they could bring to the company. She spent about a week meeting with the whole team and did a thorough investigation of both their strengths and weaknesses. She was very inquisitive and saw the surrounding places and interviewed a number of potential employees.

Before returning to the U.S., she didn't pass up on the opportunity to see some of the beautiful tourist attractions near the place she was staying, while all of us back in the U.S. were nervously waiting on her decision. Even though I had confidence in our people in India, no one knew exactly what was on her mind. She asked every question she could ask,

scrutinized every step of their process, and left without hinting at what came out of her in-depth and in-person assessment. I was readying myself for Plan B in case she would rather stick to hiring labor workers in the U.S. But I decided to wait before taking any step.

The next day, after returning to the U.S., we met her at a coffee shop downtown where the mood was light and the weather sunny. I thought it might add levity if she delivered bad news. “The Taj Mahal was a magnificent view to behold,” she exclaimed as she was sipping coffee from a wide-mouthed yellow mug, “and the people were lovely and nice and full of life!” While I know that what she said was all true, I was conscious that she might be starting off with something sweet before breaking the bad news gently to us.

Before I even had the chance to respond to her admiration of our country and people, she blurted out, “I’m all for it!”

For a second, I thought I didn’t hear it right. She was quite adamant before she left for India and now it was like talking to a different person. She told me that it was the best thing that could have happened to her. She also agreed that it was the best place to set up our development and operations, and even thanked me for insisting that she visit India and come to her own conclusions. I was happy to hear that. On that day, Karen’s decision turned the company into a multi-billion-dollar company. If we had not used the team in India, we would have run out of money much sooner, and the possibility of raising the needed capital would have been difficult.

Many start-up companies have failed just because they lack sufficient capital. I thank Karen for being very critical and

objective in the best interest of the company. Her decision, in my opinion, saved the company and now the company has over two-thousand five-hundred people working in India.

After this trip, Karen became a supporter for the India operation but also a spokesperson for the India team. This was like a religious conversion. Suresh valued her input very much, and he could not have done anything without Karen's support.

The company started growing in India and in the U.S. I was not very happy about the growth in people in the U.S. because our burn rate was increasing more than I would have liked. This was during the pre-revenue period. Revenue would not come until the product was reasonably developed and fully tested. It could then be launched and marketed adequately. This is true for all companies unless the company is just a professional services organization that does some work for the customer and then gets paid.

In 2004, we merged with a similar company headquartered in Chicago, and the company's name was changed from Net Asset Management to Investnet Asset Management. Jud Bergman became CEO and Suresh became the Co-Chairman and President. The company started to grow very fast, and the number of employees in the U.S. and India grew much faster. I continued to be on the board of the company.

The growth in the number of employees in India required the company to think about having a corporate campus in Trivandrum in India. Not all of the employees were working in one place, so they had to lease many buildings in different locations. This created some difficulties in local management as well as some difficulties in attracting good employees. The

board considered building a campus for the company, but they were not interested in building and owning a building in India. I offered the suggestion that, since I was originally from India, I could form a local company with some of my friends and build a campus for Envestnet with a long-term lease agreement. Our team in India came up with a design and a desirable location in Trivandrum for an office building for 500 employees. Envestnet management liked that proposal and agreed to go forward with the project.

In the meantime, Envestnet management decided to offer an initial public offering (IPO) in 2010 on the New York Stock Exchange to raise sufficient capital. This is a real success story. Subsequently, Envestnet looked for opportunities to acquire complementary companies to expedite the growth process. Over time, they acquired a few of the great companies in their space.

However, I stepped away from the Envestnet board because I was involved in another Indian company, Innovation Endeavors Pvt. Ltd., which was responsible for building the campus building for Envestnet. There could be a potential conflict of interest, even though all the facts were fully disclosed. Even when I was not on the board, I kept close contact with the senior management of Envestnet including then CEO, Jud Bergman. Envestnet has outgrown their current campus facilities and are considering building another bigger campus in Trivandrum, and our team is working closely with them to see how that can be accomplished.

Jud used to visit India often, and he was very appreciative of the development and operations activities in India. Between Trivandrum and Bangalore, there are about twenty-five-

hundred employees in India. Additionally, Envestnet also has about twenty-five-hundred employees in the U.S.

Something very sad happened recently, though. Jud was visiting San Francisco on a business trip, and he was planning to meet with Babu Sivadasan, who, after almost twenty years, left a senior management position at Envestnet to start a new venture. A few days prior to Jud's visit, Babu and his team had an inauguration function for the new company at the Stanford University campus which I had the privilege of attending. Jud was planning to attend as well, but due to another business engagement, he could not attend. When the next opportunity came to travel to San Francisco, he used it to meet with Babu. Generally, Jud's wife did not travel with him on business trips because he travelled quite often. But on this trip, she decided to accompany him. That night, Jud and his wife Mary landed at San Francisco airport after 11:00 pm and took an Uber to their hotel. The traffic was light, but a terrible collision occurred, which resulted in the death of both Jud and his wife. It was a very sad day for all of us in the Envestnet family, and for me in particular, because I had known Jud for many years. We all miss him very much. Subsequently, Bill Crager became the CEO and continued the growth of Envestnet.



JAB VENTURES AND CHASE

At the turn of the century, sometime in 2001, I was introduced to a dynamic young man, Jack Li, who was a friend of one of my sons, Ajay. They had been college buddies and still maintained a robust friendship.

Jack Li started a company called Menus.com, which was set up primarily to offer services to restaurants in various areas. It provided information and advertisements aimed at providing digital services to maximize profits and streamline operations. My son recommended me to Jack Li when they expressed the need to find credible people to sit on the board of the company. Once I got to know what the company offered, and what the vision of the company was, I gladly accepted.

Over time, as I served on the board of Menus.com, the company received significant investment from a gentleman named Gerry Chase. He was a well-known professional, businessman, investor, and philanthropist. He is also a CPA and has worked as senior executive in a number of major public companies. He is well versed in the world of investments and corporate governance and regulatory and compliance requirements. I did not know about him prior to this relationship. He and his family were well-known and the largest distributors of exotic and high-priced cars in California, and they had an operation in San Diego called Symbolic Motors. I later got to know Gerry personally as a result of our interaction with Menus.com, and our friendship grew as time went on. In the long run, he became a close friend, mentor, and business partner.

Menus.com at that time had its office in London, so we had the privilege of visiting the Menus operations in London a number of times for both social and business interactions. These trips alongside Gerry Chase, I believe, helped to shape our friendship and exposed me to different angles of business and investments. Since he was involved in many business ventures, he would discuss with me his other enterprises and would seek my advice about how we could work together on some of those ventures.

On one of our numerous trips to London, Mr. Chase told me about his exploration in the area of starting up a venture firm. I bought into the idea, and we came up with a company called JAB Ventures. The outfit focused on investing in various viable start-up and early-stage companies. Our area of focus at the time was primarily in Europe.

We began by registering the offices of JAB Ventures on the island of Guernsey, one of the Channel Islands. Our reason for choosing this location, instead of anywhere else in England, was because at the time, registering and setting up a business on the island of Guernsey had significant tax advantages. One of the strategies to cut down costs, when it came to setting up a business venture, was to take advantage of such tax-free opportunities. It was not in any way improper or illegal nor were we evading responsibility at all. It was a good business decision.

Another thing we did to raise funds for this company was by going public in the London Stock Exchange. This experience was a first for me at the time in the UK market, even though I had taken *Stamps.com* public in the U.S. market through the NSDQ Exchange. I had tremendous experience in taking a company public back in the United States of America, but I had none doing so in Europe. This was an opportunity for me to see how it worked.

So, we took the company public on the Alternative Investment Market (AIM). This was a pleasant experience, and we raised the capital we were looking for.

We used to travel a lot in Europe and go to many cities to meet with a number of entrepreneurs who were looking for

investments. At the time, there was an organization called First Tuesday Club which arranged meetings between investors and entrepreneurs. These meetings were held in all major cities in Europe, and we attended many of them to meet with various business leaders seeking investments. This was a great experience for me to learn about the thought processes of business leaders with different cultural background and long-term visions. My prior experiences were trying to raise money from potential investors. Here I was sitting on the other side selecting companies in which to invest. My prior experiences in starting companies and managing various talented people were extremely valuable to the new role of selecting the right companies with the best team possible.

The internal structure of JAB Ventures had a number of functioning units, but one of the primary concerns was the committee we had to set up to look into and explore various businesses as they came. The idea was that such committee had four to five members; once a person or a group had an idea of the company they wanted to invest in, one of the committee members would meet with this person or the group. This member would listen to the presentations of this person or group.

Once this was done, a meeting would be set up between this member and the rest of the committee, without the owner of the idea present. He would then present all he had been told about his evaluation of the idea to the group for their consideration. This normally took quite some time. Various questions were asked for more clarification, gray areas were highlighted, and so on. For any idea to fly, every member of the committee had to vote yes. This is a common practice among most of the venture firms to get a unanimous approval from

the investment committee to move forward. This requirement often makes it hard to make an investment happen.

This method did create some friction in the room, but it was the best way to do business because it gave each member of the committee a sense of belonging and responsibility. After all, if we decided to fund any business and it flopped, we all took the hit. It's the same if a business succeeded. We would all share in the profit. Each member had to apply due diligence, scrutiny, and commitment to new ventures. Once a company was chosen and funded, one of the committee members was selected to sit on the board of that company.

In the course of running this company, we came across a business called RM Auctions. This was a Canadian company which was known for auctioning expensive classic cars. These cars had to have a significant history for them to be worth the hype. And even though RM Auctions was based in Canada, they carried out their auctions in Carmel, California. These auctions were held annually, in August. So, after we looked at the company, in terms of its profitability and opportunities, we decided to invest in it.

Gerry and I were selected to be board members at RM Auctions. This job opened another world of experience for me. Even though I loved cars, I wasn't a classic car enthusiast. So, I watched a number of classic cars being auctioned at very high, sometimes ridiculous, prices. I remember witnessing the auctioning of a 1939 Mercedes Benz which belonged to Adolph Hitler. The black, cigar shaped car was sold for \$30,000,000. The value of a classic car is primarily determined by the history and documentation associated with it.

So, every August, auction centers were typically littered with the rich and famous. Superstars, celebrities, and billionaires drive the prices of these classic cars up until one of them lands it for a very high price. These aren't necessarily bought for profit, but rather for prestige. I had the luxury of attending these auctions for a number of years when I was on the board of RM Auctions. I enjoyed seeing the beautiful classic cars and meeting with some of the famous people who would come and vacation there. Some of them would buy these expensive cars just like one might buy very expensive paintings. In the long run, JAB Ventures made some money from investing in RM Auctions, but the level of exposure I got from serving as a board member of the company, was worth more than money. Recently, RM Auctions has been acquired by one of the largest auction companies in the world, Sotheby's, and the new company is known as RM Sotheby's.

Because I was on this board with Gerry, we had more opportunities to spend time together, and one of the areas he was instrumental in helping me to learn was the field of estate planning and estate tax issues. In my professional life as a lawyer, I worked with business leaders advising them how to manage their business, grow the business, and meet all the regulatory and compliance requirements and related activities. One of the obvious areas my clients were interested in is the proper transition of a business and related wealth from one generation to the next. I was not an expert in the field of wills and trust, which generally deal with estate planning and estate tax issues. But I had to provide certain guidance to my clients most of the time, and when more work needed to be done, I would recommend them to a specialist in that area. However, working with business owners made me do additional research to learn more about estate planning.

Moreover, Gerry, who was very knowledgeable in the area of estate planning and estate tax problems, became a very valuable source for me to find more creative and innovative ways to minimize estate tax liabilities.

I learned a lot of different things working alongside my friend Gerry, one of which is his passion for engaging in charity work. I watched him give back to his community on so many levels that it inspired me to do the same. A lot of what I did and still do had direct inspiration from his wealth of knowledge and experience on the subject. I still have a lot of gratitude for the various roles he had played and still plays in my life.



VUETOPIA

In early 2004, a friend of mine, Anil Agarwal, who worked with me previously on another venture, Micro Substrates, Inc., approached me when he was in San Diego. He had put together a team to pursue a start-up called Vuetopia and he wanted my support and participation. He had already completed a detailed business plan. His team was well experienced with great credentials in practically all areas of business such as technology, R&D, business development, marketing, financial management, operations, and other relevant areas.

After reviewing the business plan, I was not fully convinced about the venture but after a number of meetings with Anil, I decided to join the team as the chairman of the board. The reason I was not initially thrilled about this venture was because I knew that this was a capital-intensive business model. My experience thus far had been mainly technology

driven projects with innovative technology without the need for any significant capital for equipment.

The idea was to install large display units strategically positioned in malls across the country. The purpose was to play various types of entertainment in between advertisements for the products available at the malls, and also highlight the special offers of the day. This was long before display units became available at inexpensive costs. At the time, the cost of a large display unit would be over \$500,000. Today, the same display unit would cost less than \$5000 and compared to the earlier models, the current models are much more advanced.

This business model is similar to billboards but more technologically advanced to maximize the impact on the audience. The technology was incredibly innovative and the value proposition for the potential customers was great. This was because the data analytics could provide information about the distribution of products based on local demand. This would significantly enhance the efficiency of marketing the right products to the right region at the right time.

The company raised about \$5 million in initial capital, and they installed prototype display units in over twenty malls. There are over three thousand malls across the U.S., and this was our initial beta launch to figure out all the operational functions. The team was aggressive and could reach several strategic agreements with a number of mall-owning companies. The malls would provide space for the units, but the company had to bear all the expenses for installing the units. The malls would then be compensated through a revenue sharing model.

These display units were mighty expensive, and the manufacturers were not eager to give the company any credit. The company was hoping the manufacturing cost of the display units would come down once they started ordering a larger number of units. I started realizing that the growth of the company would require a significant amount of capital which worried me from the beginning. The revenue from the advertisers such as Coca Cola, Pepsi, major fashion and cosmetics manufactures, and other consumer product distributors would not happen unless the company had display units installed and working in at least a few hundred malls.

The management team recognized that, in order to accomplish the projected growth, the company would have to raise additional capital to purchase the required number of display units and get them installed in malls across the country. This model is not that different from Starbucks starting new shops in different locations. The cost of starting a new location is a capital investment, but the cost for Starbucks was comparatively less than the capital required for a new display at a new mall. The company had done detailed cost analysis and was confident that the revenue generated from the advertisements would pay for the local operational expenses and pay off the capital expense by amortizing it over a reasonable period of time. Theoretically, this would generate a meaningful profit.

The company's cost and cash flow analysis were done extensively with lessons learned from Starbucks, McDonald's, and other multi-location enterprises. The company had a few concerns in addition to the capital requirement problems. First, they had to reach agreements with mall owners to get access to their properties to install the display units in the most

beneficial locations. They signed agreements with a few mall-owning companies which operated about a thousand malls. Then they had to reach national agreements with various advertising agencies through which companies placed their advertisements. The company was making progress on this, but many of the agreements required the company to engage in a global agreement that required a minimum of fifty to a hundred malls installed with the display units.

The company did reach agreements with a few sponsors and started generating revenue from the twenty or so locations where the display units were placed. Initially, the revenue and the cash flow model were similar to the estimated projection. But it was clear that the revenue from the limited operations would not be sufficient to make more investments in the display units for new locations. As a form of non-monetary investment, the company partnered up with a number of display unit manufacturers by providing the units without the cost in return for a share of the revenue. The discussion with the manufacturers was progressing, and at the same time, the company started to discuss the next round of capital investment with a number of venture firms so that more display units could be purchased.

Unfortunately, this was happening around 2008, and the U.S. economy was in a free fall due to the major banking and mortgage crises. Indirectly, this impacted the company's ability to reach agreements with the display manufacturers as well as reaching any meaningful terms with the venture firms. It was then clear to the management that it would be difficult to take it forward, and the company had to abandon operations and close down.

This was a learning experience for me, and it confirmed my belief that I should not engage in a business that requires large capital to grow.



AMAZING HITS

Back in the early 2000s, the music industry was booming. The emergence of popular artists and quality music made the industry a major attraction. This is still in the early stages of the Internet and the available bandwidth was not conducive for downloading heavy files. It would take a considerable amount of time to download a video clip or a movie. In the back of my mind, I knew that the download time would shorten in no time and people would be able to stream movies and other video content. As I have predicted, the content delivery companies have become extremely successful. I would say we were a few years ahead of our time. Look at Netflix, Disney, Amazon Prime Video, Apple, and other highly successful content delivering companies.

However, the Internet created Napster and opened the door for intellectual property theft which largely affected the music industry. Napster was practically stealing music against the interest of artists, producers, and related organizations. There were protests against such thefts and organizations were engaged in activities to stop them.

I remember sitting with a few people who had extensive knowledge about the music industry, one of which was from Fox Studios at the time. We came up with the idea of Amazing Hits, and then we immediately put together a team to work on

the project. Amazing Hits was an online subscription-based music platform where people can go and either stream and/or purchase any music or music video they want. This would greatly reduce the risk of hackers stealing music online and save the industry a good amount of money.

The technology we used for this platform is similar to the one I used in developing *Stamps.com*. I had convinced myself that in the future, all music and video would be distributed online either by downloading and locally storing the content or streaming the content. This was my prediction and I wanted to prepare and develop the suitable technology and business model to leverage this prediction and future trend. Obviously, my prediction was correct, but that didn't mean I had it all figured out...

Back then, this idea was relatively new and unexplored. So, it required a great deal of information gathering and convincing for bigwigs in the music industry. I was committed to raising funds for this enterprise, but I needed a lot of things to be established before doing so. We applied due diligence and made contact with some key players in the music industry in a bid to persuade them to invest their music, artists, and brands in the venture. It wasn't long before we encountered some serious challenges.

First, we discovered that many of the music labels were unwilling to commit to the idea because of the prevailing model of selling music that existed at the time. The method was characterized by the fact that most albums sold because of a one hit song (in rare cases two or more songs); this hit song is sandwiched in the album. So, in order for producers to sell a complete album, they had to merge many of the

unpopular songs with one or two popular ones. This strategy worked like magic for most music labels.

Now, looking at our proposal, most of the players felt it would be counterproductive for their album sale in general. We, on the other hand, would be offering people the opportunity to buy only songs which they considered worthy of being bought, which meant that most unpopular songs would hardly sell at all. This, for them, would be bad for business.

So, after I sat with a number of key music tycoons in meetings that took countless hours, I realized that many of them were willing to follow the lead of just about any of their counterparts who would take the first step, but they were rather unwilling to be the first to leap. As a result, we only managed to get a few hundred thousand songs from various labels, all of which were nothing close to being in the hit category.

After many unsuccessful attempts at trying to make these music labels see the value of our idea, we were forced to abandon Amazing Hits. A few years down the line, though, Apple came up with a similar online business model of streaming and selling music online, and they went on to open the market for many other subscription-based online streaming platforms. Unfortunately, we were a couple of years ahead. If we had waited, we could have been successful. We did not have the sufficient capital to sustain the waiting period. So, we decided to move on.

This was a good learning experience. We met a number of senior executives in the entertainment industry, and I have maintained ongoing relationships with some of them.



STANFORD SEED TRANSFORMATION

The Stanford Seed Transformation Program is a leadership program at the Stanford University School of Business designed to equip company founders and executives in Africa and India with the skills, capabilities, and knowledge to help with company transformations. By working with industry leaders and experts they can help transform companies to grow faster, create valuable local, regional and global network, and be able to use the current state of the art management tools in business. As a result of such endeavors, they can then enable transforming the lives of employees, customers, suppliers, and communities. The Seed Transformation Program believes that business is one of the most powerful methods of change for developing economies to greater prosperity, wealth creation, employment, and economic advancement.

This program has been recruiting a select group of leaders in the business world who have experience in starting, building, growing, and operating companies to a group of Seed Consultants who function in any capacity such as, including but not limited to, advisors, mentors, and project leaders to achieve the advancement of companies in a number of counties in Africa and India.

Seed Consultants would work remotely with Seed Transformation Program companies lending their specific skills, expertise, and experiences in responding to challenges in various types of business conditions.

In the current situation, many companies are experiencing a number of challenges which were not anticipated. Seed

companies have benefitted from the expertise of Seed Consultants as they help to navigate the various challenges and opportunities presented by the global pandemic that started wreaking havoc at the end of the year 2019. Generally, Seed Consultants develop customized and innovative business solutions based on their experiences to address the specific needs of the Seed Transformation Program companies.

Recently, I have been recruited to become a Seed Consultant, and I consider this a great opportunity to give back to the society at large in a small way by sharing my experiences in various aspects of my professional skills to benefit a few companies. I hope this can help grow the companies and indirectly help the communities where the companies are located. I also look at this as an opportunity to widen my network, meet business leaders in new areas, get exposure to different fields of businesses, and become familiar with different cultural and traditional aspects of running businesses.

I have been blessed to always learn something new whenever I meet with a new person. This knowledge is obtained, not only from professional people, but also from practically anyone. I would like to give an example of one instance to illustrate this learning opportunity. I have been periodically invited to give guest lectures at a number of universities. During my lectures, it is not unusual for students to ask questions that are so intellectually challenging that I have to do considerable research in order to address their questions. In the process, I end up learning new information. This also happens even in fourth or fifth grade classrooms when students come up with questions that require a lot of thinking and detailed research. This has helped me to appreciate that everyone can contribute to my quest for learning.

My recent relationship with the Stanford Seed Transformation Program has been very exciting, and I am in the process of connecting with some wonderful, new people in the business world. Over the years, I have always admired the innovation and creativity demonstrated by Stanford University, and even though I did not have the benefit of studying at Stanford, I had the good fortune of hiring a number of senior management personnel for the companies I have started who have studied at Stanford.



GDS TECHNOLOGIES

I have learned from my experience at Envestnet, that it is easier to start a company in the U.S. and make it grow if you have a technology branch in India. GDS Technologies Pvt. Ltd was created to provide technology support to U.S.-based companies and companies in other parts of the world. Some of the senior members of the Envestnet office in India came to me and sought my advice because they were interested in working at a smaller start-up company to explore new ventures and create new products.

I told them about GDS and said that they would be welcome to join the company to explore new ideas, but I also told them that new ventures would be filled with challenges, and they should be ready to work much harder than they were used to. A few of them joined the company and were happy to face the challenges. I have decided to fund the venture with two objectives. The first was to develop a relationship with a few offshore companies to provide professional services to them in the area of the state-of-the-art information technology.

Primarily, the goal is to develop new software platforms and continue to operate and maintain them. The second objective was to use this company as an incubator for new innovative products. If the product was developed in concept and a test version was fully implemented and launched, it would be ready to spin off into a new company. That company could market the newly developed product and grow the new company.

The GDS company had a few customers initially. Soon after, a new company in the healthcare space called Second Opinion Expert (SOE) was started in the U.S. by myself and a couple of my friends. I will be discussing the details of SOE in another section. However, SOE needed a technology partner in India to develop its technology platform and at the same time acquire some operational support. GDS became a strategic partner to SOE and has been providing all the research and development functions, support in the areas of data storage, cloud platform maintenance, customer support functions, and all the interfaces with the marketing teams in the U.S. and all the support of the business development functions in the U.S.

Since SOE is in the healthcare space, it is important to secure the health-related data of patients. Under current U.S. laws, all patient data needs to be secured so that the technology system meets the HIPAA regulations. The **Health Insurance Portability and Accountability Act of 1996 (HIPAA)** was enacted by the U.S. congress and signed into law. It was created primarily to modernize the flow of healthcare information, stipulate how personally identifiable information maintained by the healthcare and healthcare insurance industries should be protected from fraud and theft, and address limitations on healthcare insurance coverage. The platform, developed by GDS, is a telemedicine platform which incorporated artificial

intelligence tools to provide the best healthcare services to SOE's customers. The original design of the platform was based on the technology developed by me, and a U.S. patent has been issued to me for the innovative architecture of the telemedicine platform. GDS took the architecture and developed the actual operational platform and launched the system. The platform has been used by thousands of users to provide healthcare services, and SOE is growing in many related areas. GDS has been providing the needed support in all areas of SOE expansion.

GDS has also developed a software platform and an app for both IOS and Android phones for a Canadian company called House Calls Now. The primary purpose of this platform is to help a customer locate a nearby physician and request a house call. The software alerts the physician to the request, and if the physician accepts the request, he can travel to the patient's location as shown in the app. When the medical examination is completed, he can use the app to record the findings and prescribe medication or order diagnostic tests. The app also allows the physician to bill for the services rendered, and it makes administrative functions very simple.

The software can be used by other healthcare service providers such as visiting nurses, visiting physical therapists, phlebotomists for taking blood samples for blood tests, and other healthcare providers. A similar software has been developed for coronavirus testing to take test samples from patients. In all these cases, GDS manages all the background functions remotely, and all the administrative support to the parties involved.

There are many other professional service activities that GDS continues to do in various areas of digital technology with many companies in India and abroad. The relationship has been an extension of the other companies, primarily in technology areas.

The second goal of GDS has been functioning as an incubator for some innovative products. They have been working on three such products. The first two products are in the financial services area, and the third one is in the social media and virtual marketplace area.

The first product is in the financial services area with a slight modification to currently existing credit cards. It is a digital wallet for consumers to use with a significant economic advantage. Most people get credit cards based on their credit report and credit score. The higher the score, the better a borrower looks to potential lenders.

GDS is currently testing this new product which will be significantly better than current credit cards for most consumers. The consumers will not be judged based on their FICO score. The technology is being developed and is in the early phase of validation. A U.S. patent application will be filed for this new innovation. Once it is fully validated, it will be ready to spin off into a new company for full development and marketing. GDS is currently working with a few management personnel to spin off this new product into a new company and will always be interested in talking to enterprising individuals who would like to participate in this very exciting venture. An interested partner may directly contact me or GDS to have a discussion about their potential participation.

The second product is in the investment technology space and currently developing under the incubator program. This is called Robo-Advisor Tools. A robo-advisor is a financial advisor that uses an investment program, an algorithm, to automatically select investments for an investor. Generally, robo-advisors are more accurately described as automated investment-management tools. The product being developed at GDS is not a full-blown robo-advisor which provides broad based investment choices based on one's risk tolerances. Instead, this product provides advice in one particular area of investment. If it is done properly, this tool will guarantee a reasonable rate of return with practically no risk. I cannot describe the exact nature of this tool because of the need to protect the proprietary nature of the product until it is fully developed and launched. We are also planning to apply for a U.S. patent to protect the intellectual property of the innovation.

GDS is currently working with a few management personnel to spin off this new product into a new company for full development and marketing, once it is fully validated. We are also interested in talking to enterprising individuals who would like to join and participate in this new exciting venture, who may contact me directly or GDS to have a discussion about their potential participation.

The third product in the incubator program is in the social media and virtual marketplace area. A test product has been developed and launched for a limited testing process. This product has already spun off into another new company in the U.S. called Frientap, Inc. An excellent management team has been put together and they are in the process of developing the marketable product and getting ready for the public

launch. I will have a separate section on Frientap about the details of the product and the vision of the company



“INNOVATION” ENDEAVORS

While I was serving on the board of Envestnet, the company which I have cofounded many years ago, we had a sizable operation with over 300 employees in India, and the number of employees was growing rapidly. The company was leasing three different office buildings to house the employees, and there was a discussion among the board that it would be good to have its headquarters in Trivandrum. The company originally thought that they should own a building suitable for them, and they put a team together to investigate the feasibility of such an idea. The company wanted me to work with the team and see how this building project could be successfully completed. During the investigation, it was determined that the ownership of a building by a foreign company in India would be complicated. The Indian government approval process would be an arduous task; even after spending a considerable amount of time, the government might deny a foreign building project. At this point, I felt somewhat discouraged, but still optimistic.

When the team’s finding was reported to the board, I suggested to the board that I had a solution to the problem. I told them that I could create an Indian company without any ownership by Envestnet, and the new Indian company would construct a building to Envestnet’s specifications without any capital investment from Envestnet. The new company could then lease space to Envestnet. I also volunteered to step outside

of the board because of any potential conflict of interest. The board discussed this suggestion and agreed it was a good idea. They would go ahead with the proposal. They also thought that there was no need for me to step down from the board. But I decided to step down because it would be easier for me to have the freedom to be independent from Envestnet to manage the new company.

I brought together a team of excellent management personnel in India and formed the company, Innovation Endeavors Pvt. Ltd. Originally, the company's main mission was to build the building for Envestnet, but the management team came up with much broader goals for the company.

They recognized that the pace of technology, the speed of business transformations, and the rate of change in end-user expectations were creating new demands on industries worldwide. Businesses are constantly looking for new alternatives, and technology convergence in the IT-driven industry is accelerating. They were of the opinion that today's technology and infrastructure must be able to predict change before it happens and respond quickly. In short, the current technology and infrastructure models must be ready for a digital future. The new management team boldly put together a vision for the new company with the belief that it is only through innovation that we can bring about creative transformation. More radical and transformational than improvement, innovation requires out-of-the-box thinking. At Innovation Endeavors, they re-imagine technology and infrastructure together as a transformational force that helps organizations adapt to change at a faster rate.

The first task for the company was to identify and acquire the right piece of property so that they could start planning the construction of the building. The site selection from the available parcels of property in the heart of Trivandrum was a difficult task. Whatever site the team selected, it had to be approved by the Envestnet management in the U.S. as well as the management in Trivandrum. Many properties were pitched to both local management and the U.S. management. Surprisingly, this became a major chore because it was hard to please both the U.S. management and the local management. After much back-and-forth with the U.S. management and the local management, the team finally identified a parcel of property on which they could start planning to build. It appeared as though everything was finally going according to plan.

As I had not participated directly in any building plans in India prior to this project, I was not familiar with the administrative and bureaucratic problems one has to overcome to finish the project. I did not know how much trouble one has to go through to get all the permits and formalities in order to get the construction completed.

When there was consensus among all the parties involved, the next problem was getting agreement from the parties about the design and architecture of the building. The team had to go through a number of iterations to finally get approval from everyone. The next problem was the acquisition of the property where the construction would be done. At the time, the owner of the property was not willing to sell the property. At first, I did not know what to do, but I would figure it out eventually.

The Innovation management tried their best to convince the owner to sell the property to the company. But the owner refused to sell. Then I came up with an idea that the owner and Innovation develop a joint venture agreement where the owner would continue to own the property, and Innovation would have a long-term right to lease the property on behalf of any potential tenants until Innovation terminated the rights. The owner was receptive to that concept, and we reached an agreement. The terms of the agreement were beneficial to both parties, and Innovation agreed to advance all the costs related to the construction of the building. All of the advance payments would be paid off through the future rental income from the property. This relieved any cash burden for the owner towards the construction of the building.

The next major problem was getting all the required permits from the various governmental agencies to start the construction project. This is when I started to understand how difficult it is to undertake such an enterprise. The Innovation management personnel were influential, and they had high level contacts in the government, but things still couldn't happen unless the company was ready to bribe the right people at the right time. The management personnel consulted with me about the difficulties and informed me that the practice in India was that permits could only be issued if the right people were compensated unofficially. This was the cost of doing business there.

I was against such a practice, but I remembered an experience I had many years ago. We owned a few properties in India, and a few of them were condominiums where we would stay when we visited. These were not rented to anyone. My wife's uncle used to take care of the property when we were not in

India. He took responsibility to pay the property tax, electricity bills, or any other maintenance costs and we would reimburse him for all the expenses. Many years ago, we were visiting India and during one of our visits to Trivandrum where one of our apartments was located, my wife's uncle asked whether I would like to go with him to the city Corporation's office to make the property tax payment. A Corporation's office is where government-related documents and fees are processed and permits acquired. In those days, all payments had to be made in person, though I believe things have changed now.

As we reached the Corporation's office parking lot, my wife's uncle told me that someone would come out to our car and my uncle would give him an envelope with some money. This would make it easy when we arrived at the Corporation's office. My wife's uncle could pay the property tax without any difficulty, and the tax receipt would be ready immediately. And then I witnessed how it was actually happening...

As we parked the car, a gentleman approached us, and my wife's uncle gave him an envelope. He took the envelope and left without saying much. I asked my wife's uncle if we had just paid a bribe so that they would accept our tax payment. I told him that it seemed odd to have to bribe someone just to make a payment. He claimed that that was a common practice, and if we did not make the special payment, when it's our turn to make the tax payment they would think of reasons not to get the job done and we would not be able to make the tax payment. It would result in penalties and other potential problems. Therefore, he said it is much easier to pay the bribe and move on. Even though I was totally against the concept, I agreed with him to make our life a little easier.

When the Innovation management suggested that we had to include this special cost to expedite the governmental approval process with our true cost of construction, I remembered this property tax payment experience and decided to go along with them. In the U.S., I have personally never faced any such experience to get an approval or government permits. However, I have heard that at the top of the U.S. government, major political decisions are made by government officials for the benefit of people contributing to such politicians, but I have not personally experienced such situations. My feeling is that corruption starts from the bottom in India whereas corruption in the U.S. tends to start from the top.

Speaking of corruption, I had two more interesting experiences in India I would like to share. The first one was during this building project. Since the Innovation management had been generous with my approval, we were able to complete the building faster than expected. Since the building was completed, and all the government people on this project were very friendly to the Innovation team, the team decided to schedule a date for the inauguration of the building. The planning had to be done in advance because the senior management of the Envestnet U.S. would be visiting India to participate in the inauguration function and they needed sufficient time to plan their travel to India. The date was set, and all the arrangements were made. The last step for the team was to get an occupancy certificate. This certificate will only be issued if all the government departments and agencies responsible for safety, fire, all the various building codes related to structure, ventilation and other details, and parking availability have officially independently certified that all the requirements have been met and completed.

The Innovation team was notified that the occupancy certificate had been issued and therefore the major obstacle had been overcome. There was one last step to be done before the power and water would be turned on. The last step was to pay the first year of property tax. I was planning to attend the inauguration function. Due to some conflict in my schedule, I could not travel to India and participate. However, I was monitoring the activities from the U.S. through frequent communications with the Innovation team in India.

The day after the occupancy certificate was issued, and two days prior to the inauguration function, I got a call from a senior Innovation team member late at night, which was mid-morning India time, saying nervously that there was a major problem. I was not expecting such a call. I asked him what had happened. He told me that they went to make the property tax payment to the Corporation's office in the city. The tax payment office was next door to the office from where the occupancy certificate was issued. Generally, the tax payment function was just perfunctory. But the problem was when they went to make the payment, they found out that the file containing all the information about the newly constructed building was missing. They also went and searched the office next door to the tax payment office but there was no sign of the file there either. They told our team that the file had been transported to the tax payment office because their function was already completed. I started to suspect that someone was trying to take advantage of us.

I immediately recognized that this was a last-minute ploy to get an additional bribe to find the file. Because they knew that if they did not find the file, Innovation could not have made the tax payment, and without making the payment, the

building would not get the official connection for electricity and water. Without water and power, the inauguration could not have taken place. The person on the phone asked me what they should do. I had heard previously about files missing from government offices, but I had never experienced this kind of problem personally. Because of the urgency of the situation, I told the person on the phone that they should go ahead and spread a rumor among the city Corporation's staff that Innovation would pay so much money to the person who could locate and find the missing file by the end of the day. If they could not find it, they would go through official channels, however much time it would take, and we would cancel the inauguration function.

The person on the phone told me that they were thinking the same thing, but they wanted my opinion before doing that. In the morning, I got the call from the same person, and he told me that they found the file before the end of the day and the reward money was paid. The tax was paid, and they were going forward with the inauguration. I was relieved but I knew this would happen.

My second experience with corruption in India occurred a few years later. We were building a house in Tamil Nadu where my wife had inherited a property from her father. We had a great general contractor, and he took the responsibility of building the house. I was managing remotely from the U.S., and my responsibility was primarily supervising the activities and sending the money as the contractor needed. The building was completed, and he did a superb job. It is a beautiful farmhouse with all the amenities, great landscaping, and about 7000 sq ft of living space. Once the house was completed, we went to India and had a move-in celebration with a number of family

and friends. However, the electricity for the house was provided by a temporary connection for construction purposes, and the permanent electricity connection would be available only after the city provided a TC number for the house indicating that everything was completed properly. We did not have the TC number allotted to the house by the city when we had the move-in celebration. I was under the impression that this TC number allotment by the city was an automatic process, and I told one of my wife's cousins, Sree, who was helping us to manage the property while we were away, to get that function completed. He said he would.

We came back to the U.S., and during one of my conversations with Sree, he told me that he had been to the local city office a number of times and they were terribly uncooperative. They would not do anything and would not say whether they would issue the TC or not. He said it was frustrating for him, and he was not sure what to do. Since there was no urgency, I did not worry about it and told him that we would take care of it when we visited India next time.

We went to India a few months after our conversation, and Sree told me that the city that would be responsible for issuing the TC number for our house had a city council. The president of the city council was a woman, and her husband was known to Sree's brother Chandran and he could arrange a meeting with that gentleman. I was hoping we might be able to accomplish what we wanted. I told him that would be great. Chandran arranged a meeting with that gentleman in an apartment at a remote location from our house. All of us, myself, my wife, Sree, and Chandran went to his apartment and there we met him, an elderly gentleman. There were about four others who I believe were working for the local government responsible

for housing and related activities. This gentleman was also a local politician. They were very cordial to us, and we discussed a number of topics but not about my getting the TC number for the house. From the discussion, I figured out that he was practically managing his wife's activities, and she was only a figure head.

After the meeting, we were ready to leave and said goodbye, but then the gentleman called Chandran and asked him whether he could stay for a few minutes. Chandran remained there, and we waited for him in the car. After about fifteen minutes, Chandran came and told us that the gentleman could get the TC number completed the next day but there would be some expenses. He would like us to pay a significantly large amount. When Chandran heard the amount, he was surprised and recommended that we don't pay so much even though we would probably have gotten what we wanted. I told Chandran that we should pay because I did not have the luxury of spending time going around to the government bureaucracies. I told him, let's see what happens after the payment and then we can worry about it. I authorized Chandran to pay the requested amount that day. Obviously, there was no receipt or acknowledgment for the payment. I just had to wait and hope that paying the bribe would work.

We went back to Trivandrum that night. The next morning, I got a call from Sree who said that he heard from our caretaker that a large crew of people with survey equipment and other tools were at the house, and they told the caretaker that they were there to inspect the house for issuing the TC number. I was not surprised, and I realized they could be efficient for the right amount of money. I told Sree that he should stay in touch with them and see how it turned out. Sree was really

surprised to see such a prompt response from the city. Later that afternoon, Sree again called me and said he had been talking to them, and they wanted to know whether we wanted 3 TC numbers, one for the upper story of the house, one for the lower story, and the third one for the detached parking garage. I told Sree that two would be sufficient, one for the house with two floors and the other one for the detached garage. By the end of the day, we had both official TC numbers and proper documentation was issued to us. I just wanted to share how efficient yet corrupt the system works in most parts of India.

I have a feeling that the corruption in India, especially in dealing with the government from top to bottom, is because of the low compensation they receive from the government. In order to make their quality of life comparable to their peers, they need to supplement their income through corruption.

Innovation Endeavors has been very successful in their growth. They are currently concentrating on three areas: Infrastructure, healthcare applications, and technology applications in agro-business. In the infrastructure area, they are involved in developing an office space complex that will help more businesses to grow. Innovation is also focusing on providing infrastructure and infrastructure services including conceiving, designing, planning, investing, constructing, developing, operating, and managing IT and technology-based industries.

In the healthcare application space, they have a great strategic relationship with one of the major hospitals in Kerala. The KIMS (Kerala Institute of Medical Sciences) Global is a healthcare organization headquartered in Trivandrum with multi-specialty hospitals and health care centers in South India and the Middle East. KIMS Global started off as KIMS

Hospital, a multi-specialty hospital in Trivandrum, Kerala. Innovation has developed and implemented a real-time clinical sample tracking system for KIMS hospital using IoT platform. IoT platform refers to software components which provide interface between sensors and applications. The system enables improved employee efficiency and patient experience through optimized process control. Moreover, the system helped to save time on manual verification and checking sample movement. Currently, Innovation and KIMS are working together to scale up the capabilities, and market to hospitals in the region and abroad.

Developing technology solutions in agro-businesses is the third area Innovation is engaged in. Specifically, they have developed relations with major almond farms in California and are working on developing similar farms and nurseries in India. The goal is to provide advanced technology solutions to the Indian farms and nurseries in collaborations with U.S. farms.



FRIENTAP

Frientap is a new startup that leverages social media to enable a shopping experience through e-commerce. Consumers do a search prior to e-commerce transactions. Most search results are not highly reliable. However, consumers are more influenced by their friends and family when making their purchase decisions. The main goal of Frientap is to provide a channel for trusted review and recommendations for products and provide a platform to engage online transactions. The Frientap platform and its mobile application incorporate

design features that humanize the shopping experience by applying technology that has been commonly found in applications of gaming, social media, or entertainment. Another objective of Frientap is to develop a platform for small and micro-businesses to reach new customers through online recommendations.

The three most important factors in a consumer's buying behavior are friends, family, and their mobile phone. The app is designed so that anyone can post pictures or videos about their favorite items such as shoes, clothes, or anything interesting. They would make these reviews available to their close network. The network could react in order to ask appropriate questions. The consumer can look for a specific item and ask questions about the item on the person's network to get opinions and suggestions. Similarly, one can answer questions from one's network based on personal experience or knowledge. The person can also provide a link about where the item was purchased to make it easy for someone in the network to purchase the item. Frientap also creates a marketplace for selling and buying used goods among friends in the network. It also provides a platform for a marketplace for small businesses to its existing and newly acquired customers.

In the early phase of Frientap, it was a platform concentrated specifically on the specialty foods and ethnic foods market by providing consumers a platform to review, discuss, share, and recommend their favorite food, favorite retailers, recipes, and more. Frientap takes advantage of the state-of-the-art technology, and it also integrates artificial intelligence tools into its platform. It is in the process of applying for a few patents for its innovative technology.

This start-up has an excellent management team, and as I have said many times, the success of any venture depends on the hard work, vision, and innovation of the management team. The platform will have combined features of major technology companies such as Google and Yelp which are primarily review websites without any social network features; Facebook and TikTok, which are primarily social media networks without opportunities for reviews or personal feedback; WhatsApp and iMessage which are primarily for individual conversations without possibilities of content; and affiliate market apps such as Picker and Indi which provide content but not any other features. Frientap has incorporated all the essential elements for creating a marketplace to accomplish a well-informed e-commerce transaction for a consumer. This would be the major distinguishing aspect of the Frientap app.

Frientap aims to create a virtual marketplace that provides a pleasant shopping experience without anyone leaving their homes. I remember when we were traveling in Europe in 2019, my wife Rajee and her sister, Usha, had an enjoyable time shopping for shoes, and I went along with them. We must have gone to over thirty or so women's fashion shoe shops. Never in my life had I been to so many shoe shops. They were not buying shoes at each store, but they were simply enjoying window shopping and seeing and comparing a wide variety of shoes. I did not even know there were that many kinds of shoes! Rajee was not particularly interested in high heel shoes because she would not be able to walk comfortably in them. She mostly wears Nike walking shoes for comfort; but Usha was more interested in fashion shoes. Even though Rajee did not purchase a pair of shoes herself, Usha was able to take home a couple of pairs, and I ended up buying a leather wallet for myself because mine was pretty old.

This experience could be repeated once Frientap launches its virtual marketplace app without leaving home. People can get the satisfaction of shopping together with their family and friends even though they live far apart. Frientap has the technology, but it has not been fully developed and tested. This, in my opinion, would revolutionize the shopping experience for people around the world.



SECOND OPINION EXPERT

As most of my family members are physicians, I have always thought about ways of improving healthcare services by adopting new technology especially with the use of digital technology. My wife, my son, and all of my siblings are physicians, and I have once counted that there are about twenty-seven physicians among my close family members.

About seven years ago, before the wide adoption of digital technology, I met with a couple of friends of mine for lunch, Tom Peter and Ash Dave. Tom was a distinguished professor of Cardiology at Cedars Sinai Medical Center in Los Angeles, and he was also the head of the department of Electro Physiology (EP) at the medical center. Moreover, he is one of the most respected and well-known EP specialists in the world. Ash is an Information Technology specialist, and he was associated with Cedars Sinai as well as their Chief Information Officer. During our conversation, the topic of the potential use of technology in medicine came up. Technology has been a growing area in medicine in the creation of new devices, diagnostic equipment, and surgical instruments including robotic surgery equipment; and even for developing various types of therapeutics. We

started brainstorming how we could play a role in this space, and together we came up with the idea of establishing a start-up in healthcare services.

The thought of providing medical second opinions by specialists using a digital technology platform was interesting to all of us. At that time, most second opinions were provided by physicians working in major university hospitals. The records have to be sent to the doctors who would review in order to determine a second opinion. This could take weeks to accomplish. We decided to create a platform that the patient and physician would have joint access to. The platform, and the whole process of requesting a second opinion could potentially be done much faster. In some cases, this could be lifesaving.

I took the responsibility of formally putting together the company because I had already done that a number of times. We formed two business entities. The first one is a conventional C corporation, SOE and the second one is Second Opinion Medical Group, Inc. There is an agreement between the two corporations that the medical services are provided by the physicians through the professional corporation by utilizing the technology platform developed by SOE and all the administrative management is provided by SOE as well.

The task of identifying and validating the credentials of all the physicians that would make up the panel of physicians, became a major task. The SOE management team was very particular in selecting the best doctors who are authorities in their specialties. The management identified twenty-nine specialties in both medical and surgical fields, and after proper credentialing, the panel currently has over 400 specialists who

are providing second opinions and other consultation services to patients from all over the world.

The company developed the new technology, and the United States Patent and Trademark Office issued U.S. Patent 10,403,395 entitled “Method and Apparatus for Generating Objective Medical Second Medical Opinion.” The patent covers the company’s proprietary system that provides patients with objective medical second opinions from licensed physicians through the Internet. The online technology developed by the company increases the quality and efficiency of healthcare delivery, improves healthcare access, and empowers patients to make more informed medical decisions. The HIPAA-compliant patented platform leverages recent advancements in information technology and electronic medical record systems enabling the company to provide fast, reliable, and secure online medical opinions. The system provides patients greater peace of mind because they know that they have a medical expert’s perspective for their medical decisions.

SOE offers exclusive, one-on-one, online, professional diagnostic evaluations to patients across the United States and around the globe. SOE also offers attractive plans for utilizing second opinions as an employee benefit, which helps hold down rising health care premiums. The skilled panel is comprised of hundreds of physician specialists with exemplary academic credentials as well as significant patient care experience in all major diagnostic specialties and sub-specialties. Utilizing our patented processing technology and databases, our physicians can more efficiently and effectively review a patient’s prior tests and symptoms when writing a second opinion report. Thereafter, the physician may also interact with the patient through a secure video link allowing

for meaningful and instructive face-to-face counseling and further treatment advice. The company's technology is available for use here in the U.S. and worldwide. The company's patent is also available to be licensed and can be customized for government, institutional, or enterprise use.

The system enables the user to upload all available medical records. It then generates a current user medical status report in a comprehensive form with proper hyperlinks to the appropriate medical records including diagnostic images and results of other diagnostic procedures. Once the information is uploaded, it can be analyzed by a physician who can make appropriate recommendations. The system generates a second opinion consultant report by processing an evidence-based diagnosis method incorporated into the system by utilizing all the data relevant to the user that is available to the system.

SOE's primary objective has been to help people make the best possible health care decisions through effective use of expert medical opinions and verifications. SOE also claims that second opinions are a proven strategy to improve health care and reduce costs. SOE HealthCheck is their proprietary platform for sharing medical records and obtaining second opinions online. They are currently prioritizing three marketing and delivery strategies: 1) International second opinions – to address the ever-increasing global demand for second opinions from American medical experts; 2) Second opinions as a corporate employee benefit – second opinions increase employee health and morale while lowering the corporate cost of insurance; and 3) Direct-to-consumer second opinions.

SOE Verified is another program SOE has launched due to COVID-19. This provides doctor prescribed and verified lab

testing. Our current emphasis is on a corporate strategy, in partnership with a nationwide phlebotomy provider, to do on-site COVID-19 antibody testing to assist companies in getting their employees back into the workplace in the safest way possible. SOE Independent Medical Evaluation provides companies and organizations with objective medical opinions for use in employee relations and company compliance related to FMLA, Disability, and Workers' Compensation claims.

SOE has also developed a platform, XperTeleRadiology™ which is a HIPAA-compliant cloud-based platform that provides an extensive set of powerful tools for monitoring, managing, reporting, and distribution of radiology studies. The fully customizable platform delivers superior performance, flexibility, and reliability combined with ease of use and access to multi-modality patient imaging datasets – anytime, anywhere. With a specific focus on revolutionizing the practice for cardio and vascular specialists, the XperTeleCardio on-the-go offers and supports ECG and Holter monitoring and remote interpretation and cardiac data management, ultimately ensuring timely and improved patient care.

One of the other services that SOE provides is Post-Acute Nursing. SOE provides assistance to patients and their families by connecting hospitals with congregate care facilities so that the best solution can be found for each patient's specific needs.

Consumers are seeking ways to gain control of their personal medical information to their benefit. Similarly, employers are concerned about rising health care costs and maintaining, if not improving, the quality of medical care and outcomes for their employees. The keys to success for both individuals and organizations overlap in two necessary components: 1) having

easy, comprehensive access to medical records; and 2) having reliable expert advice in making medical decisions. Current methods for achieving success are dependent on outmoded and outdated approaches. Several medical providers still rely on fax machines and copiers to distribute medical records. And finding and scheduling an appointment with the right kind of medical specialist – if there even is one within a reasonable driving distance – can be daunting.

I would like to share two experiences of second opinion incidences since the company started, even though thousands of second opinions have been provided by the panel of physicians to patients all over the world. The first was a patient who had continuous shoulder pain and we will call him Larry Donovan. Larry had difficulty lifting his arm. He did all kinds of exercises to try to alleviate the pain, as he thought it was due to a muscle ache. The pain persisted, and he decided to see his regular doctor who was a family medicine specialist. The physician examined him and thought that he must have a joint problem. He suggested that Larry should see an orthopedic surgeon who specialized in shoulder problems. The orthopedic surgeon was a well-known sub-specialist in shoulder issues. Larry saw the orthopedic surgeon who did various tests including an MRI of the shoulder. The surgeon saw some problems with Larry's shoulder joint on the MRI and concluded that the problems were causing his continuous shoulder pain.

The doctor explained to Larry that there were some issues with his shoulder joint and that he needed shoulder surgery. He offered to perform the surgery and said that it was a routine procedure. The probability of any complications was minimal, but he might have to stay in the hospital for a few days after

the surgery. Soon, he should be back to normal without any further pain. Larry agreed with the doctor, and they scheduled his surgery. The procedure was completed without any problem, and Larry was discharged from the hospital earlier than expected and was pleased with his result.

There was still pain in his shoulder after he went home, and he assumed the pain would persist for a few days because of the surgery. Days and weeks passed and there was no relief to his pain. In fact, the pain started to increase. He finally realized that the surgery did not cure his problem, and he needed to do something else. Instead of going back to his family doctor or his orthopedic surgeon, Larry researched and found out about the second opinion services provided by our company. It turned out to be a game changer for him.

He decided to seek out a second opinion about his condition, and it was easy for him to interface with the company's technology platform. He provided all the information and uploaded all his diagnostic reports including his surgical reports, and all the other pertinent documents were uploaded to the system. The system takes all the information provided by the patient and creates a status report just like a physician consultation report using artificial intelligence. The system then recognizes Larry's exact problem based on his medical records. It then selects the appropriate specialist physician from the panel of who will be the best to address the problem.

The status report prepared by the system contains all the information about Larry and the conditions of the complaint along with a summary of the diagnostic information. It also provides information regarding certain diagnostic tests that were not done and how they would be helpful in making

the correct diagnosis. It also provides hyperlinks to all the uploaded documents and records which the physician can review separately. The system communicates with the physician and if they accept the case, they have to complete the second opinion document. There are two sections the physician has to complete in the summary report prepared by the system. These two sections are assessment and treatment. In the assessment section, the physician will have to identify the exact diagnosis regardless of prior diagnoses. In the treatment section, the physician provides the recommended treatment plan.

Once the document is completed, the formal second opinion is communicated to the patient, and the patient can access the report by logging into the platform. The system meets all the security requirements by the government to protect the patient's medical information.

In this case, based on the information provided by Larry, the system selected a neurologist for the second opinion instead of the orthopedic surgeon. The system recognized that, based on the data uploaded by Larry, the system identified that the shoulder pain was radiating pain from abnormalities in the patient's neck. The right physician to evaluate the problem was a neurologist, not an orthopedic surgeon. The neurologist reviewed the medical records online and suggested that the pain was probably due to disk abnormalities in the spine. To confirm the diagnosis, Larry needed another MRI of the spine in the upper neck. Based on the MRI report, a further consultation with a neurosurgeon was recommended to see if spinal surgery was necessary.

The second opinion was provided to Larry. Based on the recommendation from the neurologist, the patient had an MRI of the spine, and it revealed the upper neck disc abnormality. The patient then consulted a neurosurgeon and had the disc surgery. After the surgery, his shoulder pain was completely eliminated. This one experience shows how the second opinion service can help patients. In this particular case, the unnecessary shoulder surgery could have been avoided if he had sought a second opinion prior to shoulder surgery. Studies have shown that there are hundreds of thousands of unnecessary procedures being done in the U.S. every year, but with a high-quality second opinion from a physician, it can save time and money for the patients.

Here's another story about a friend of mine and his wife, who we will call Trevor and Meredith, respectively. Trevor and Meredith have been married for a few years when they found out that Meredith was pregnant. They were doubly happy because they were going to have twins, a boy and a girl. Meredith was having regular checkups, and everything was going well. When we would meet, Trevor would say that he was very much looking forward to the birth of their children. One day, I got a call from Trevor, and he sounded unusually worried and said that he had some bad news about his wife's pregnancy. He told me that when his wife went for a regular visit with her obstetrician on her twenty-three week checkup, they found something wrong with one of the babies. It seems they did various testing and ultrasound images, and the doctor believed that one of the babies had a problem with a blood vessel in the brain. If the vessel burst, the baby's life would be in jeopardy. It could also impact the other baby. The doctor recommended a reduction surgery to remove the baby with the blood vessel problem so that the other baby could be saved from potential harm. They

even scheduled a date for the reduction surgery. This was a very frightening development!

Trevor and Meredith were devastated to hear this assessment from the doctor. The first thought that came to me was to get a second opinion before deciding on anything. I told Trevor to consult my son, Ajay, who is a neurosurgeon. I remember Ajay saying that a utero fetal surgery could possibly repair the problem. Trevor spoke to Ajay. Ajay told him it could be possible to perform surgery on the fetus, but he said there are considerable risks in this type of procedure. Before doing anything, he should get a second opinion from a fetal specialist to make sure that the problem was real, and also to find out the risks of not doing the reduction surgery. He went through the process to get a second opinion from a fetal specialist. He and his wife were anxiously waiting for the second opinion result.

Surprisingly, the second opinion result said that both babies were fine and there was no need to do any surgery. Trevor and Meredith were momentarily relieved, but they were not sure whether the first opinion or the second opinion was right. So, they decided to get a third opinion from another fetal specialist. The third opinion agreed with the second opinion, and they cancelled the reduction surgery. The babies were born very healthy, and both are doing well.

If it hadn't been for the second opinion, the result could have been vastly different. This is another example that the use of a second opinion is advisable in any occasion if your doctor suggests any invasive procedure.

SOE also participates in certain charitable work. SOE has joined forces with the Ananda Foundation (to be discussed

in broad later in the book) and the Cloverline foundation to provide free services to veterans who do not get adequate medical help from the veterans administration (VA) healthcare services. There are many veterans who are routinely denied healthcare services from the VA for whatever reasons, and they are also denied their disability benefits by the VA because they are deemed not truly disabled. SOE has provided second opinion services to a number of veterans, and in every case where a second opinion was provided, the VA has agreed with the opinion provided by SOE physicians. The veterans were given the medical help suggested by the second opinion and their full disability benefits.

The veteran population who would benefit from such a service by SOE is quite large. The only reason SOE can provide these free services to veterans is because of the contributions from the Ananda Foundation and the Cloverline Foundation. They would welcome participation from other charitable institutions who would be supporting veterans so that SOE can expand to help a larger number of veterans.

SOE also has recently worked with organizations that help prison inmates during the COVID-19 pandemic to get them released based on medical second opinions provided by the SOE panel of physicians. SOE has been successful in helping a few female prisoners get early releases as well.

SOE's mission has been to help society at large and it has made a difference in the lives of many people. SOE has shown that the process of going to a doctor's office to have testing done before waiting for an eventual diagnosis will become obsolete because of platforms like SOE.



OPPORTUNITY ZONE INVESTMENT

A new form of investment is now available due to part of the 2017 Tax Cuts and Jobs Act to raise capital for start-up businesses located in opportunity zones.

The Tax Cuts and Jobs Act of 2017 included a new federal incentive—Opportunity Zones—meant to spur investment in undercapitalized communities. Any corporation or individual with capital gains can qualify. The program provides three tax benefits for investing unrealized capital gains in Opportunity Zones:

Temporary deferral of taxes on previously earned capital gains. Investors can place existing assets with accumulated capital gains into Opportunity Funds. Those existing capital gains are not taxed until the end of 2026 or when the asset is disposed of.

Basis step-up of previously earned capital gains invested. For capital gains placed in Opportunity Funds for at least 5 years, investors' basis on the original investment increases by 10 percent. If invested for at least 7 years, investors' basis on the original investment increases by 15 percent.

Permanent exclusion of taxable income on new gains. For investments held for at least 10 years, investors pay no taxes on any capital gains produced through their investment in Opportunity Funds (the investment vehicle that invests in Opportunity Zones).

Apart from a few “sin” businesses, Opportunity Funds can finance a broad variety of activities and projects. Funds can finance commercial and industrial real estate, housing, infrastructure, and existing or start-up businesses. For real estate projects, to qualify for Opportunity Fund financing, the investment must result in the properties being “substantially improved.”

Twelve percent of U.S. census tracts are Opportunity Zones (8,762 tracts). Governors of the 50 states and 4 territories and the mayor of Washington, DC nominated the zones, which were officially designated by the U.S. Department of the Treasury. The statute contains no provision to change which communities are classified as Opportunity Zones.

The most important question is what businesses qualify for this opportunity zone investment fund. The IRS has provided some guidelines. The most concerning issue in the previous guidance was the 50% test, which onerously stated that a business that wants to qualify for this program must derive at least 50% of its total gross income from the active conduct of the business within a qualified Opportunity Zone. The new guidance clears this large hurdle by creating four distinct tests that can be used to qualify a business under the new 50% test:

Total hours worked by employees and independent contractors within an Opportunity Zone must be at least 50% of the company’s total hours worked.

Total dollars paid to employees and independent contractors for services performed within an Opportunity Zone must be at least 50% of the company’s total dollars paid for services performed.

Both the management/operational staff and the tangible property of the business that is in the Opportunity Zone must be necessary to generate 50% of the company's gross income, or facts and circumstances.

A business can qualify under any of the four above, and “facts and circumstances” leave a lot of room for businesses to make their case to the IRS for inclusion into Opportunity Zone qualification.

My interpretation for a digital company based on the guidelines from the IRS is that the headquarters of the company must be located in the designated opportunity zone. For digital businesses, the revenue comes from all over the world and is generated by the company from its headquarters.



SPAC

A **special purpose acquisition company** or SPAC is a “blank check” shell corporation designed to take companies public without going through the traditional IPO process. As I have participated in a few very successful IPOs, I have been intrigued by the concept of SPAC, which has become more popular in recent years. In fact, in the first 9 months of 2020, U.S. SPACs raised \$41.7B – 44% of all public offerings, according to the Financial Times.

A SPAC is formed by experienced business personnel with knowledge of an industry to raise money through an initial public offering in order to buy another company. At the time of their IPOs, SPACs have no existing business operations or

even stated targets for acquisition, however, they often have considered some potential targets. Investors in SPACs can range from private equity funds to the general public. SPACs have two years to complete an acquisition, or they must return their funds to investors.

SPACs are generally formed by investors, or sponsors, with expertise in a particular industry or business sector, with the intention of pursuing deals in that area. In creating a SPAC, the founders sometimes have at least one acquisition target in mind, but they don't identify that target to avoid extensive disclosures during the IPO process. While discussing with investment bankers or other private equity investors in order to raise the capital for SPAC, the SPAC management does not initiate any discussion with potential targets. However, once it is known that the SPAC can raise the sufficient funds, a discussion with the targets will begin, primarily to reach the terms of the acquisition agreement. This is why they are called "blank check companies." IPO investors have no idea what company they will ultimately invest in. SPACs seek underwriters and institutional investors before offering shares to the public. The money SPACs raise in an IPO is placed in an interest-bearing trust account. These funds cannot be disbursed, except to complete an acquisition or to return the money to investors if the SPAC is liquidated. In some cases, some of the interest earned from the trust can be used as the SPAC's working capital. A SPAC is usually listed on one of the major stock exchanges.

Most of the time, selling to a SPAC can be an attractive option for the owners of growing companies, which are often private equity funds. First, selling to a SPAC can add up to 20% to the sale price compared to a typical private equity deal. Being

acquired by a SPAC can also offer business owners what is essentially a faster IPO process under the guidance of an experienced partner, with less worry about the swings in broader market sentiment.

SPACs offer individual investors the chance to get in on the ground floor of a potentially big stock, but they are also highly risky. In addition, early investors are relying on the sponsors' reputation in the hope of snagging a good investment. The investors have to be prepared to wait. Even after a SPAC goes public, it can take up to two years to pick and announce the target company it wants to acquire, or technically speaking, merge with the target company. Once a target for acquisition or merger is located, shareholders in the SPAC are given information about the target business with financial statements. A SPAC shareholder has three choices after a merger is proposed. They can approve the merger transaction, sell their shares on the secondary market, or veto the merger and redeem their shares.

The SPAC is usually led by an experienced management team composed of three or more members with prior private equity, mergers and acquisition, and/or operating experience. The management team of a SPAC typically receives 20% of the equity in the vehicle at the time of offering, exclusive of the value of the warrants. The equity is usually held in escrow for 2–3 years, and management agrees to purchase warrants or units from the company in a private placement immediately prior to the offering. The proceeds from this sponsor investment (usually equal to between 2 and 8% of the amount being raised in the public offering) are placed in the trust and distributed to public stockholders in the event of liquidation.

As I became more knowledgeable about SPAC, I have become interested in a business I would like to acquire. I thought I should pursue the SPAC option to see whether I would be able to deploy the SPAC avenue to acquire that business. I am not going to disclose the business here even though I had a prior, limited relationship with them, but they certainly do not know my interest in them. This is certainly a new experience for me, but I would like to share my thoughts here. One of the reasons I am interested in this process is because this would be a new business learning venture for me and would be pretty challenging as well. I have put together an excellent team of management personnel who are experienced in private equity, merger and acquisitions, experience with taking companies through IPOs, and running companies as CEO.

The company I have identified as a potential target for acquisition through SPAC has a valuation based on their recent capital infusion of \$1.4 billion. We will only initiate a discussion with them once we have an indication from our investment banking partners that we would be able to raise the required funds through SPAC. I am sure for any possible deal with the target company that we will have to offer the purchase price with a premium above their perceived current enterprise value. I know this process is going to be long, and we will have to overcome many hurdles. On the way, I hope to learn new business methods and opportunities.

I would like to share the essence of a conversation with my son, Ajay, regarding the potential acquisition of a company through the SPAC vehicle. He told me that this reminds him of a book he read when he was young. The book was by a famous American author Ernest Hemingway titled “The Old Man and the Sea.” I remember reading that book as well. When he

started talking about the book, I realized why he brought it up. Hemingway's old man has been a good fisherman throughout his life. *The Old Man and the Sea* is the story of an epic struggle between an old, seasoned fisherman and the greatest catch of his life. In this story, for eighty-four days, the old man has gone to sea and returned empty-handed. The old man believed that his unproductive streak would soon come to an end. He has been sailing close to shore, and decides to sail out farther than usual the following day. On the eighty-fifth day of his unlucky streak, the old man sailed his boat far beyond the shallow coastal waters and into the deep ocean. He prepared his lines as he always does and dropped them in the water. At noon the big fish, a marlin, takes the bait. The old man expertly hooks the fish, but he cannot pull it in. Instead, the fish begins to pull the boat.

My son correctly compared me to the old man in the story. We know how the story ends, but we do not know whether I will be able to catch the big fish. It is always interesting to have some suspense.



PROJECT SUN SHADE: A POTENTIAL SOLUTION TO GLOBAL WARMING

I have become deeply concerned about the potential devastation of many places on Earth due to global warming. With the damaging changes in the climate, it may be too late to correct the situation. The great division among politicians only makes it worse. For whatever vested interests, they do not make immediate resolutions to mitigate or slow down the potential impact of global warming. Scientists have been

warning us for some time that we have to take corrective actions soon, otherwise the negative impact can no longer be reversed. Therefore, I believe that now is the right time to use space-based technology to solve the problems related to global warming.

I am convinced that the best way to reduce global warming and avoid the possible catastrophic effects of climate change on future generations is to deploy state-of-the-art space-based technology to reduce the solar radiation effect on the planet. It is true that the quality of life for most people has significantly improved over the last hundred years because of the abundance of energy from fossil fuel, however, it has also caused a slow but gradual increase in average global temperature due to the increase in carbon dioxide in the atmosphere, thus creating a greenhouse effect in the atmosphere which has caused temperatures to rise. Most countries, specifically developed countries, have recognized the potential problem and are working together to reduce the carbon content in the atmosphere. The United States has shown some skepticism and has withdrawn from the Paris Climate Accord in 2019. Fortunately, under President Biden's leadership, the U.S. rejoined the accord to tackle global warming in unity with more than 200 countries worldwide.

Moreover, those countries who have agreed to work towards implementing plans to reduce carbon dioxide in the atmosphere may not be able to meet their goals because such steps may impact their economic growth. Therefore, it is necessary to find a revolutionary solution to this problem without affecting the economic growth of the developed and developing countries. The temperature on Earth is primarily determined by solar rays and radiation. One of the possible ways to control the Earth's

temperature is to control solar radiation. By reducing solar radiation, the rise in temperatures can be slowed significantly even with the increased carbon content in the atmosphere. Several authors have suggested various means by which the solar radiation can be reduced to reverse the potential climate change crisis. I believe that the best possible solution is to use the advancement in space technology and create a space probe that can be placed in the Sun-Earth L1 Lagrangian point that is about one and half million kilometers from the Earth. Such a probe will have the orbital period of the Earth, and the probe will be always in between the line of sight between the Sun and Earth. The objective of the probe is to filter the Sun's radiation as needed to control the Earth's temperature thereby mitigating the carbon content in the atmosphere.

The space probe I am suggesting consists of relatively smaller and extremely thin panels with the thickness of a few millimeters of filters. When placed in the right location it can be remotely manipulated to control the solar radiation. Like LEGO blocks or modular building blocks, the space probe will come in separate pieces that can be connected autonomously. Once the initial probe is placed in the right location, a series of additional launches will be required to complete the full size of the probe. It is estimated that the completed size of the probe can be about one thousand kilometers in length and width to cover the full surface of the Earth. We have most of the technology now to launch and operate such a probe, and certain further improvement in specific areas of technology could vastly reduce the total cost and the total time required to complete the mission. The program could be called Project Sun Shade.

I strongly recommend that our government put all the efforts to start and complete this mission as soon as possible. The

first step would be to form a team of eminent scientists and technology experts from NASA and the U.S. Space Command of the Air Force and headed by the U.S. Space Command General. My rationale for U.S. Space Command to be in charge of this mission is because, in my opinion, the problem we are attempting to solve is a matter of national security. As a result, the DoD should be the agency responsible for managing and accomplishing the mission. Initially, the team's charter would be three-fold. The first task is to come up with the best design for the probe, and all the necessary components to accomplish the mission. The second task is to fully evaluate the impacts on Earth by launching and operating such a probe to control solar radiation. The third task is to develop an estimated time and cost schedule and the various milestones and specific mission goals to achieve the launch of the initial probe and all the subsequent launches. Once the team's initial goals are completed and reported, a mission implementation team should be organized under the U.S. Space Command General to begin the execution of the project.

My opinion is that this proposed mission is very critical for the survival of Earth. The U.S. President, if he takes the leadership and launches such a revolutionary program, will be remembered for the rest of humanity for protecting and preserving humanity. President Kennedy is most remembered and respected for his courage and foresight to call the nation to plan and execute a manned mission to the moon and return the traveler safely before the end of the sixties. The intent for that mission was to prepare humans to travel beyond the limits of Earth's sphere. Here, however, the mission is not for any particular scientific achievement but to save humanity from total destruction.

Similarly, in 1942, President Roosevelt authorized the formation of the Manhattan Project to combine the various research efforts with the goal of weaponizing nuclear energy to end and win the second world war and save humanity. It was not clear then that an atomic bomb could be built, but this did not deter them from trying to complete their mission. The U.S. was indeed successful in building atomic bombs, and unfortunately the U.S. had to use the bombs to end the second world war.

The devastation due to climate change could be much worse than any world wars. While it is true that the cost of this mission would be significant, I believe that the return on such an investment is so valuable, that it makes the investment worthwhile. Moreover, it is possible for other nations to share in the cost of the mission based on their economic abilities.



THOUGHT PROCESS BEHIND STARTING A COMPANY

We have covered a lot of highly technical and academic topics in this section and for a good reason. I armed myself with these seminal theories in order to build my own companies, help other people build theirs, and work on several innovation projects. To wrap up this section, I am going to cover some concepts that would be beneficial to those who are interested in starting their own business ventures.

I have been a visiting faculty member for business majors and MBA students at a few universities, and I have given lectures about starting a business. I believe I'm in a position to provide some wisdom on this subject. Many students, after finishing

their studies, would join major companies, and a few of them would establish their own start-ups.

When starting a company, I look into these four fundamental aspects first and foremost: 1) Business Legal Entities; 2) Business Organizational Structure; 3) Financial Management; and 4) Challenges. As you read on, we will examine these individually in greater depth.

1) Business Legal Entities

There are different ways to legally organize a business, and it has to be done based on the type of business you are interested in. Let's start with a list of business legal entities available to you:

- Sole proprietorship
- Partnership
- Corporation

Sole proprietorship:

If a person wants to run a business as a single owner, for example a professional consultant, you can operate this business as an individual. However, I would not recommend it. There is potential for liabilities, and one should always try to limit liabilities.

Proprietorship is in an individual name. If something goes wrong, the person becomes personally liable and that is not a good way to start a business. It is important to protect yourself from possible liabilities that could affect your assets. It is

therefore crucial to create some legal tools to limit further exposure due to these liabilities.

Partnership:

Two or more people can join together and form a partnership, with varying or equal ownership among them. They can enter into a business with the partnership name. Among the partnerships there are general partnership, limited partnership, and limited liability partnership.

General partnership or regular partnership is quite similar to sole proprietorship, except there is more than one individual. In this case, liabilities are the responsibility of all the partners. If the other partners are not capable of meeting their share of the liabilities, the person who has the assets could be responsible for all the liabilities. This is more dangerous, and I would not recommend starting a business this way, especially if you are looking for real growth.

In a Limited Partnership (LP), one has one or more general partners and one or more limited partners. The general partner is responsible for managing the operations, and the limited partners have no say in the management. Because of this, the general partner is responsible for all the liabilities, and the limited partner has no exposure to any liability except to the extent of their limited partnership interest. I generally recommend forming a corporation for the general partner, and the individuals who would have been the general partners would now become shareholders of the corporation. This protects them from any form of liability. In a corporation, shareholders have no exposure to any liability. The potential creditors have to look for the assets of the corporation and

not the assets of the shareholders. However, there are theories for piercing the veil. If the corporate legal procedures are not done properly, the creditors can reach the shareholders as well. You will have a better sense of this when we discuss corporations but before that, let's talk briefly about another type of partnership.

The third kind of partnership is called Limited Liability Partnership (LLP) or sometimes referred to as Limited Liability Company (LLC). It is when all partners have limited liabilities, and each partner is not going to be liable for the misconduct or negligence of another partner. This is common in professional services such as law firms, accounting firms, and wealth and asset management firms.

Corporation:

In the United States, there are two types of corporations: Sub-chapter S corporations and C corporations. Most are C corporations. Among the C corporations, there are professional corporations, private corporations, and public corporations. The various types of organizations have both tax implications as well as potential liability implications.

In a regular corporation, if it is going to be small with a limited number of shareholders, one can elect it as a sub chapter S corporation, and there is no requirement to pay separate corporate tax. The individual shareholders can include the profits of a sub chapter S corporation in their personal income and pay only the personal tax to avoid double taxation. When the profits are distributed to the shareholders, they are liable for personal tax as well. For tax purposes, it is treated like a partnership, but it protects from potential liabilities.

Among C corporations, there are also professional corporations. Professional corporations are for professionals such as doctors, lawyers, accountants, and any other profession such that only persons in that profession can become shareholders. If there is a doctor's corporation, all the shareholders have to be doctors licensed to practice in the U.S. This means that professional corporations cannot have a public offering. This also means one cannot raise capital from the public.

All other C corporations are either private or public. There are no limitations on the number of people or who can become a shareholder. When a private corporation is taken public, it becomes a public corporation. The reporting and compliance requirements for private and public corporations vary, and public corporations are more regulated with more stringent compliance requirements. All corporations need professional legal and accounting support. Public corporations, independent audit firms, and outside legal firms provide advice for meeting all the regulatory requirements and compliance needs.

Private corporations can raise capital from private investors, generally through direct negotiation. If the corporation is planning to raise capital from the public, it has to go through an IPO, and this has to be done with proper help from the specialists to meet all the regulatory requirements. If the objective is to grow and raise capital from the public, one has to incorporate as a C corporation. It is possible to start as an LLC and then change to a C corporation when needed.

I would recommend that you consult an experienced lawyer in start-up companies to provide the proper advice in this area. However, I would also recommend being somewhat knowledgeable in the general area of how the organization

should be depending on one's plans and vision of the business before seeking help from lawyers to do the necessary formation and related documentations.

Now that you have a clearer idea of the different types of business legal entities, it's time to talk about the different types of companies.

Generally, there are two types of companies, one is a product company and the other is a service company. There is another variation of these which is a company that provides a product as a service. The companies that provide a product as a service are considered to be more profitable than both other types of company.

Product companies are typically capital intensive. One good example is an automobile company. A company will need a lot of initial capital to manufacture cars before they can sell them. They need a plant and manufacturing equipment and all the materials needed to build and assemble a car. The capital required could be significant. For a service company, the capital required could be significantly less. There will be the cost of employees who are providing the services. Employee compensation would be the major part of the expenses. Professional services companies such as law firms, accounting firms, physician groups, and other services companies including consulting firms, financial services firms, and architectural firms generally get compensated for the time it takes to render their services. Therefore, their revenue is directly proportional to the number of employees they have. A law firm with prestigious reputation may be able to charge a very high hourly fee, and their income per employee could be much larger compared to another type of service firm such as

a transcription service with a low hourly fee where the income per employee could be significantly less.

The companies that provide products as services are generally more profitable because companies like Google, Microsoft, and Facebook generate recurring revenue with reduced expenses once they develop their product. These types of companies are mostly in the digital space, and they develop software to address the problems in the industry or for the consumers. The software is then made available to a large number of customers for repeated use, and this generates recurring revenue based on usage. There is no repeated cost of production except the cost related to adding new features or some customization for different users. They would still have marketing costs, customer acquisition cost, customer support cost, and other operational costs. Still, the total cost related to the revenue would be relatively less compared to other types of businesses.

I have done a simple comparison of these three types of companies – product, product as service, and service companies. Generally, product companies have larger numbers of employees, while product as service companies have fewer employees. Service companies will have a large number of employees because their income is dependent on the number of employees who provide the service. We can compare these three types of companies based on three measurements. Of course, there are many ways of comparing companies, but I have chosen the following measurements for comparison: total revenue per employee, net profit per employee, and market value per employee.

You can examine these measurements and compare the performance of the companies. In order to perform these comparisons, it is necessary to first obtain the following information such as the total number of employees, the total revenue, net profit, and market value for each company. Just to illustrate the comparison, I have selected two companies in the product category, Starbucks and Walmart. Starbucks primarily sells coffee and other related products, whereas Walmart sells all kinds of products.

ITEMS	STARBUCKS	WALMART
Product	Coffee	Assorted
Employees	291,000	2,200,000
Revenues	\$25B	\$500B
Net Profit	\$5B	\$15B
Net Profit %	20%	3%
Market Value	\$100B	\$350B
Total revenue per employee	\$86K	\$230K
Net profit per employee	\$20K	\$7K
Market value per employee	\$350K	\$160K

For Starbucks, looking at the figures per employee, we can say that these are relatively small when we compare them to product as service companies. Using the same measurement (figures per employee), Walmart's numbers are all relatively small because they have a large number of employees on their payroll.

To further illustrate my point, here's another comparison and this time I will use Facebook and Google.

ITEMS	FACEBOOK	GOOGLE
Product	Social networking platform	Search platform
Employees	35,000	105,000
Revenues	\$40B	\$140B
Net Profit	\$7B	\$40B
Net Profit %	18%	29%
Market Value	\$550B	\$900B
Total revenue per employee	\$1.15M	\$1.3M
Net profit per employee	\$200K	\$380K
Market value per employee	\$16M	\$9M

While both platforms are online-based, Google attracts more users, even those without a Facebook account, hence their higher revenue and profit per employee indicators compared to Facebook. But Facebook requires every user to share their personal information in order to use the platform, so they have much greater market value because of the amount of personal data they carry in their database. In today's world, data is wealth.

The third category of companies consists of those which provide professional services, and I have taken two well-known Indian companies, Infosys and TCS, which will give us a good sense of their performance in comparison with the other categories of companies.

ITEMS	INFOSYS	TCS
Product	Information Technology	Information Technology
Employees	230,000	420,000
Revenues	\$12B	\$20B
Net Profit	\$2B	\$5B
Net Profit %	17%	25%
Market Value	\$40B	\$120B
Total revenue per employee	\$55K	\$50K
Net profit per employee	\$9K	\$12K
Market value per employee	\$180K	\$300K

This is a much better comparison because we're comparing apples to apples. Anyone who understands basic mathematics can tell that TCS is performing better in nearly all respects, only slightly edged out by a very small variance in favor of Infosys' revenue per employee indicator.

These examples provide some insight into the performance parameters of the different categories of companies. When someone decides to choose the type of company one wants to start, they have the choice to determine their path based on the information we discussed.

2) Business Organizational Structure

In a start-up company, the organization needs a board of directors primarily to supervise and provide guidance. Initially, it should consist of founders, but when investments are raised, there can be representatives from the investment partners on the board. Currently, as one of the founders, I sit on the

board of Stamps.com along with one of the original investors, Brad Jones from Brentwood Ventures. Of course, when the company is taken public, it needs independent members on the board. The purpose is to obtain objective advice and adequate supervision to ensure compliance with all the laws and regulations. Generally, there are five to seven members. Only when the company becomes really large does the number of board members need to be increased. In addition to the board, the company needs an executive management team consisting of Chief Executive Officer, President, Chief Financial Officer, General Counsel, Chief Operating Officer, Chief Technology Officer, Chief Marketing Officer, and some other related management personnel. In the initial stages, a single person can function in different capacities, and as the company grows, people with direct responsibility can be brought in. It is advised to have frequent board meetings to go over the affairs of the company and monitor the progress to see if there are issues that need to be addressed.

All public companies require board meetings once per quarter, and sometimes they may have more than one. For young companies, I often advise them to have a board meeting once a month, or at least once every six weeks. This will provide clear supervision of the execution of the business plan. It is required to keep the minutes of the meeting for regulatory requirements and also for keeping proper records regarding the progress of the company.

3) Financial Management

Financial management includes the following considerations: i) to raise the needed capital and allocate it properly; ii) to increase profits and the value of the company and improve

the return on investment; iii) to reduce financial risks. These factors are very important for solid growth. One has to have clear financial planning, have a well thought out budget in place, be very disciplined on cashflow management and accounting, and be able to come up with credible forecasting on both revenue and expenses.

i. Raising capital

When building a sole proprietorship or any type of partnership, raising capital is often a straightforward task, but not when building a corporation especially a C corporation. How do you raise the necessary capital to fund the initial operating costs?

Generally, capital is raised through equity, and equity is the shares in the company. The companies can also raise money through debt, but the debt has to be repaid along with the cost of borrowed money as part of the expenses. In a debt relationship, the lender does not benefit from the success of the company, but the lender would need some form of guaranty so that they get paid whether the company is successful or not. Most financial institutions will lend money to a company on the financial strength of the company alone, but often they like to have a personal guarantee from the majority owners of the company.

There are also some ways of getting money for a company from financial institutions such as by collateralizing account receivables (pledging) or entering into a purchase order (PO) financing. These are usually done independent of each other. Accounts receivable pledging is a type of loan agreement where the financier provides a loan equivalent to an agreed percentage of the value of the accounts receivable in the

balance sheet. PO financing, on the other hand, is available from lenders based on the PO received by their customers. Only reputable companies or customers are typically approved for this type of funding agreement. The PO loans are paid back when the payments are received from the customers after servicing such orders.

The utilization of such loan facilities is a good way of managing cash flow without raising too much capital. This means that one does not need to dilute the equity if any of those avenues are available to the entrepreneur. The company management should be aware of these facilities and should prudently manage the cashflow because this would help in the company's successful growth.

Another method often used by the management of start-up companies is reducing the outflow of cash in the early part of the company's growth. During this time, the employees are paid a reduced salary supplemented by stock options which could be very valuable to them later if the company becomes successful. This gives the employees some ownership, and they become more motivated to make the company successful. Some companies give stock options or warrants or restricted stock depending on the situation of the company. In all these types of compensation methods, proper advice should be obtained from experts in the field to make sure the company is in full compliance with laws and regulations. In all these cases, there are tax implications for both the employer and the employees.

When we started Stamps.com, no one received any form of compensation except for reimbursements until we received capital funding from investors. Today, everyone involved in the

founding of that company has amassed substantial wealth. Some of them have even taken on the privilege of early retirement. Delayed gratification served us all well.

ii. Increasing profits and the value of the company and improving the return on investment

In most companies, there would be an ongoing plan to explore strategic ideas for continuous growth. This requires investments both in the form of capital (money) and time (management involvement). The goal should be to develop a strategy to maximize the return on investment in terms of money and time.

The primary objective should be to increase revenue and profit. Profit is measured in different forms. The first is EBITDA or Earnings Before Interest, Tax, Depreciation, and Amortization. Most of the time, profit is measured in the GAAP (Generally Accepted Accounting Principles) format, and this is primarily for financial reporting purposes. If the company becomes public, the SEC has regulated reporting requirements which need to be reported in the GAAP format for compliance and governance. If the company is international, it needs to have International Financial Reporting Standard (IFRS), and one has to follow those requirements.

From the valuation point of view of a company, it is generally 13 to 15 times the EBITDA or 20 to 25 times of the GAAP profit, and this determines the market value of the company.

When it comes to strategy, there are generally five main growth strategies and these are market penetration, market development, product expansion, acquisition, and

diversification. Market penetration involves marketing its existing products in the same market where it already has a presence. Market development involves expanding the sales of existing products in new markets. Product expansion involves expanding the company's product line by creating new products or adding additional features to their existing features. Acquisition involves the company acquiring another company in the same industry in order to expand its sales in that market. Diversification involves selling novel products to new markets. Such activities require additional capital and investment in management time and prior to such activities it is advisable to do sufficient research and analysis to determine whether such activities would be the best use of capital and time for the best return on investment. This is specifically important when new acquisition or diversification is contemplated.

iii. Reducing financial risks

Risk reduction involves steps to reduce financial losses by implementing measures that reduce the financial impacts of potential losses. There are well understood ways that will prevent certain types of risks from arising, also minimizing the frequency or number of times such risks can actually happen and also even mitigating the damage caused when such a loss inevitably does occur.

Generally, known risk reduction strategies are risk avoidance, risk mitigation, risk transfer, and risk sharing. Risk avoidance is to not engage in an activity that involves significant risk such as starting a new product by a company which may be too risky at that time. Risk mitigation is finding ways to avoid or minimize its associated risks. Risk transfer involves finding

ways to transfer the potential risk associated with the activity to another such as an insurance company or a business partner. Risk sharing involves methods of pooling activities with other companies to reduce the risks involved in any new activity.

4) Challenges

The next important area to be aware of when starting a company are the challenges you need to be prepared for. There will be many challenges, but you should be able to face them head on and convert them into opportunities.

Some of the major challenges include regulatory compliance, corporate governance, diversity requirements, risk management issues, and industry disruptions. If we go to more details, you could be facing the following hurdles: providing detailed accounting throughout the various organizations in the company, planning for economic changes due to unexpected events such as the coronavirus pandemic, operating in the midst of trade wars initiated by government policies, navigating the activities in the various sections or divisions of the company while there's poor visibility, understanding the performances in various areas or verticals in the company, and mitigating the impact of current fluctuations especially if the business has any form of international participation.

What I have outlined here is a very brief summary of the aspects of business that could be helpful to someone planning to start a company. I would strongly recommend seeking advice from experts as needed.

PART IV



**STORY OF MY FAMILY
AND OUR ADVOCACY OF
PAYING IT FORWARD**

In between starting business ventures, raising capital, and eventually taking those businesses to full operation, my wife and I maintained our household to ensure that our children were given the attention and care that they needed. I tried to pass down the lessons I learned from my parents in raising my children. My wife and I instilled in them the good values they would take with them as they go on their own, but we gave them the freedom to find and walk their own paths.

I have watched my kids grow up to be responsible people, and I have watched them get married and have their own children. And in all these years, it was no easy task to keep them within the boundaries of sanity and morality. I feel I've given my kids values to emulate, just as my parents passed down their values to me.

My grandchildren, whom I see often, also look at my life and how I approach everyday challenges. I feel I have an obligation to show them the kind of person they ought to be. Thanks to my resilience, I haven't let them down so far.

Regardless of the many challenges we face, I have always encouraged my family to be optimistic. There has never been a positive value to pessimism, so, I have always been a strong advocate of finding solutions rather than moaning over problems.

My wife and I loved to picture a future free of the challenges we faced in our dark period, and we made it a habit to help others see life that way. As my father, known for his helping hand, taught us, always extend your hand to help others. He never turned away a person in need. He always told my siblings and me about the value of helping others.

Over the years, I have nurtured a healthy habit of supporting others, be it in business, career, or benevolence. This has continued to be one of my strongest convictions. I'm strong only when we all are. Lending a helping hand will not only uplift others, but it will open the door for better opportunities to do more.

Helping others, for me, isn't about being privileged. I see it as a cycle that I enjoyed and therefore must help propagate. I will always remember that many people went out of their way to be of assistance to me. Some let me live in their homes, others allowed me to take the lead in academics or business. I also recognize that if not for their kind words, helping hands, and belief in me and my abilities, I wouldn't have been able to come this far.



IMMIGRATION OF MY SIBLINGS

With all of the good things that came into my life after I arrived in America, I have wanted the same for my family back in India, so I worked on getting them all to move to the United States of America. Unlike the immigration case I handled when I was practicing law, I was glad that my family's encounter with immigration went smoothly.

I am the oldest child in my family, and after me is my sister and after her are my two brothers. Family tradition dictates that as the oldest child, I was responsible for taking care of my parents and younger siblings when my parents become old. Due to my father's deep involvement in Indian politics, all aimed at improving the lives of our fellowmen, particularly the laborers working on the Indian railways, he did not have sufficient time to attend to his home or family. This, however, should not be taken in the wrong way. My father was an honorable man, and a separate section in this memoir shows what kind of man my father was. He left us a legacy that helped us live a great life. My mother, on the other hand, was a homemaker who tended the house and took care of their children. My parents had some ancestral property which generated some income, and that helped them to maintain an average middle class family life.

When I was applying for admission to engineering college, there was an entrance examination to get into the Indian Institute of Technology (IIT). There were four campuses in 1962, and it was the most sought-after engineering school in India at that time. I took the exam and was selected to go to the New Delhi campus. I also got admission to Coimbatore Institute of Technology (CIT) in Tamil Nadu which was close to

our home. I decided to attend CIT instead of IIT. I was the top student in school throughout my college years, and because of my good grades and great recommendations from my college principal and faculty members, I was admitted to one of the most prestigious universities in the world, California Institute of Technology with a full scholarship.

During my undergraduate education, I was a recipient of the national merit scholarship which paid for all my expenses including tuition. I also had a stipend which I used for giving gifts to my parents and my siblings. This is when I started thinking about taking care of my parents financially. Even though my father was a member of parliament with adequate compensation, he was giving all his salary to the party and was primarily living on the income from his ancestral property. Their lifestyle was very modest, and if I did not get a scholarship, my parents would have had to borrow money for my college expenses.

I started to learn early on that I had to take responsibility for the well-being of my parents and siblings, and while it may look like a burden, it has helped me to become goal oriented and successful. When I was ready to leave for the U.S., there were a lot of reasons why my family did not want me to go. But it was clear that I was going to a much more advanced country in every regard. I wanted to make the best of my experience in the U.S. My main objective was to become successful and be able to help my immediate family financially as much as possible. I took this responsibility very seriously. I had to be able to support my parents financially so that they would not need to worry about my siblings' tuition. They were all good students, and I did not want them to worry about financial difficulties while they were studying.

My objective for my siblings was for them to come to the U.S. for their higher education in medicine and to also practice medicine in the U.S. In the meantime, my sister got married and her husband was also a physician. When I became a U.S. citizen, I started suggesting that they could migrate to the U.S., and I could sponsor them as soon as my youngest brother graduated from medical school. At that time in the 1970s, when someone became a U.S. citizen, they could apply for their parents and siblings to come to the U.S. with a green card. The rules have changed significantly since then. The process then was quite simple, and the green cards were quickly issued in one or two months. Now, I understand it can take over ten years. We got them their green cards, and they all came in 1979. Of course, they were all well qualified doctors. At that time, however, doctors had to pass two separate exams to get into any medical training programs such as an internship and thereafter residency. These exams were ECFMG (Educational Council for Foreign Medical Graduates) and FLEX (Federal Licensing Examination). One had to pass the ECFMG exam before taking the FLEX. In many states, one can start the internship program after passing just the ECFMG exam, but in California both exams have to be passed before starting an internship.

One advantage we had was that I was familiar with the medical examination process because my wife had taken these exams, and by the time my siblings reached the U.S., my wife was doing her residency in the field of neurology at the USC Medical Center. She was the first female resident in neurology in the history of the USC Medical Center.

My wife had all the required information to go through the examination process, and I had worked with her to acquire the relevant information as well. As a result, my siblings were

prepared to pursue their training programs in the U.S. All my siblings came to the U.S. and stayed with us. Unlike when I came to the U.S. for the first time, they had the benefit of close family members waiting for them at the airport and a place to live.

We had a nice house, but it was not big. At the time, we lived in the beautiful suburb of Arcadia which is about ten miles east of Pasadena. We had two children, one about 7 years old and the younger one was less than one year old. The house was full, but we had a wonderful time living together. Everyone helped each other, and my wife was very busy at work. In those days, residents had to work much harder compared to nowadays.

My job was to make sure my siblings passed the two exams so they could start their life on the right path. Therefore, I became their coach to make sure they were prepared for their exams. Even though they were good students, one must prepare properly for these exams because they are much more difficult than their exams in India. Even though I was not a trained physician, I was pretty good at taking exams, specifically multiple-choice exams. As a coach, I could give them tips for preparing. We had exam preparation materials from my wife's experience from Kaplan Series publications, a well-known medical licensing exam coaching company. I gathered all the books, tutorial materials, practice exams, and all the relevant information and came up with a very detailed and aggressive coaching schedule.

I convinced them that they should take as many practice tests as possible just like when getting a driver's license. They understood the seriousness and started to take many practice tests.

I was very strict with them. My theory was that if they failed the exams, not only would they suffer but I would suffer as well because I would have to continue to support them. It would have been difficult for me to support them on an ongoing basis, and I wanted them to be independent and support themselves.

They took the exams and thankfully, they all passed! They even got very high scores, and I certainly take some credit because I was a very effective coach. I was very happy for them, and I saw the light at the end of the tunnel. Soon, they would be independent, and my responsibility would be over.

Two of them completed internal medicine training and the other chose pediatrics and then a neonatology fellowship. Once they all finished their training, I thought it would be good for all of us to live close to each other because we could help each other when there was a need.



MY FATHER'S LEGACY

From what you have read so far, my parents were deeply instrumental in almost all of my life's events and my father was the role model whose principles I largely followed in the way I conduct myself in life. I'll give you a glimpse of my father's early background, his aristocratic beginnings, political journey, and our relationship as father and son. Earlier, I have shared some bits and pieces about my father but, in this section, you will have a better grasp of the legacy he has left us.

Elephants in the Front Yard

When I was eleven, my father and I went to a wedding on his side of the family. My mother could not join him due to a prior commitment and since it was my school vacation, my father and I went together. I was happy and excited to go with him because I knew that I was going to the house where my father grew up.

When we reached the house, I was shocked to see the grand entrance to the property and the magnificent house. I had never visited such a grand house before. It had wood carvings and high ceilings and a collection of amazing furniture and classic works of art, paintings, tapestry, and all the symbols of aristocracy. The place was fabulous and there were elephants in the yard! I had so many questions to ask my father, but I knew it was not the right time. Instead, I decided to bask in the luxuriousness of the occasion and enjoyed the warmth of the company of our relatives whom I had not had the chance to meet before.

There is a famous novelist in Kerala named Basheer who wrote a well-known novel called “Ente Apooppakku Oru Ana Undayirunnu” (“My Grandfather Had an Elephant”). Basheer’s character in his novel had a grandfather who was extremely wealthy and evidenced by owning an elephant. Just like Basheer’s character, my own grandfather was a very wealthy man, but the difference is that my grandfather owned more than one elephant! My father’s family descended from a prestigious and wealthy clan. My grandfather was a wealthy landlord with thousands of acres of plantations. One of the signs of wealth during that time was having an elephant in the front yard of your house. In the case of my grandfather, he

had a number of elephants in his front yard showing he was a very rich man; you need a number of people to take care of the elephants, and you have to feed them, which is very costly. These elephants are pets as well as symbols of wealth. They do not have jobs of any kind. In the United States, the idea of seeing an elephant in someone's yard would be very unusual and worrisome, but in India it had great significance.

Even though my grandfather was very wealthy, he did not have any right to sell any of his property because of the Marumakkathayam legal standard. He was basically a custodian of the property while he was alive, but the true owners of the property were his sisters and their children. He was not legally eligible to transfer or gift any of his property to his wife or children. Therefore, his children and wife did not have any right to inherit the property. What's worse, my grandfather died when my father was only about eleven years old.

When my grandfather died, his sisters and their children inherited all the property. Prior to his death, my grandmother and her children were living in extreme luxury. When he died, they had to leave my grandfather's house, which is a customary practice. They then lived at my grandmother's house where she had ownership rights. My grandmother was from an upper middle-class family, but nothing compared to my grandfather's wealthy family. This would be a very significant change for them.

This event changed my father's life drastically.

The day we attended the wedding, my father's relatives came to receive us with such warm hospitality and reverence for my father. At the time, he was already a well-known politician, a member of the Indian Parliament, and a respected national

figure. Everyone in Kerala knew about him. They were very gracious and friendly, and were extremely thankful that my father had taken the time to attend the wedding. I asked them to take me around the house because I was excited to see the entire property. I can still remember my shock and surprise when I first saw it. My father did not tell me anything about the house. He thought I was aware that his father's family was excessively wealthy.

We attended the grand wedding. Most Indian weddings are generally grand and extremely enjoyable. However, prior to this, I had never attended a grand wedding of such scale. I still have the mental image of the various decorations in the wedding ceremony which included the fabulous banquet and the way it was served to a large number of guests. It was a wonderful and pleasant experience. On the way home, my father told me very casually that if my grandfather had lived much longer, and if the laws were different, we would be living in that house now. I then understood that this was probably in the back of his mind all the time, but he never expressed it to any of us prior to this visit.

This lack of a lavish lifestyle did not change his way of thinking. Being born with a silver spoon in the mouth and then losing it in a snap has probably motivated him more to help improve other people's lives throughout his entire political journey.

My Father's Contribution to the Indian Railways

My father started working for the government in an administrative position for the Indian Railways during the British rule and before India's independence in 1947. He started to see how the British officers and management of the Indian Railways were treating the working class. The English used a

large number of wealthy and more privileged Indian citizens as the British ruler's proxy to manage and take advantage of the less advantaged Indian people. This went on for over three hundred years. A deep review of Indian history shows how the British used certain Indians to dominate the rest of the people, and the British employed the same method for ruling all of their colonies.

As a student in both high school and college, he was very much involved in India's independence movement, and one of his high school teachers was instrumental in shaping his thinking about how he could play a significant role in India's independence struggle. He saw how bad the British treated the railway employees and the working conditions were pathetic. The overall quality of life of the workers was miserable. He decided to organize the employees. He also recognized that he could not work for the Indian Railways and help the workers at the same time, so he resigned from his job to fully devote himself to organizing a workers' union with the purpose of attempting to make the workers' working conditions better and educating them so they could take part in India's independence struggle.

He started dealing with the British management of the Indian Railways to change and improve the working environment of the workers. But the British were brutal, and they treated the workers like slaves. They worked for fourteen to sixteen hours every day, and their pay was not sufficient for mere sustenance. There were similarities to the way American plantation owners treated their slaves during slavery in the U.S. In those days, the railway was the main mode of transportation. The British used the railways to transport goods made in Britain, from a number of ports in India, to various places to sell and

make profit. They also took the raw materials without paying the Indians anything. Then they would transport them from India to the ports so they could be shipped back to England. The British exploited India in any way they could, and many wealthy Indians helped the British steal Indian resources and valuables.

At that time in India, the Indian Railways had different classes of coach for traveling: first, second, and third class. The first class was used only by British citizens. No Indians, however wealthy or influential, could travel in first class. For wealthy Indians, second class was available. Ordinary people could only travel in third class. The British created the class system in India, and it still persists today. I would say the main contributions the British made to India are the class system between Indian people and the bureaucracy found in everyday life. These two things still persist in India, and I am of the opinion that these two are main factors preventing the advancement of India to its full potential. Even with British rule over, India still struggles with the damage done due to many years of colonization.

The class system was an obvious form of discrimination for the Indian people, and this prompted them to fight against British rule. My father was very active with union duties, but he was very much involved in the Indian resistance against the British as well. For his activities, he was punished by the British and was jailed on many occasions. None of this prevented him from pursuing his main objective of Indian independence and improving the lives of Indian workers.

My father was the youngest elected assembly member of the South Indian region called Madras. This first assembly was

created before the independence of India in 1946 when the British created a limited form of democratic government. This region consisted of parts of the current states of Tamil Nadu, Kerala, Karnataka, and Andhra Pradesh. There was a constituency created by the British for only the railway employees in the whole region. He won the election with over ninety seven percent of the vote. He was admired, loved, and respected by the employees and he was only twenty-six years old.

Once he was elected as a member of the legislative assembly, he used his power and charm to negotiate with the British management of the Indian Railway. He was able to resolve many issues which improved the working conditions of the employees. All other elected members were in favor of Indian independence, but many of them were still subservient to the British even after India's independence. It is also true that many of the elected leaders were supporting the British rule before independence against the wishes of the majority of the Indian people. When independence happened, they became leaders of independent India.

After India became independent, its first general election was held in 1952 after the Indian constitution was enacted. My father decided to run for election, not in the State Assembly, but in the Indian Parliament, Lok Sabha. The Indian Parliament has two houses, Lok Sabha, which consists of members elected by the people, and Rajya Sabha, which consists of nominated members by each State's Assembly members. The Lok Sabha members have a five-year term, and the parliament elects the prime minister who selects the panel of ministers who rule the country. The Prime Minister is the most powerful person in the Indian system. This is very similar to the British parliamentary

system. India also elects a president, not by the people, but by the elected members. Unlike the U.S. president, presidential powers in India are very limited.

When my father decided to run for the parliamentary election, he made an announcement that he would run against then Railway Minister, Sundaram Iyengar, who was on the cabinet that had formed after India became independent. Sundaram Iyengar came from the South Indian state of Madras, which is now called Tamil Nadu. Even though India became independent, and the British left, Sundaram Iyengar ran the railways just like the British had, or even worse. Because of this, my father wanted to unseat him. I'm not sure if my father knew how difficult this would be.

When Sundaram Iyengar found out that my father would be challenging him, he changed his constituency consisting mainly of wealthy feudal agricultural owners who forced all their workers to vote for him. Because of this, he thought it would be very difficult for my father to defeat him because my father was a stranger to that constituency. Surprisingly, my father won the election with a significant majority because of the enormous support from local people. He became a national leader due to his dedication to the people, and they realized that he was representing their needs without any selfish interest.

The life of the railway workers started improving greatly, and their working hours were reduced to eight hours a day. Their compensation improved significantly, and they started getting benefits such as healthcare, sick leave, pension benefits, holidays, yearly vacation, and many other things. My father played a role in getting all these improvements for the

workers, and they showed their affection and gratitude to him. However, the challenges of the workers did not end there.

In the early morning of December 23, 1964, a twenty-five-foot storm surge known as the Rameswaram cyclone struck the southern region of India and the northern tip of Sri Lanka. Just eight days earlier it started as a low-pressure area over the southern Bay of Bengal and Andaman Sea and turned into the most powerful storm to ever strike India to date. The cyclone caused massive property destruction and thousands of deaths both in Sri Lanka and in India. Dhanushkodi, a town located on the southeastern edge of the island, suffered the most destruction with over 800 people killed in this town alone. The catastrophe submerged the town and overturned the Pamban-Dhanushkodi passenger train killing all 200 passengers onboard. What's worse, the Pamban-Dhanushkodi bridge had been totally destroyed, isolating the island from the mainland. At first it was not clear that anything could be done to save the town, but my father knew he had to try.

As the leader of the railway union and without wasting time, my father packed his bag and immediately traveled to the devastation as an emergency response. I was home for Christmas vacation, so I decided to go with him. He routinely goes to places where natural disasters have happened in order to see how he could use his personal contacts with the government to bring help in a timely manner. He did this on many occasions, and it has helped the people to get shelter, food, medical help as well as search and rescue. On this occasion, the disaster was most devastating to railway employees, passengers, and the community affected by the loss of the railway bridge. My father was also personally affected because of his close relationship with the railway employees

in the area. Generally, he would go by train, but this time since I was also going, we took the car. It was always a pleasure to travel alone with my father because we could talk about many subjects, and I was very inquisitive. I would ask him about many things, and he was very knowledgeable and would listen carefully before making any comments. I learned a lot from him, and I developed his style in thinking, addressing problems, and coming up with answers. This trip helped me to learn more about his way of addressing problems.

After we reached the affected area, he became very busy meeting government staff and other disaster management personnel. The devastation I witnessed was terrible, and the plight of the people was indescribable. Where buildings had once stood, there was only debris and rubble. He was interfacing with local leaders, volunteer personnel, and officials from various agencies including military and police personnel to provide immediate assistance to the local community along with some guidance on how to recover as a long-term solution. This was the first time I saw him so engaged with his work and I could see that he understood that any delay would cause more devastation. I could see how involved and caring he was. I was very proud to see my father working hard to bring as much help as possible to the suffering community.

We were there for about five or six days working with the local personnel, and after the situation was reasonably under control, we started our journey home. Just when I thought the worst was over, another disaster took place and this time, to my father himself. Please keep reading and I'll tell you about it in a moment.

The Good and Bad of Politics

My father's work in the Indian Railway was a huge highlight of his political journey. The Indian Railway is probably the largest employer in India, and it has over a million employees and over forty thousand miles of railway track. It is the fourth largest rail network in the world owned and operated by the Indian Government under the ministry of railways. In India, the government presents two budgets every year, one for the railway project and the other for the rest of the country's requirements. This shows how important the railway is to the Indian government. My father contributed so much to shape the management and growth of the railways and he was working with the government as a member of the Indian Parliament even though he was in the opposition party. They valued his guidance, and they all respected his participation in the improvement of the railway.

He was highly respected by India's first prime minister, Nehru, and I believe that he was the youngest member of the Parliament at the time. Subsequently, when Indira Gandhi became India's prime minister, the relationship got even better, and I remember on certain occasions when visiting my parents in Delhi we were invited to the prime minister's residence for both social and official purposes. Prime Minister Indira Gandhi had two sons, Rajiv and Sanjay, and Rajiv later became Prime Minister. Rajiv was a few years older than me, and Sanjay a few years younger. When we visited their house, I would play outside with Rajiv in their backyard when there was an official function going on in the house. We were reasonably close then but after he became prime minister, we lost contact. Sadly, he was later assassinated. His wife Sonia Gandhi later became

the head of the Congress party and has been guiding the party ever since.

In Indian politics, it is very common throughout the country that political leaderships are handed from the leader to their child or other family member. Having a deep knowledge of the dark side of politics, my father expressly discouraged me from running for office starting from when I was a young man. He said he would not support me if I decided to get into politics. According to him, most politicians, if not all, were only interested in making money for themselves rather than helping others. He didn't want me to be exposed to that world. My father conducted himself in politics by doing charitable activities with no selfish interest. He dedicated his life to being of service to others. He would always say that there were more things to be done.

Even though I had my own opinions about politics, I decided to respect my father's wishes and advice. Looking back, I am sure I did the right thing because I am in a position to help my fellow human beings in the U.S. as well as in India.

I've seen the best and the worst of Indian politics through my father. The worst started for our family when my father and I traveled back to our home in Tamil Nadu after about a week in Dhanushkodi where he provided assistance to the victims of the Rameswaran cyclone.

After a few hours on the road, a number of police cars driving behind us stopped our car. We stepped out of the car and several police personnel came and surrounded us. The senior police officer came towards my father with a smiling face and said that unfortunately they had a warrant for the arrest of my

father under the Defense of India. He tried to be as respectful as possible because he knew my father, and he was apologetic because the arrest was based on a preventive detention rule without any cause. The police knew that he was returning from the disaster area and his reward for doing such charitable work was to put him behind bars. They were sympathetic to him and expressed that they were sorry that they had to do it. They claimed that they were ordered to arrest him by the central ministry. As I watched my father getting arrested, I thought I was going to fall onto the ground. My knees were weak, and my heart was pounding against my chest nonstop. My throat went dry. I couldn't speak a word.

This happened when Lal Bahadur Shastri was the Prime Minister, and the government gave a special order to arrest all the leaders of the communist party who were planning to protest against the government for various kinds of grievances. They did this to make sure the protests did not get out of control. Many leaders were in jail for a number of months for no real reason and eventually were all released.

Watching my father get arrested was a shocking experience. The police asked him to get in the police vehicle to take him to the jail where they were holding other opposition party leaders. They were very respectful, and they knew that this arrest was politically motivated. They knew that all the working people liked my father, and most of the police liked him as well. Still, it was very hard for me to witness this injustice against my father. The image of him being put into the police car is forever stamped in my memory.

This experience helped shape my thinking about what is good and bad, and this event made me think about how complicated

life can be sometimes. My admiration and respect towards my father only increased.

Spending time in jail did not in any way change my father's dedication in working towards achieving better living conditions for the working class of India. If anything, it made him more popular, and he was more admired and respected by the people for whom he was working.

A Life Well-Lived

I am proud to be my father's son. We had a good, middle-class life with all the comforts, but none of the luxury. In my education, I was lucky to get scholarships throughout my life, so my education did not cost anything for my parents. When I came to America, I was fortunate to be able to help my parents financially so that the education of my siblings did not cause financial burden as well for my parents. My parents lived very happily within their means and despite lack of meaningful savings, they never incurred any debt.

My father travelled extensively in India and all over the world for his work. He went to the U.S. a number of times because I was living in the U.S., and he enjoyed learning about the culture and traditions of the American people. He was also deeply interested in learning more about the working conditions of the American workers and their quality of life.

During the many discussions I had with him, he would not give me any specific advice, but he would always say that I should try to do good with my life. I have tried to follow his teaching and pass these values to my children and grandchildren, not by telling them what to do, but by giving them a positive

example to follow. I want them to understand that a person is measured not by their words, but by their deeds.

My father was a charitable man. He would give to others even when he had very little. I observed this throughout my time with him. He never told anyone what he had given to others, but I had noticed his charitable nature as I was growing up. I tried to instill in my children the same charitable quality I saw in my father. Together with my children, we have created a charitable foundation, Ananda Foundation, through which we have provided funds for deserving people.

His desire to help others extended way beyond his time on earth. After he passed, I went through his bank records and found a number of letters which were yet to be posted. My thoughts were flying out of extreme curiosity as to what they were about. One of the letters was addressed to a TB (Tuberculosis) treatment center. The more letters I opened, the more I realized what an outstanding individual my father was. I discovered that those were letters addressed to selected charitable foundations. I found out from his bank records that he had been sending almost all of his parliament pension money to these charitable organizations for a long time. It's no surprise to me at all that he would do such a thing, but my mother only knew about it when I started mailing the checks. She was happy for me to send those to whom they're addressed. I thought I couldn't admire my father more with how much I've seen of how he lived his life, but this incident increased my respect towards him. Additionally, we decided to bestow his entire life insurance proceeds to the various charitable institutions he had supported over the years.

His selflessness did not go unnoticed amongst the people within our town whom he had helped. I've witnessed myself and I will tell you more about it as you keep reading.

When my father passed in his home in India, I was in Los Angeles. Prior to his death, my father had been in reasonably good health. He had some heart problems, but not anything serious. He was very active and was only ever hospitalized once due to pneumonia. He traveled whenever there was a need. Whenever he visited the U.S., he received a complete medical exam. Our whole family is full of physicians. My wife, sister, and two brothers are all physicians, so both of my parents' health conditions were well-monitored.

My father and mother lived in their comfortable house in a small town in Tamil Nadu called Tiruchi. Every morning when he woke up, he would go to the gate and pick up a few newspapers. His daily routine was to walk in his yard and examine the fruit and vegetable garden and when people would walk by their house, they would often stop by and have a pleasant conversation with him. This was a daily ritual for him when he was in town. Everyone there knew him and was always eager to chat with him. This particular day in October 1991, he had a conversation with a few people before taking the newspapers to the veranda. There he sat reading the papers. My mother brought a cup of tea for him, and he kept it on the side table next to him. He generally finished the tea while reading. As a prolific reader, he would read the newspaper from cover to cover.

My mother would periodically check in on him to see whether he finished the tea so that she could pick up the teacup. On this day, she saw that he was holding the paper but the

teacup was practically full. He must have only taken a few sips, she thought. She was going to come inside the house, but something nudged her to go over where my father was sitting. She came out and asked him why he had not finished his tea, but there was no response from him. When she touched him, the paper fell, and she realized something had gone wrong. Their neighbor happened to be a physician, and my mother ran to their door. She rushed to examine my father, but by the time she arrived, my father was already dead. He had suffered severe heart failure and cardiac arrest. He died instantaneously without any suffering. These types of sudden deaths occur in rare occasions. For my mother and for all of us, this was a shock because there were no warnings or symptoms prior to this event.

It was good that he did not go through any suffering or pain through being ill, but we always thought that if we had the opportunity to bring any medical intervention, his death could have been prevented. This is something I continue to think about though I know it is not a productive way to think. We cannot change the past, and we cannot allow ourselves to remain stuck in doubts and regrets.

After his death, someone called us immediately, but we knew it would be a long time before we would reach India. All of us booked the next flight home. In the meantime, my mother was in such a shock that she took a full bottle of sleeping pills she happened to have. She went into a coma and suddenly there were two tragedies at home. Since my father was well known and well-liked by the people in the community, the news spread like wildfire and hundreds of people started coming to the house to find out what happened as well as to show their affection and respect. This was when I clearly saw how well

loved my father was by the people he helped. Immediately, the leaders of the community were there, and they took charge to provide urgent assistance to my mother by taking her to the hospital. She was admitted to the ICU where she was given the needed medical attention. In addition, they had to plan the cremation of my father's body, and they wanted to do it according to Hindu customs. The whole process must have been chaotic, but I was told that the cremation was attended by over twenty thousand people. He was well liked by the people, and they all came to show their respect. The planning and management were done by the local leaders of the communist party. This all happened while I was on my flight home. I could only see the pictures taken by some of my friends.

All this happened while my mother was in the ICU. To this day, I still don't know whether she took the sleeping pills to commit suicide or she simply needed to calm her nerves. She never told us what prompted her to do it and we never asked again. We reached India the next day and went and saw her right away, but she was still in a coma. We also participated in some post cremation rituals according to the Hindu customs such as collecting the ashes from the cremation place and performing some prayers before taking the ashes to the river in Kaveri with the advice and guidance of the Hindu priest.

I also needed to take care of many family-related matters including settling accounts and collecting the death certificate, dealing with insurance companies, and engaging in a number of related activities. My mother came out of her coma after a few days, and it took another six or more days in the hospital before she was discharged. I did not want her to stay at home without my father even though she had live-in help. It did not

take much for me to convince her that she should come to the U.S. to live with us.

Since all her children were living close to each other, she would live with one of us for some time and then go to live with another child at another time. Because of her proximity to us she could see all of us wherever she stayed. She lived in the U.S. for about twenty-four years in reasonably good health without any major problems until she died at the tender age of ninety-four in the United States. Before she passed, she was able to travel back to India a few times to visit her old home and other relatives who stayed in the country.

I am very proud of my parents, especially looking back at how deeply they loved us and gave us the values we live by, and we are working hard to pass them onto my children and grandchildren. The only regret I have is that my father did not live long enough to witness some of the achievements I have had as an entrepreneur, which occurred after he passed away. He was certainly very proud of my achievement when I received my PhD, when I finished law school and became a lawyer, when I was working at JPL on very exciting and pioneering interplanetary programs for NASA, and when I became a primary architect in the GPS Program of the Department of Defense. I remember his words when every time I achieved some success, he would say that there are more successes you will be accomplishing, and if you just do what you like, success will follow automatically.



MY MOTHER, THE LIGHT OF MY LIFE

My mother was a wise and patient woman. Her devotion to my father kept our family strong through all the trials and tribulations that filled my father's political career. Prior to her marriage to my father, she lived with her parents and older brother. I, too, lived with my grandparents all through my high school education. Her parents had some agricultural land inherited by my grandmother from her mother. My grandparents did not do agricultural work themselves, but they had workers who worked in the farm and provided them with the crops after taking their share of the harvest produced by the land. My grandfather worked for the government as a local administrator and my grandmother took care of the home. My mother's brother was about ten years older than her. He had completed his college education and went to work for the government as an administrator in the court system.

My mother was born into an upper middle-class family, but she did not finish her high school education. She primarily stayed home and helped my grandmother in managing the home as most women did until they got married and started to manage their own home. Typical of the Indian tradition, my grandmother sought for her a suitable boy.

A Suitable Boy

All marriages at that time were arranged, and in many cases the marriage proposals were discussed by the parents without the knowledge of the children who would be getting married. The main consideration for the marriages were the compatibility of the social status among the parents and the compatibility of the horoscopes as interpreted by the local astrologers. If

the astrologers did not approve of the compatibility between the horoscopes, the marriage would not happen. In our family, among Nambiar, an upper caste group in the North Malabar region in the current state of Kerala, India, a family tradition was that only marriage proposals would be discussed among the Nambiar families. My grandparents belonged to the Nambiar family, and a proposal for my mother's marriage came from a fairly well known Nambiar family to which my father belonged. There was also a practice at that time among Nambiar families that if a family had both a boy and a girl to be married and another family had a suitable boy and a girl to be married, both families would prefer to have an exchange marriage between these two families.

Clearly, an exchange marriage is between the boy from one family and a girl from the other family and the sister of the boy from the first family and the brother of the girl from the second family. My understanding is that this type of exchange marriage practice was used by the families then for two purposes. First, to avoid any dowry situation between the families and second, to maintain the assets between the two families. Such a practice has prevailed for many generations in that region, and then slowly but steadily the practice started to fade away over time because people started to find their own spouses outside the Nambiar families. They also wanted to travel outside their regions to find relationships outside the close knit Nambiar families.

When the proposal of marriage for my mother came to my grandparents, my mother was reasonably young. My grandparents had been looking for a suitable marriage for my uncle. This proposal was for my father to marry my mother, however, my grandparents found out that my father had a

sister who was also eligible for marriage. They soon checked out the compatibility of the horoscopes for both couples and they found out that the horoscopes were extremely compatible. They were interested in getting both marriages completed together as soon as possible. While all these marriage proposals were being discussed, my father was busy with his activities and was not consulted about the marriage proposal until both marriage proposals were almost agreed to. When he was notified by his mother about arranging a date for his marriage, he told her that he did not have time to get married because of his other commitments. He said that they could schedule his sister's marriage first and sometime thereafter he could get married, because he did not oppose marrying my mother. This became a problem for my father's mother because she was worried about how to communicate this matter to my mother's parents.

Generally, when there was an agreement for an exchange marriage, both marriages took place together. As this wasn't the case for the two pairs, my father's mother graciously reached out to my mother's parents and told them the situation. My mother's parents were not very happy about it, and they were almost ready to cancel the whole plan. However, the discussion continued with the help of people known to both families, and finally they decided to have the marriage between my uncle and aunt first, with the understanding that the marriage between my mother and father would take place within a year. But things did not go quite according to plan.

My uncle's marriage went well, but my mother's parents were anxious about scheduling the marriage of my mother. There was no clear communication from my father's mother. They had some discussions, and each time my father's mother

would say that she was still waiting for my father to be ready to get married. Months and months went by, and my uncle had his first child. Even though they had a happy family, everyone in the family started to feel the strain because my mother was still not married to my father. Even though my mother was reasonably young for marriage, more than two years had passed since the marriage of my uncle.

My father's mother had been pressing my father to set a date for the marriage, but he kept postponing because he was so heavily involved in his work. He wanted to wait until India got its independence so that they could have a better married life. Originally, the British Government promised India that as soon as the second world war was over, they would give India her independence. However, the British government did not keep their promise. This made my father feel that it was not clear whether India would ever get independence. He recognized that any further postponement of the marriage would create unnecessary family strife, so he agreed to schedule the marriage to my mother.

A Caring Wife and Mother

The initial period after my parents' marriage was very difficult for them because of my father's involvement in the independence movement working against the British regime. His involvement in the Indian Railway labor union started quite early in his political career. He was attempting to improve the working conditions of the Indian Railway workers, who were being exploited by the British authorities. Even when my father was elected to the first legislative assembly for the State of Madras under the British government, he had been arrested and jailed for political reasons and this was before his arrest that I witnessed as a young boy. Because of this, my mother

had to take care of the home and me by herself. At the time, I was only a few months old. She had some very difficult times.

Even after India gained its independence, my father spent more time working for the betterment of the Indian Railway workers' living conditions, so my mother played a major role in taking care of the home mostly on her own. Nevertheless, she had always been supportive of my father's activities. At the peak of my father's political career, my mother was tending to us four children. I was the eldest followed by my sister and then two younger brothers. Due to my parents' frequent travels, our education had been affected, so they decided to leave us with my grandparents. That's how I started living with my grandparents while studying high school. My two brothers who were not yet in school stayed with them. Life was comfortable for them during this period with both joy and some difficult times.

When I was about ten years old, my parents and younger brothers visited us in our village to spend some time with us. It was a very happy occasion, and my father stayed home without any work or interruptions. During this period, I could remember we were all living together as a family for the first time. We did many activities together such as visiting family and friends nearby and going for walks every day and having picnics together. I remember that those were the happiest of our days together with all the comforts available to us.

While we were having a great time together, my father fell ill. At first, all of us thought it was a common cold and did not pay much attention, but a few days passed, and he started becoming more and more sick. My mother became terribly worried. Something was very wrong, and there was no real

medical help in our remote village. The only way to reach a doctor then was to go to the nearby town of Kannur, about twelve miles away. Without phones, the only way to contact the doctor was to send someone to him and get his advice or medication. We sent a relative to meet with the doctor who wanted my father to go to the hospital in Kannur so that some tests could be run. The relative came back and conveyed the message, but it was very difficult for my father to travel. Nevertheless, my mother and father decided to go and I, being the oldest son, went with them. All my siblings stayed home with my grandparents. None of us knew what would happen next, and we were all deeply worried.

We went to the hospital, and the doctor and all the nursing staff were very caring to my father. My father was a well-known member of parliament and everyone there knew him. I could see and feel how anxious my mother was, and I tried comforting her by saying that everything would be fine, and he would be home soon.

After doing the various tests, they found out that he had pneumonia, an infection that inflames the air sacs in one or both lungs. The air sacs of a person with pneumonia were typically filled with fluid or pus (purulent material), causing cough with phlegm or pus, fever, chills, and difficulty breathing. All these symptoms were present in my father. We were trying to determine how he acquired the illness based on what we know about pneumonia. A variety of organisms, including bacteria, viruses, and fungi, can cause pneumonia and it can range from mild to life-threatening. We suffered from sleepless nights waiting to see how my father would fare with the illness.

The doctors wanted him to stay in the hospital until he was fully recovered. He was in a very serious condition. My mother stayed with him in the hospital for more than two weeks. Every day, after school, I would go to the hospital and be with my parents. He was generally improving day by day even though there were occasions when his condition became more serious. Soon, he was fully recovered and discharged from the hospital. Even though I was fairly young at the time, I recognized how loving and caring my mother was to my father, and she devoted all her time to taking care of him. She showed the same affection and love to her children.

The next few years until I left for the U.S., I only visited my parents during my vacations from school. I was staying between my grandparents' home and the hostel during my high school and college years. My parents' life was mostly uneventful yet happy with some occasional bumps when my father was arrested and put in jail by the government for political reasons. Every time he had to go through those difficulties, he became more popular, and more people admired his courage and dedication. During these events, my mother pulled the family together and showed all the strength needed to make life continue without any disruptions.

My mother was originally not very happy to find out that I was going to the U.S. for my higher studies, and when she found out that I had a job offer after college in India, she tried initially to influence me to take the job so that I would be in India, and she could visit me whenever she wanted. I had a long conversation with her one day, and she understood my reasons for going to the U.S. and became my biggest supporter. Even though I was not staying with my mother most of the

time when I was in India, I was still very close to her, and I felt that I was her favorite child.

Since I came to the U.S., I had been back and forth to India a number of times. At one point, I had been going at least once or twice a year. My parents visited the U.S. many times because all their children were living here. I suggested to my parents that they become permanent residents of the U.S., but my father's nationalistic nature initially dissuaded him from leaving India for the U.S. He wanted to live in India and was okay to simply visit us in America. Unlike my father, I always thought that my mother would have liked to live in the U.S. full-time, because all of her children and grandchildren were living here.

When my father passed away, I could see that she missed him very much, but she had a very happy life with her children and grandchildren. During her twenty-plus years in the U.S., she was hospitalized only once close to the day she passed. Prior to that, she would only visit a hospital for routine checkups and some testing or minor procedures. She had chronic heart conditions which were being treated with medications at home. She was fully mobile throughout her life and participated in all family gatherings. I believe she lived a very pleasant and enjoyable life. She always had a smiling face and a positive outlook in life. I am sure I got some of those qualities from her.

In the last few days of her life, she became ill with chest pain and at that time she was living with me and my wife. We recognized the problem and decided to get an ambulance to transport her to the hospital where her regular cardiologist was practicing. She was admitted to the hospital, and we were with her all the time. The doctors did their best to correct the

situation, but they informed us that any invasive procedures would not help and it could be miserable for her. They suggested that she be provided with hospice care. Hospice care is a special kind of care that focuses on the quality of life for people at the end of their lives. It provides compassionate care for people in the last phases of incurable diseases so that they may live as fully and comfortably as possible.

She was discharged from the hospital and discontinued all her medications. She then went to stay with my sister whose house was fifteen minutes from ours. She looked very happy with no pain, and I would spend most of the day with her and talk about the many happy events in her life. One evening we were having ice cream together and after she was finished, she went to sleep. The next morning, she passed away. It was a very sad day for us, but I was happy that she lived a full and enjoyable life and went peacefully.



MY STRENGTH, MY WIFE

Rajeswari Ananda, a neurology specialist, mother, and wife. We fondly call her Rajee. Now, I will share how we met, tell you about her background as a young girl, and recount a few stories of her as a medical practitioner. I am giving you a glimpse of our relationship as husband and wife, how she is as a mother, and how she has become my pillar of strength as I go after my personal aspirations in life while she's also going after hers.

Meeting My Wife

One of the biggest gifts I've received in my life was having my wife for a life partner. My wife has been instrumental in many

of my life's successes both personally and professionally. She has stood beside me through all the challenges we faced and celebrated with me all the victories that came along our way. Before making a big decision, I would consult her and get her opinion (and you have so far read that this has happened many times), because her wisdom and values are well-grounded and always in the best interest of me and our family.

But as some of you may be aware of, marriage in India is quite different from most cultures around the world. Typically, Indian parents are always keen on having their children intermarry with their fellow Indians rather than get married to other people. Also, it was customary for the parents to make marital arrangements for their children. This was generally acceptable because, over the centuries, the culture has strongly associated the union between two people with the union between their families. At first though, I was not at all sure this was for me...

Another aspect of the Indian marriage custom was the enquiry of the prospective family from a fairly independent source. Every father wanted his child to marry into a family that was upright, respected, and responsible. Furthermore, Indian culture also encouraged using astrologers to interpret the stars of their children. They could tell you whether or not the couple would make a good match and if their home would yield nothing but happiness.

Before I left for the United States to carry on with my studies, my younger sister was admitted into a medical college in a city called Thanjavur in Tamil Nadu. I remember accompanying her to her dormitory when she had to start school for the very first time. The college where she was admitted had a student population who almost entirely spoke the local dialect of the

city which is Tamil. But at home we spoke a different language, Malayalam, even though people in the area where we lived spoke Tamil.

When we arrived at the dorm, we were greeted by a couple of people, one of whom was a young lady who was also a medical student at the college.

This lady was particularly glad to meet my sister because she, like my sister, was amongst the few whose mother tongue was different from Tamil. In fact, she also spoke Malayalam. I met this girl a few times and had a few pleasant conversations with her before I left for the U.S. What I did not know at the time was that I would eventually see this girl again.

I left for the United States of America to study at Caltech some months later. As time went on, I would call my sister, every once in a while, to see how she was doing, and occasionally during those calls, I would inquire about the welfare of her friend, the medical student. I wasn't particularly thinking of her in regard to marriage or anything like that, I just thought she was a lovely girl who had a lot of positive things going for her.

As time went on, my parents began to have concerns that I might be dating someone back in America. They didn't like the idea of that at all, let alone a non-Indian. So, they began to talk to me about getting married. I was relatively young and didn't think it was something we all should be worried about. Nevertheless, their concerns weren't things I could ignore. So, they began to send me pictures and phone numbers of ladies that I could contact and see if something could start between

us. I obliged a number of times, but I soon got bored, partly because I had my sights on someone else.

Back then, it was pretty awkward for a son to discuss such matters openly with his parents, especially if his opinion differed from theirs. This was due to the level of respect that flowed from him toward them, or simply because the two generations were usually worlds apart. So, I consulted my close friend, Sebastian D'Cruz, who was back in India and told him about my dilemma. He suggested that the best way to go about it was for him to go meet my parents and tell them about the lady I had seen and would be interested in a marriage proposal.

No sooner had we spoken had he taken steps to that effect. He quickly arranged to meet with my parents and broke the news to them. My parents were delighted. First, because the news was a confirmation to them that I wasn't dating anyone back in the U.S., and second, because I had been looking for a wife, even though it wasn't one of the women they had suggested. So, they asked that she be invited to dinner so they could meet her. My sister quickly facilitated the meeting, and they all gathered at one of the restaurants near their dorm. My parents wanted to make sure the girl they met was the exact one I was referring to, so they came up with a smart strategy.

On their way to dropping the girls back to the dorm, my mother insisted that they all take a photograph to preserve the memory of the wonderful event, and they all agreed. So, my dad stopped at a photo studio, and they all took a photo. But before the photo was taken, my mother took her necklace and put it on the lady in question, with the explanation of trying to add some elegance to her outfit. This picture was then

sent to me to confirm if the lady with my mother's necklace is the same one to which I was referring. I sent back a message saying she was.

After my parents got this news, they proceeded to meet the parents of this young lady. My dad went over and met with the father of my prospective bride. Her father was extremely surprised and apprehensive. His reaction was because, back in those days, the norm was for the parents of the girl to approach the parents of the man, not the other way around. Because my parents came off being too forward, he feared that maybe their son had some kind of a problem or was handicapped. After they assuaged his doubts, he proceeded to ask for my horoscope. This is a document based on the planetary position at the time of birth and the location of the birth. It was normal for prospective in-laws to ask for this, as they would need to consult with their astrologer to ascertain if their son or daughter has a bright future or not.

My would-be father-in-law proceeded to visit one of the very well-known astrologers in their community. He gave the astrologer two horoscopes, mine and his daughter's, without telling him whether it is his son or daughter so that the astrologer would be more objective. The astrologer examined both horoscopes and told my father that if it was for his son, he would get plenty of marriage proposals and would be compatible with a number of girls. Because of this, he did not recommend this match. But on the other hand, if it was his daughter's horoscope, she would not get a better match than this boy. He said, if this marriage does not take place for the girl now, it would take a minimum of ten years before her marriage would happen, and he strongly recommended the marriage take place as soon as possible.

This astrologer's opinion made my future father-in-law very enthusiastic. My parents did not generally believe in astrologers, but they were not against people who did. They were very happy to find out that the girl's father was more enthusiastic now than before. The primary reason the girl's father was not that enthusiastic was because he was raising two daughters and a son without their mother who passed away when the youngest child was about thirteen. He did not want to send his oldest daughter to the U.S. His oldest daughter was just twenty years old and still in her third year of medical school. He certainly did not want to disrupt her education because of this marriage. He also learned that even if she completed her education in India, it would take further studies in the U.S. to become licensed.

He knew that his daughter was keen to become a doctor, and her only aspirations in life were to complete her education, practice medicine, and be of service to society. He was afraid that this marriage would change her future, and he wanted to get assurance from my parents that this marriage would not be a hindrance to her aspirations. He met with my parents and raised his concerns. My parents assured him that they would do everything in their power to make sure his daughter would be able to pursue her career.

We got married and eventually, she met all the requirements to practice medicine in the U.S. She then became a specialist in neurology and became one of the most admired and respected physicians in our community. Today, she is sought out for many complicated neurology consultations in many parts of the world. Currently, she is the chief medical director for the Second Opinion Medical Group which provides second

opinion services in all fields of medicine for patients from all over the world.

Whether it was astrology or a divine force that made our first meeting at my sister's school possible, whether or not astrology had to do with our eventual union, only one thing is clear, I am lucky to have been chosen by my wife. And I'm glad to be taking this journey called life with her. I'll never know where she's getting all that strength I've seen in her through the years of being together but deep inside the pages of this book, you'll see how she has become my life's rock of support.

Concert as a Prayer

Rajee loves music. As a young girl, they lived in a highly desirable neighborhood in the city of Trivandrum, Kerala, India, amongst the middle-class families near the Music Academy. The Music Academy was founded in 1939 and was renamed Swathy Thirunal College of Music in 1962. This is a popular institution for students in Carnatic Music. Carnatic music is a form of South Indian classical music originating from the time of Vedas with roots from Same Veda. Rajee was interested in music, and one of the principals of the Music Academy and a great Carnatic musician, Semmangudi Srinivasa Iyer, was living close to where she and her family were living at the time. Her parents were also interested in her learning Carnatic music, and they wanted her to study under this great musician. She had a few lessons from him, but her ambition was to become a doctor and get into a medical school.

She was a good student, but she knew that coming from an upper caste family, her chances of getting into a medical school were slim because a large percentage of medical school seats are reserved for lower caste students. For an

upper caste student to get admission to a medical school, she had to be one of the top students in the state of Kerala. Even then, the seats were limited. It put her in a dilemma. She was torn between learning music and achieving the top rank in her regular education in order to be accepted to a medical school. After a lot of soul searching, she decided, with great sorrow, not to pursue her desire to learn from this great musician.

Rajee chose to enter a medical school but her interest in Carnatic music never faded even when we moved to America. On weekends, we had the opportunity to attend Carnatic music concerts organized by the South Indian Music Academy, a group consisting of dedicated classical music lovers in the Los Angeles area. The music was performed by famous musicians visiting from India. Rajee became more interested in listening to such music, and whenever we had time, we would go to the concerts in Long Beach, California. During this time, she happened to hear, through her friends in the community, about a music teacher living in the valley, Kalyani Sadanandan, who was teaching students Carnatic music. With the desire to learn music still in her heart, and because she had missed the opportunity to learn when she was young, she decided to meet the teacher and see whether she could become a student. She knew very well that learning music after so many years would be difficult for her. But I also knew that she was quite determined.

She met with the teacher, and they instantly became friends. Rajee started to call her Kalyani Mami (Mami means aunt), or Mami, affectionately. Since Rajee lost her mother when she was about sixteen years old, meeting Mrs. Sadanandan was a great blessing for her, and she started to take music lessons. She would go almost every day during her lunch hour to the

teacher's home for her music class. The teacher would prepare lunch, and Rajee relished the great feeling of having someone close to her during her music lessons. Their relationship became deeper and deeper. I had previously met her, and we had become close family friends. Periodically, they would have casual music performances with the other students in one of the other students' house. Rajee enjoyed the lessons and performances as well. I did not participate when the music performances were held in other houses. But one day it was our turn to host the performance, and a number of students and the teacher were present.

It was a very good performance, and I was impressed by the abilities of students which reflected how great their teacher was. Rajee herself performed well, and I was happy to see her enjoying her musical experience. After the program, during a conversation with her teacher and Rajee, I casually suggested that Rajee should be ready for a real concert for the public and maybe she could perform at my favorite temple in Kerala, India, the Guruvaayoorappan Temple. The temple has a big concert hall, and only famous musicians come and perform there. It would be almost impossible to get that auditorium for lesser-known musicians. I also said that a performance could be considered a prayer to the Lord Krishna, the deity of the temple, as her first public concert.

I knew very well that it would be difficult to achieve such an undertaking. I also knew that Rajee was not ready for such a performance in front of thousands of people. My reason for making such a suggestion was that if they thought they could do it, they would take the challenge more seriously, and it would be a great accomplishment for them. In particular, I knew it would make Rajee happy to perform in such a beautiful

space in service of Krishna. But at this point, it still seemed like a long shot.

I thought that they would not go for it, but they were both thrilled at this suggestion and said that they would prepare for a concert. They would be ready in one to two years. I was happy, but now I had to work on getting the auditorium for the concert when they were ready. Would I be able to do it in time?

Rajee and the teacher took their mission so seriously that they had music lessons practically every day during her lunch hours for the next year and a half. I started looking forward to her public performance in this highly sacred location. Periodically, I would ask her how the preparation was going, and she would say that she was getting closer, but was not sure when she would be ready. I would also ask her whether her teacher thought she was ready. She was always vague in her response. This type of conversation went on for a few months. Finally, I told her that I would be scheduling the concert date whether they liked it or not, and they should be ready by then. She did not object to my suggestion.

I was still finding a way to reserve the auditorium for the performance. In India, I knew that anything could be achieved if one had the right connection unlike in many other places. Therefore, I talked to a friend of mine, O.G. Sunil, who was an influential man in Kerala, India, and asked his advice about how to schedule the auditorium of the Guruvayoor Temple for our performance. He said, to my surprise, that it was not a problem at all, and he asked me when we needed the place. He was more concerned about whether Rajee would be able to give a concert to such a big audience. He did not know that she was seriously preparing for it. I told him that she

was ready, and we set a date in about a month's time so that we could arrange our travel. I figured we should do it on a Saturday around 6:00pm. He said that he would get back to me, and I waited anxiously for his reply.

Within a few days, Sunil called me and said that the reservation was ready, and it was on a Saturday as I suggested. He again asked me whether Rajee was ready for such an undertaking because he had no clue that she could give a classical Carnatic music performance. I told him that he should not worry because she would do a good job. I also asked him to find some good accompanying artists for violin and mridangam, a percussion instrument of ancient origin. This is the primary accompaniment in a Carnatic music ensemble. He said that he would find the best and promised to help if we had any problems. I recognized that he did not have much confidence in her music abilities, but I told him again that she would do a good job, and he should not worry about it.

I told Rajee and the teacher that the date for the concert performance was set and that they should plan their trip to India such that they had a few days prior to the concert date. Both Rajee and her teacher were thrilled, but they also knew that they had to be ready for this big function. I told the teacher that she and her husband could come and stay with us in our home in Trivandrum during the days prior to the concert and also participate in the rehearsals. I figured we could also visit a few of the tourist attractions nearby, and we could all travel together to the city where the concert would be held.

Rajee and her teacher started to spend more time together preparing for the big event. I arranged our travel plans, and the teacher and her husband made their plans as well. They

gave me the days they would be with us, and I promised them that they would have a great visit with us at our home.

We reached India, and I had to coordinate with Sunil to make the last-minute arrangements for the concert. Sunil took care of all the necessities for the concert such as the audio and video support and decorating the stage. We also met with the accompanying artists who were professionals who primarily performed for the movie industry in Kerala. I was happy to see them and realized that Rajee had the support of great artists to accompany her. That would make her confident in her performance.

Rajee's teacher and her husband came to our town by train, and we went and picked them up at the railway station. The teacher's husband had some walking problems and had to be transported in a wheelchair which we had already procured for his use. It was on this occasion I recognized that Indian trains and stations are not handicap friendly. It would be extremely difficult for a person who cannot walk to get on or off the train. As their train reached the station, we found their compartment and located them. I had the wheelchair handy with me. It was not easy for him to step off the train, so I sought some help from a porter who carried their luggage and got him off the train.

We encountered another problem when we realized that there were no elevators to take people on wheelchairs out the stations. The train switched tracks and therefore changed platform lanes too. When we boarded the train, we didn't have this problem because the first platform had slopes at both ends for people in wheelchairs. To get there, we needed to cross the bridge, but this too was not an ideal option. It would

be almost impossible to use wheelchairs going up and down the stairs unless someone carried the wheelchair. I found out that we could cross over to the first platform without climbing the bridge. I wheeled him to the end of the platform down the slope that connected to the ground level. This instance gave me some time alone with the teacher's husband. We had a very wonderful conversation walking back and forth to the platforms while my wife and her teacher went to the first platform using the bridge. During our conversation, I found out that the teacher's husband was teaching mathematics at St. Joseph's College in Tiruchi, Tamil Nadu, India, a well-known college in Tamil Nadu. Many years ago, I had studied at the same college for a year even though he had left by the time I started there. However, we had a lot of sweet memories of the college we shared together.

When we reached our house, we spent the next couple of days relaxing and recovering from jet lag. In the meantime, I arranged a tour for us to visit some interesting places nearby with a tour guide to take us around. We took them to the most famous temple in Trivandrum called Sri Padmanabhaswamy Temple. Trivandrum, the capital of the state of Kerala, is short for Thiruvananthapuram which means "The City of the Lord Anantha" in the Malayalam language, the city's local dialect. The name refers to the deity of Padmanabhaswamy Temple which is built in an intricate fusion of Chera style and Dravidian style of architecture, featuring high walls and a 16th century gopura. The temple is considered to be the wealthiest temple in the world and the contents are more valuable than those found in the Vatican in Rome. The temple's wealth is estimated to be in excess of forty billion dollars. The Padmanabhaswamy Temple treasures are a collection of valuable objects including gold thrones, crowns, coins, statues, ornaments, diamonds, and

other precious stones. These were discovered in some of the subterranean vaults of the temple. The exterior of the temple consists of many tiers all plated in bright, shining gold. It is a magnificent sight to behold. At night, the building is lit up and can be seen even from a great distance.

We had a wonderful visit at the temple with them. Whenever we go to India, we visit this temple often because the architecture is incredibly beautiful. Rajee and her teacher also had their rehearsals with the accompanying artists during this time. Periodically, I would ask them whether they were ready for the big event. “We’re comfortable,” they said, “but if we had more time, we would’ve been better prepared,” they continued. I told them that it would be impossible to get it perfect however much practice they had, and they should just feel confident. I wondered though, had I put too much pressure on them?

The day prior to the concert, all of us traveled by car to the city of Guruvayoor where the temple, or the concert venue, is located. The accompanying artists arrived separately, and we had arranged a convenient hotel nearby for them. The next day was the concert. I was getting nervous because I wanted to make sure everything went well.

The day of the concert, we all went to the temple. The temple was fully packed and there was a line to get in that would take more than three hours. Earlier, however, I had made arrangements through my contacts so that we had special permission to get into the temple without standing in line. I had been the beneficiary of such a privilege because I have developed a great network of powerful and influential people in India. In the U.S., I do not have any such connections, and I believe only a few at the very top have such privileges. In

the U.S., my experience had been that one could get anything done if one followed all the legal procedures without any favor from anybody. But in India, my experience had been that following the legal procedures alone would not do much good. Think of the movie, *The Godfather*.

Rajee must have been praying for strength to perform well in the evening. By afternoon, my friend Sunil arrived to make sure all the arrangements were done for the concert. He met with me and again asked whether Rajee was ready for the concert. He even suggested that if she was not up to it, we could find a professional to take her place and no one would know that it was not Rajee performing. I laughed and said to him that Rajee was well prepared, and she was very confident to perform in the concert.

The evening came and the concert hall was packed. There must have been over a couple of thousand people in the audience. I started feeling anxious thinking that Rajee would be nervous because she had never performed in front of such a large audience. Moreover, the audience was knowledgeable in Carnatic music. If she made any mistake in either Ragam or Thalam, they would easily know. Ragam refers to the pitch and Thalam refers to the rhythm and tempo.

I was both ecstatic and nervous as I watched Rajee, her teacher, and the accompanying artists on the stage getting ready to start the program. The program coordinator arranged by Sunil came up to the stage to make a welcome remark and to introduce that evening's performers. He highlighted that the concert was Rajee's first public performance dedicated to Lord Krishna as a prayer to Him.

After the introduction, the musical ensemble started their piece. Rajee was initially a bit nervous, but as time went on, she became more comfortable. She was brilliant, and I felt very proud of her. She was giving an excellent performance as if she was a well-experienced professional singer. The Carnatic music concert generally had a certain sequence of songs that the singer would perform, and she followed the same pattern. Her singing lasted over three hours without any break. The audience would go silent as she sang and would give a round of applause when each song ended. After she finished her concert, the teacher also sang a couple of songs before they sang their last song together as the program finale. They received a standing ovation from the audience for their breakthrough performance.

I was very much relieved that the program was a great success. Sunil congratulated me first and then Rajee and her teacher and said he never expected such a great performance from Rajee. He also said he was equally relieved because he was responsible for making all the arrangements through his connections.

We stayed one more day before we went back to Trivandrum. On the way back, we visited a number of temples because both Rajee and her teacher were keen to visit as many temples as they could. The teacher and her husband stayed at our home for a few more days before they went on their own to visit some of their relatives in Tamil Nadu. After a short but sweet visit, they returned to the U.S. on a separate flight. The whole trip had been wonderful for all of us and the concert performance a huge success. I have created a number of YouTube videos from the recordings of the concert and those clips garnered a number of viewers. Since then, Rajee has performed on a

number of occasions in public and continued to enjoy giving performances. Rajee's teacher recently passed away. To honor their teacher and to cherish their amazing time with her, Rajee and the other students would periodically arrange music programs in her memory.

Rajee's deep love for music showed her strength of spirit, commitment, and sense of individuality. I believe that having the freedom to pursue her own interests only made her a better wife, mother to my children, and most importantly, a woman.

An Exceptional Woman

She did brilliantly in her first public concert, she supported me in all of my ambitions, and she helped me raise our two highly successful children. She did all of that while following her dream of becoming a doctor. Rajee, my wife, is an exceptional woman.

She started as a fellow in neuro-pharmacology and a resident in neurology at USC LA County Medical Center. Once she finished her training, she decided to start her own practice instead of working for an institution. I helped her to look around for a space, and she liked the community of Thousand Oaks, Westlake Village, and Simi Valley, all fast-growing communities in the suburbs of Los Angeles. She started a single physician medical practice with two clinics, one in Westlake Village, and the other one in Simi Valley. At a few hospitals, she got admitting privileges, and in no time established a highly successful medical practice and became known as the best neurologist in the community. She is a very caring person and worries about her patients more than anyone.

After thirty-five years, she decided to close her practice to work with patients using a telemedicine platform so that she could work from anywhere when we were traveling. It had been a difficult decision for her because most of her patients had been with her for a long time, and they would miss her very much. This bothered her a lot. When we travel, her ability to provide thorough care for patients with stroke or other emergency situations was limited. This primarily prompted her to quit her individual practice and become a consultant to her patients in order to help them keep a close watch of their health situations.

We have two children. She took care of our children and tended the home while attending to her busy practice. It was incredibly difficult especially when the children were young, and my profession forced me to travel a lot. Being an on call medical specialist was particularly hard for a mother with two children like her. I know a number of male physicians who work hard as well, but most men do not do anything at home so they can concentrate only on their professional responsibilities. Such is not the case with women.

I am sympathetic to the plight of working women because I have seen it in my wife. I tried to help but what I did was minimal, and she had to take on more of the burden of bringing up my children and taking care of our home. She did an excellent job because my sons became very successful in their chosen fields. My older son, Ajay, is a neurosurgeon, and my younger son, a lawyer. Both of them went to prestigious universities for their education. They have settled down with their own families while working in their professions.

The quote, “Behind every successful man is a woman,” greatly applies to me. I was able to do so many things in my life because my wife supported all of my pursuits. I was pretty aggressive and taking all kinds of risks, and she was always by my side. She would certainly suggest some ideas, but she always wanted me to pursue whatever I wanted to do. I know that without her advice and support, none of my accomplishments would have happened.

I have never communicated this appreciation and thankfulness to her verbally before. She will probably find out for the first time how I feel when she reads this section. Extremely devoted to me, she would do anything for my benefit. She loved our children very much and took care of them the best way I could have ever imagined. With a motherly affection, she also took care of thousands of patients, even worried about them as though they were her close relatives. Many times, she would even discuss with me their conditions or hear my suggestions even though she knew that I was not trained in medicine.

I also could not have played an important role in the welfare of my parents and siblings if not for her. Coming from India, the women are generally in charge, and they want to control the activities at home including managing the husband. Compared to the way people lived in the past, where living with extended family was common, women from the southern part of India preferred to have an independent home. My wife clearly chose the modern path for our family life without forgetting our core values.

Rajee supported everything I wanted to do, and that gave me incredible strength and confidence. I took on many business ventures because of her immeasurable belief in me.

She prospered in her profession, and this meant we could continue to maintain our lifestyle even when I took on new business ventures that did not provide an immediate income. Her support helped me to explore all my ventures, and some of them became very successful. None of this would have happened without her by my side. I believe my children have recognized that my wife is my strength behind everything I do. Occasionally, she would say that I am wasting my time working this hard. As a physician, she was worried about my health, and she did not want me to go through so much stress. At the end of the day, I still have her support.

She took care of all my medical appointments, and I have never seen any of my physicians without her present. She would ask my physician all the questions, and they would make all the decisions for how to best manage my health.

In 2020, we celebrated our fiftieth wedding anniversary. We had plans of going to exotic places that year, but the pandemic halted all of our plans. Instead, we had an intimate celebration with just our family at home. We used to travel extensively for work and business during peaks in our respective professions, but we also travel a lot for the purpose of enjoyment. We have been doing it in the last few years, and we are hopeful we can resume our travels in the near future once it's safer and easier to do so.

Rajee, my wife, my pillar of strength. There is no one like her. Whatever accomplishment I achieved would not have happened but for her, and I want to take this opportunity to thank her for all her support during all those fifty years and counting.



MARRIAGE OF OUR FIRST SON, AJAY

Most immigrants have something in common with their children because they live in two cultures at the same time. Generally, when the children are out of the home and interacting with other children in school, they feel the need to be like any other children. This was much more important when our children were growing up because, in those days, there were only a handful of immigrants from India. The only time our children would see the children of other Indian immigrants was when we socialized with other Indian immigrants. When the children come home from school, they live in the Indian culture. Being a part of two cultures, in and out of the house, has created a lot of problems for these children. In recent years, many immigrants live among their ethnic communities because it reduces the difficulties for the children to shift between two cultures.

For most immigrant families, depending on where they come from, the expectation of the children's behavior varies, but they are normally much stricter than the children of non-immigrants. I have observed that local American parents give much more freedom to their children compared to the immigrants I have come across. Indian immigrant parents are more controlling of their children than Americans. They have high expectations for their children and believe that they know better than their children when it comes to what they should accomplish and should become when they grow up. This controlling behavior has caused a lot of difficulty for immigrant children.

In particular, most Indian parents would like their children to get married to people of Indian origin or people in India.

Most Indian parents believe in arranged marriage to follow the tradition of creating a union between two families with similar social and economic backgrounds. This becomes a problem when the children of immigrant Indian parents are born in America. Even in India, the number of arranged marriages is declining. To the American-born Indian children, an arranged marriage is a foreign concept. They find it difficult to accept because most of their friends do not believe in any form of arranged marriage. Most of them want to know more about their future spouses by spending time together to find out if they are compatible with each other. In most arranged marriages, the opportunity to know each other is limited. Most arranged marriages are done with the assumption that if the families are compatible, the people getting married will become compatible at some point after the marriage.

In my case, when I was ready to get married, my parents were also interested in finding a suitable girl for me, but I had already met a girl I was interested in. I told my parents about the girl through a friend of mine, and they agreed to the marriage. I would call this a partially arranged marriage.

When our son, Ajay, was growing up, we were interested in finding a suitable girl of Indian origin for him. I was more aware than my wife that the children born in the U.S. may not like the idea of an arranged marriage. But I still thought the parents could play a role in introducing Ajay to prospective candidates. If one of these introductions resulted in the possibility of marriage, that would be better than a conventional arranged marriage. Many of the marriages among the children of Indian parents are being done today through this process of introduction.

When Ajay was getting to marrying age, my wife would inquire whether he was interested in anyone, and just like any boy of his age, he would not answer. In the meantime, a relative from India came up with a suggestion. They knew a family in India who had a girl who would be a potential candidate for Ajay, and they thought he should meet her to see whether they are compatible. My wife and I thought it was a good idea. It so happened that Ajay was going to India with some of his friends after he graduated from medical school. The girl and her parents lived in Mumbai, and Ajay was already planning to visit Mumbai. Ajay and his friends went to India and Nepal to see the Annapurna base camp trekking experience. He influenced us to go to Pokhara to see the Annapurna peak, and we did go after some years, but we did not do the challenging trekking as he did.

When he was in Mumbai, he met with the girl and her parents, and they liked Ajay instantly. As far as we were told, they had a wonderful time together. Ajay came back home after his vacation in India. Prior to the start of his neurosurgery residency at the University of Alabama Medical Center, the girl he met in India and her parents visited our home in the U.S. and stayed with us for a few days. It gave Ajay and the girl more time together to get to know each other more. My wife and I could spend time together with the girl's parents and get to know each other as well.

Ajay started his residency in Birmingham, and the girl and her parents went back to their home in India. The girl's parents wanted to have the marriage completed as soon as possible. Ajay was delaying his decision because he was extremely busy with his neurosurgery residency. Among all the residency programs, neurosurgical is probably the most difficult and he

wanted to wait before getting married. We would visit with him in Birmingham periodically because it was difficult for him to take time off to visit us. Whenever we visited him, my wife would ask about his opinion of the girl and the possibility of the marriage. He had avoided the conversation on all of these occasions.

The girl's parents were eager to get the marriage scheduled, and they would frequently contact us to find out how soon they could start planning the wedding. When Ajay came home for a short vacation, my wife started asking him again about the possible scheduling of his marriage. He would not answer her directly, and she started to notice that he was pacing back and forth without addressing her questions. She then realized that he was not interested in this marriage. She told him that he should not marry this girl unless he was completely sure about it. She also told him that he should only marry someone he really liked, and that it did not matter whether the person was of Indian origin or not. This assurance from his mother gave Ajay so much relief. He became less worrisome, more jovial, and less stressed as he had been before this marriage proposal came up.

I had to inform the girl's parents that Ajay was not planning to get married for some time, and I recommended that they find another suitable candidate for their daughter. Some months later, I had a casual conversation with Ajay to find out what made him decide not to marry the girl from India. He said nothing in particular. In fact, he thought the girl was really good, and everything could work out well. But he said he always remembered an incident when he was a young boy. A good friend of ours went to India and married a beautiful girl and brought her back to the U.S. After a few months in the U.S.,

she gave him an excuse to visit India for a short time and she never came back. She decided to live with someone else in India with whom she had a prior relationship. I had forgotten about this incident, but this has made an impression on Ajay. He did not want to take the chance of marrying a girl he did not know very well.

Time went by, and one day while talking to Ajay on the phone, he told us that he met a girl who was working at his hospital as a surgical emergency room nurse named Melody. They had been going out and she seemed to be very nice. He wanted us to meet her when we visited Birmingham next. We were happy to hear this, and we told him that we would visit soon and looking forward to meeting her. We met her soon after, a very sweet and beautiful young lady. She is a white American girl from a middle-class family in Alabama. They continued to be friends and saw each other regularly for almost a year. He started seriously thinking about asking her to marry him. My wife and I were very excited about this possibility.

But Ajay was curious to know our opinion about the fact that he was going out with a white girl. He wondered what our relatives would think. We told him that he should do what was good for him and not worry about what anyone would think. He was very happy to hear that, and soon after he proposed to her. We went to Birmingham to participate in their small engagement get together. We came up with the wedding date and planned two functions, one in the Indian culture at the Hindu temple in Birmingham, and a second ceremony at a beautiful Christian church. A number of our friends and families attended both functions.

We also had a grand Indian style reception with over five hundred guests in California. Indian weddings and receptions are typically grandiose, but our son's wedding was relatively modest in comparison to most Indian weddings held in India. Ajay and Melody were married in 2000, and they recently celebrated their twentieth wedding anniversary. They are enjoying their married life with three beautiful daughters. I am so happy and proud that their oldest daughter, Jaya, who started college in 2021, has written a foreword to this memoir.



MARRIAGE OF OUR SECOND SON, RAJEEV

Our second son, Rajeev, is about seven and half years younger than Ajay. When we had Ajay, my wife and I were reasonably young. My wife was just twenty-three years old. She finished medical school, but we did not have any close relatives in the U.S. It was quite challenging for her to take care of the newborn by herself. However, we were lucky to meet a generous family who invited my wife and baby to stay with them for the first two weeks of my son's life. In that family, the wife was a nurse, and the husband was an obstetrician. They had been helping people like us for a long time. Because Ajay was five weeks premature, he needed more attention, and the family was a god-sent to us. They were sweet and caring, and they always invited us to join them for dinner when my wife and Ajay were staying in their house. They treated us like their own children, and since our parents were far away, they became like our parents. We could not thank them enough for their kindness, affection, and love.

My wife had to go to India with our baby son to finish her internship in order to get her medical degree. After coming back to the U.S., she stayed home with the baby for another two years before starting her residency in neurology. When our second son was born, she was the chief resident and, with considerable responsibility at work, she could only take four weeks for her maternity leave and had to go back to work immediately. That meant she did not have any extra time to spend with our new baby. After she completed her residency, she started her medical practice and became extremely busy right away. I tried to pitch in to spend more time with our younger boy and Ajay. My work requirements forced me to travel both domestically and internationally and this put an additional burden on my wife. However, we were lucky to have help from a sweet lady, Elsie, who was like a grandma to Rajeev. She came to live with us, and that made all the difference. We did pay her for her time, but she spent all the money on gifts for our younger son. It is interesting to look back and see the twists and turns in one's life and appreciate that there was always unexpected help when we needed it.

My wife had been able to spend more time with our older son as a baby compared to our younger son. We both believe our younger son is more independent than our older one even though both of them are highly accomplished individuals. We always wondered whether the attention and time spent by my wife when the children were very young had any correlation with their individuality and independent behavior. I'm sure psychologists would have an opinion about it.

Our younger son, Rajeev, went to the same prestigious school, Harvard Westlake, as his older brother. He was a good student, and he knew which college he wanted to attend. He applied

to UC Berkeley and was admitted to the school of chemistry, which was recognized as the number one college for chemistry in the country. He did it all himself without any help from us. He would not discuss his courses with us while he was in college, while his brother, Ajay, would discuss with me all the courses he took while he was an undergraduate at Brown University. In his third year of college, Rajeev called me one day and said that he had completed all the requirements for his undergraduate degree in three years. I said that was great, and I asked him what he would do the next year. He thought about it for a minute and said that he would stay home and take a vacation. I immediately said no way! That would not be possible, and I suggested to him that maybe he should take some additional courses and get a double major completed in one more year. He said that he would look into it and then get back to me.

A few days later, Rajeev called and said he had met all the requirements for an additional degree in political science if he took a few more courses in his fourth year. He was looking forward to it, and I was very happy to hear his enthusiasm. He completed his political science degree requirements in the next year, and he attended two graduations to get both his Bachelor of Science in Chemistry and Bachelor of Arts in Political Science degrees. We attended both graduations as well.

A few months prior to his graduation, I asked him what he planned to do after graduating. He told me that he wanted to take a year off before going to graduate school to travel around Europe. I said that would be great, provided he had secured admission to a graduate program, preferably to a law school, and deferred his admission for one year so that he

could travel. He thought about it and said it was a fair deal, and he said that he would take the LSAT exam before applying to a few law schools. Without much preparation, he took his LSAT exam, and surprisingly, he did very well. Based on his scores, he felt that he could apply to some of the top law schools in the country. He applied to six top law schools and was admitted to five of them. He was also on the wait list at Harvard University. A few of the schools he was admitted to were the University of Chicago, Columbia and NYU. The University of Chicago law school dean wrote to him saying that they would give him a free season ticket to the Chicago Blackhawks knowing that he was a hockey fan. That was tempting for him, but he wanted to live in New York. He asked for my opinion about which college I would recommend between Columbia and NYU. I told him that both are excellent. I did say that if he was more interested in an academic profession in law, he should select Columbia, but if he was interested in the real practice of law, NYU would be preferable. Whether he took my suggestion or not, he decided to go to NYU Law School but deferred for a year to start planning for his European travel.

He travelled to Europe and spent about ten weeks traveling to a number of countries before returning home. He stayed home after the trip and played guitar with a small band. The next academic year he joined NYU Law School and started living in New York City. He had a number of friends from law school, one of whom was Anita who later became his wife. He had told his mother a long time ago that she should not worry or suggest anybody for his marriage because he would determine the person and time, and he would get married.

We used to visit New York often to spend time with him, and during one of our visits he introduced Anita to us as a friend.

She was a beautiful, sweet girl, and was born and raised in Wisconsin. Her father was of Indian ancestry from Guyana and her mother was a white American from Wisconsin. We could see that Rajeev and Anita were very close, however, we never asked him anything about the possibility of their marriage. We found out that she had been admitted to Harvard Law and other law schools, but she chose NYU Law primarily because she wanted to live in New York. It may be also possible that she chose NYU to stay close to Rajeev.

A few years later, Rajeev told us that he was going to marry Anita, and they would have a small wedding in Minneapolis, close to Anita's parents' house in Wisconsin. His classmate and friend, Inder, conducted the wedding ceremony. He also said that prior to that they would have their official wedding in New York with a few friends as witnesses. He also told us that we could invite twenty or fewer couples to the wedding, and that was the same number of guests allowed for Anita's parents as well. It was hard for us to invite so few, but the wedding went well, and they are now living happily in New York. They have two beautiful, darling children, one girl and one boy, and we go often to New York to be with them.



JAYA'S SCHOOL

As you know, I have two boys, Ajay and Rajeev. My older boy, Ajay, lives in Calabasas not far from us, and my younger son, Rajeev, lives in New York. My older son has three daughters, Jaya being the eldest. The younger girls, Layla and Rose, are in tenth grade and fifth grade, respectively, and we get to see them quite often. My younger son who lives in New York has

two children, and the older one is a girl, Laika, an eight-year-old. The younger one is a boy, Leo, a five-year-old. They both go to school in New York.

My older son, Ajay, is a neurosurgeon working at the Sunset Kaiser Hospital in Los Angeles. His expertise is in all forms of functional neurosurgery, and he does Deep Brain Stimulation (DBS) surgery primarily for Parkinson's disorder or other forms of movement disorders. He performs more surgeries than any other neurosurgeon in the U.S. Due to his work schedule, his wife decided to stay home and take care of the home and children and has not pursued a career. My younger son is a lawyer, and he used to be with a big national law firm. A few years back, he left the firm and joined a small firm formed by one of his classmates, doing litigation practice in both New York and California. The primary reason he left the big firm is because his wife is also a lawyer and she is working for the big prestigious firm, Gibson Dunn. She is a partner at the firm, and her working schedule has been hectic, so they decided that if both of them have such difficult work schedules, it would be difficult for the children. They decided to spend more time with the children and reduce his workload. Presently, he spends more quality time with the kids, but when their mother is at home their children spend time with her.

The reason I want to cover this area is to show how the relationship between the parents and children work through an event. My oldest granddaughter Jaya is a beautiful girl, very hard working, and extremely smart. In many ways, she wanted to follow in her father's footsteps. Her father went to a high school in Los Angeles, called Harvard High School. This school starts at the seventh grade and is highly competitive. It is very difficult to get admission, and it is ranked at the very

top of U.S. schools. Both our sons went to that school and our younger son was in the first batch of seventh graders when they merged together to form Harvard Westlake School. Their seventh, eighth, and ninth grades are in the old Westlake campus in Beverly Hills, in the beautiful Holmby Hills. The tenth, eleventh, and twelfth grades are in the old Harvard School at the Studio City campus.

When Jaya finished sixth grade at Curtis Elementary School in Los Angeles, she decided she wanted to go to Harvard Westlake. Her mind was made up. She worked hard and took the right tests and was admitted to the school. My son Ajay and his wife did not want her to go to that school because they knew that she was going to deal with a ton of workload. My son went to that school, and he knew how difficult the curriculum would be. They did not want her to go through such rigorous environment at that young age.

Jaya tried very hard to convince her parents to send her to the Harvard Westlake School, but they were determined to send her to the Marlborough School. She was extremely sad and did not know what to do. She wanted some support. Because she was close to her uncle's wife Anita, she called her to get advice and support. Anita told her that her parents were doing the best for her, so she should go along with them. She told her that one day she would appreciate what her parents were doing. She thanked her aunt but was not happy about the outcome.

Jaya wanted to share her sadness with someone who would listen to her, so she called me and told me how hard she had worked to get into this prestigious school. She was almost crying while telling me all her frustrations and sadness. Jaya is very

close to me and calls me Apooppa, which means grandfather in Malayalam. She knew that she could get anything from me, and I knew that I was her last hope. I recognized her situation and told her that she should always listen to her parents, just like her aunt had said.

I told her to tell her parents that she would go to Marlborough School, but that if she went to Marlborough and did not do well, they should not blame her because she did not want to go there in the first place, so she lacked the motivation to work hard. She could tell them that she would certainly do it if that was what they wanted for her. I also told her to tell her parents that if she were to go to Harvard Westlake, she would be working hard to prove to her parents that she was capable of meeting the rigorous requirements and excelling in the highly competitive environment. She promised that she would try hard to be one of the best students at Harvard Westlake. I told her to tell them that she would do whatever her parents want her to do given all the possibilities she laid out on the table.

She was so thrilled to hear this from me because she knew there was now a good chance that she could go to Harvard Westlake. She immediately tried to convince her parents again, and I made her promise not to say that she got this idea from her Apooppa. I always want all my grandchildren to do whatever they wanted because I have great confidence in them, and I believe that such freedom will generate more responsibility and strength within themselves. When she told her parents, my son immediately realized that this idea must have come from me. He then called me to ask me what was going on, and I told him that if she wanted to go to Harvard Westlake, he should let her go because that was what she

wanted to do. I also told him that this would motivate her to become more confident to make her own decisions.

Finally, her parents lost their argument and they decided to send her to Harvard Westlake. She was immensely happy and called me to thank me profusely. This was in seventh grade, and she has now graduated from high school with outstanding honors. She is about to start college at Oxford University in the United Kingdom.



TRAVELS

Obviously, in my professional life, I have traveled all over the world. During those travels, I was fortunate to have some vacation time to see some tourist attractions. However, prior to the last 15 or so years of traveling, I have primarily travelled with work related professionals. In this section, however, I am sharing about the trips I have taken with my family, which are primarily for enjoyment, exploration of new cultures, learning new ways of living conditions, and enjoying new and different types of food. While on vacation, I try to take as many pictures as possible and I have become proficient in photography. I also convinced my wife to travel with me even though she still worked in her medical practice, which made it difficult for her to handle our travel needs and her medical practice needs.

She was not that interested in these travels because she was extremely dedicated to her work, and she was more concerned about her patients who would not get adequate medical help if she was not there. In my case, I did not have any problem working because I could work from anywhere as long as I

have access to good Wi-Fi and a phone. She, on the contrary, used to see patients to conduct in-person physical exams. She also admits patients to the hospital and does periodic rounds. However, in recent years she has significantly reduced her in-person practice and switched to telemedicine. This has helped her to provide consultation to her patients from practically anywhere.

What I've learned from my travels is that life is a continuing education. I've learned about history, geography, all kind of cultural activities, new languages, psychology, and economic conditions of various regions of the world. There are also cultural differences we can learn from and enjoy. These travels gave me a great opportunity to widen my knowledge in certain areas which otherwise would have been practically impossible. Another interesting aspect is that by meeting people and talking to them, I'm able to observe the conditions in which people make a living in various other parts of the world. This has given me the opportunity to compare the conditions to those found in America. Based on my observations, I came to a conclusion that those who travel outside America can appreciate how the quality of life is better in the U.S. and the societal infrastructure is far superior in the U.S. compared to most places in the world. But people who have not traveled outside the U.S. may not have an appreciation because they have not witnessed such conditions themselves.

There are places in certain parts of the world that are only nearly comparable to the infrastructures that we have in the U.S. These include some developed cities in Europe, Australia, Japan, Singapore, and certain cities in the Middle East. However, U.S. infrastructure remains far more superior compared to the rest of the world. It is true that we can improve quite a bit, and

I believe it is high time for us to have a national undertaking to make the necessary investment to modernize the U.S. infrastructure throughout the country.

Another thing I was able to compare and appreciate is our emergency response system such as fire or ambulances. During the coronavirus pandemic, the medical care in the U.S. is far superior to what is available in many parts of the world. Many affluent people from all over the world come to the U.S. for their medical treatments. I know this personally because my wife and my son have treated a number of patients coming from the various parts of the world for treatment in the U.S. Of course, the cost of medical care in the U.S. is much more expensive than the countries they come from. Many of these services are available in their countries as well, but they believe that the quality of care is far superior in the United States.

I wouldn't be having these observations had I not seen what life is like outside of the United States. Traveling helps improve our thought processes such as how it improved mine. According to the United Nations, there are one-hundred and ninety-five countries in the world, and we have traveled to over ninety of them. We have more countries to go, but the countries we have traveled to cover about ninety percent of the global population. We often travel to places we have been to before, specifically in Europe. For example, we have traveled to Italy a number of times, because we feel like it is our second home. The wonderful food and friendly people make Italy a wonderful place to visit, and the different regions each have their own charm.

Our traveling experience wouldn't be complete without exploring our own land. We have traveled extensively within the vast lands of the U.S. where so many incredibly beautiful areas and different scenic wonders abound. I have traveled to all fifty states in the U.S., but I have always lived in California. We generally go to Hawaii at least two or three times every year, because going to Hawaii is like going back to India in the state of Kerala. Kerala also has lush green landscape, filled with beautiful natural scenery, waterfalls, rivers, and tropical weather. Instead of going to India, we go to Hawaii because of the shorter flight. My wife prefers Maui, but I like Kauai, so we alternate between the two islands. My wife likes Maui's fewer rainfalls compared to Kauai, and I like Kauai because I actually enjoy the rain. When it rains in Kauai it is for a short time and the sun comes back with a beautiful blue sky. Kauai is also much greener, with more nature and is less populated and more similar to Kerala in landscape.

We have been to other islands as well, and to Honolulu a number of times. On the island of Kauai, we always stay in Princeville, which is just gorgeous. If you have not gone there before, I would strongly recommend it.

When travelling outside America, there are certain things one has to be careful about. For example, we travel to India at least once a year. When one goes to India, drinking tap water is not recommended. People often get seriously ill from the water. Generally, tap water in India contains certain types of viruses or bacteria which are potentially dangerous to non-natives because they do not have the required immunity to these viruses or bacteria. Many of the good hotels which cater to foreign tourists are aware of this problem and they take the necessary precautions to wash vegetables in purified water to

avoid any possible contamination. In most places they are not that careful. This is also true when one drinks alcohol because sometimes ice cubes have been prepared using local water. This water problem is not unique to India. Many places in the world have similar or even worse problems due to water contamination.

During our travels, in addition to taking a lot of pictures, I have started collecting souvenir spoons from the places we visit. My wife started doing this a few years ago, and now I also have been doing it religiously. I have a collection of over three hundred spoons from ninety plus countries, and we have a display rack at our home where these spoons are kept. Sometimes when we look at the spoons in the display rack, it brings back the memory of the place we visited and even the souvenir shop where we bought the spoons.

I have also taken over fifty thousand pictures on my mobile phone, and most of the pictures are nature oriented, but we take family pictures as well. Recently, I was going through some pictures we took when we were in Dubrovnik. Just looking at the Dubrovnik pictures brings back all our travel related activities in the country of Croatia. In addition, it brings back memories of the various lessons we have learned while traveling to those places.

I even continue to take pictures of the same places where we have gone before. But each time I take pictures, it gives me a different perspective due to different times of the day, different seasons, lighting conditions, wind directions, and many other reasons. Some of them are incredibly beautiful. For example, we go to Tuscany quite often, and we try to go in

different seasons. This allows me to take pictures that reveal different qualities about the landscape.

As much as we love traveling to different countries around the world, we always look forward to returning to India. India has many beautiful places to visit, and we have traveled to several of them, from the cape of Kanyakumari, the tip of India, to Kashmir, which is the northernmost part of India just below the Himalayan mountains. Kanyakumari is very close to where my wife's family is from; and where we also have a farmhouse. There are still many places in India we would like to travel to, and hopefully we can do that in the coming years. Just after our marriage in 1970, we had our honeymoon in Kashmir. At the time, there was no problem related to the ongoing conflict between India and Pakistan. We had a wonderful time staying on a very luxurious houseboat in Dal Lake, Srinagar, in Kashmir. In those days, Kashmir was extremely clean, and the natural beauty was mesmerizing.

The houseboat where we stayed was fabulous and had four bedrooms, but we only used one. We had a cook onboard preparing delicious meals for us. Attached to the boathouse was a small boat which was used to travel in the Dal Lake. We had a dedicated car for us with a driver and an assistant to bring our picnic meals when we took day trips to various places in Kashmir. Every day, they would ask us what food we liked and also set up a picnic table for us. We were treated in a royal fashion, and while we're not used to it, we certainly enjoyed it. We learned that this is how the rich and famous live regularly. Our houseboat was generally used by celebrities and movie stars from Bollywood. We were very young, and I was just a PhD student in the U.S. I was not making much money, but I did have a credit card. I charged everything on

my credit card, and they certainly got paid. They all must have thought we came from a very rich family. We had a fabulous time staying there and visiting some of the most beautiful places. Unfortunately, I have not had a chance to go back to Kashmir. Even though I wanted to go a number of times, each time people advised me not to go because it was not safe. I still hope to visit there again though.

Of all the places where we have traveled, friends often ask which is the best travel experience I have had. I typically say that our safari trip to Kenya and Tanzania is my best experience so far. We went with another couple, Joe and Susan. I did not do the planning. Joe did all the planning, reservations, and the full itinerary, and he did a superb job. We had a wonderful time, and I would recommend this trip to anyone looking for a truly unique experience. We had a dedicated vehicle and driver throughout the trip, and we stayed at the best hotels near the parks. We went in July at the peak time for animal migration. As a result, we saw thousands and thousands of animals passing by our vehicle. My primary job was taking pictures, and I have thousands of them. I would love to go back, but my wife did not enjoy seeing animals kill each other. I tried to explain to her that this is how nature works, but she still did not enjoy it.



ANANDA FOUNDATION

Many Americans are much more charitable than people in other parts of the world. There is a tax advantage in the U.S. when you give to charity especially to non-profit charitable institutions recognized by the Internal Revenue Service. One gets to deduct the amount of the donation from their income,

however, there are some restrictions regarding how such deductions can be applied. This encourages people to give to charity.

One of my good friends, Gerry Chase, has been my advisor and has told me that it is a great thing to give to charity. But if one can institutionalize the giving, that creates an opportunity for the person's children and grandchildren to continue to participate in the charitable activities once you have died. Based on his advice, we formed the Ananda Foundation. There are a number of laws associated with such foundations. For example, generally, a foundation is private. In a private foundation, the only person who can contribute to it is the person who formed it or his family members. A private foundation cannot collect money from other people, and the purpose of a private foundation is not to solicit contributions from others. Specifically, a private foundation is an institution to which a family can contribute all or part of their assets, and the foundation can contribute to any other charitable institutions.

One of the requirements of a private foundation is that every year it has to give a minimum of five percent of the total assets of the foundation to one or more other institutions that engage in charitable activities. There are also foundations which engage in direct charitable activities. Non-operating private foundations give charitable contributions to operating charitable institutions. Since private foundations have to contribute five percent of their assets every year, either the assets of the foundation have to be invested such that it generates more than five percent return on the investment or the return on the investment is less than five percent. Then, the difference between the return and the contributed

amount has to be contributed by the person who formed the foundation to keep the total assets of the foundation without any depletion. There is no requirement that the person who formed the foundation should continue making contributions to it.

However, for an operating foundation, there is no requirement to give any contribution to other operating charitable institutions. When the Ananda Foundation was formed, it was a typical private foundation for many years, and every year we were contributing a minimum of five percent of the foundation assets to other operating charitable institutions. In our case, the assets were growing at the rate of more than five percent, and, as a family we were contributing additional funds to the foundation. As a result, the foundation assets kept on increasing even though we were contributing five percent of the assets every year regularly.

The general rule is that one can apply to transform a private foundation to an operating foundation status after five years of existence. However, you need to provide the details of the operating activities to qualify for the operating status. There are also ways to apply for operating status before meeting the five-year requirements, but the Ananda Foundation did not do that. We became an operating foundation a couple of years after the five-year period. Before we became an operating foundation, we were primarily contributing to university endowments or scholarship funds or entities like the Red Cross, Salvation Army, and other similar charitable institutions.

Since the Ananda Foundation has been converted to an operating foundation, we have been providing direct

charitable activities to people all over the world. We have been concentrating primarily on three related activities.

The first one is that through the Ananda Foundation, family members who are physicians and some friends of the family who are physicians are providing second opinion services to deserving patients throughout the world, mainly in the U.S. and in India. We have reached a strategic relationship with a U.S.-based company called SecondOpinionExpert, Inc. with whom I have a relationship to license their technology to provide second opinion services to patients all over the world through the tele-medicine platform the company has developed. The foundation pays for the licensing relationship to the company. The physician services in this case are not compensated and such services are voluntary by these physicians.

In the second category, the foundation has a relationship with the company to provide second opinion services in any field of specialty through the company's panel consisting of over 500 physicians to deserving patients without any charges to the patients. The cost of such services is reimbursed by the foundation to the company.

The third area of the charitable work done by the foundation is to help veterans in the U.S. This activity is done in collaboration with another operating charitable foundation, Cloverline Foundation. Both foundations provide free services to veterans who have problems obtaining adequate medical services as well as receiving disability compensation from the Veterans Administration Services. These foundations intervene and provide second opinion services through the company free of any charge, but the foundations compensate the company for their services such that the advocates representing

these veterans can make formal claims against the Veterans Administration. Such veterans have obtained one hundred percent success rate from the Veterans Administration. I am extremely proud to help U.S. veterans through our foundation. However, we have not publicized this help to veterans because our resources are limited. We are considering raising additional contributions from the public as a deductible charitable contribution to such contributors to expand our offerings to veterans.

Because of the tax advantage of contributing to charity, many families choose to contribute to charitable activities instead of paying taxes to the government. Furthermore, certain types of assets such as retirement funds have, unfortunately, double taxation. If these funds are subject to estate tax, one has to pay the 40% estate tax first. In addition, when the funds are received by the beneficiary, this income will have the highest tax rate at about 50% combining both federal and certain state taxes. Because of the high tax rate for such assets, many people would prefer to contribute to deserving charitable activities through their own foundations or other institutions they like.

In addition to forming and contributing to the Ananda Foundation, we have created a Charitable Trust in India, Achuthan Nair and Easwari Amma Charitable Trust, primarily for providing charitable services in India. This is in memory of my wife's parents, and we have contributed to the trust the property which was inherited by my wife from her parents. Additionally, we have contributed sufficient funds to create a reasonably large structure on the property, and the trust is using the facility to provide various charitable services. What

we have done is giving back to the community, which has helped us in achieving our goals and aspirations.

When we give contributions to other charitable institutions, much of our contributions may end up as part of their administrative expenses rather than directly benefiting the deserving people. But when we provide services to the community directly, the charity reaches the people. We have chosen that path through both the Ananda Foundation and the Indian Charitable Trust.



PAANINI FOUNDATION

In addition to the Ananda Foundation, I have recently become involved with the Paanini Foundation. An old friend of mine, Babu Sivadasan, formed a new company in the artificial intelligence and automation sector called Paanini, Inc. They are currently marketing with the name JIFFY.ai.

The founders of the company, with the guidance of Babu, came up with a very ingenious and morally commendable idea to contribute twenty percent of the equity of the company to a charitable foundation. This is how the Paanini Foundation was formed. Because of my close relationship with Babu and my experience of running a foundation, he reached out to me to be an advisor to the foundation and join the board of directors. I am extremely proud to be part of this charitable endeavor.

The founders of this company recognized that there will be significant changes to our way of life due to the advancement of developments in artificial intelligence and automation,

both in a very positive way and negatively. Since they felt that they would be causing the elimination of certain jobs, they have created this foundation which would develop plans to find suitable alternate jobs for displaced employees as well as to create an environment to provide new job skills through education and training.

I have been fortunate to work with a very dedicated Paanini Foundation team to map out a plan that will be extremely helpful to employees; but will also benefit those individuals who will become redundant because of automation and artificial intelligence.

The Paanini Foundation has begun to develop a platform that has many artificial intelligence tools and several automation features through which the employees seeking to change or find new jobs can find a suitable match through this platform. There are a number of companies that provide these services but all of them are based on a fee structure. In most cases, the employers pay the fees for these services. However, the services of this foundation will be free for both employees and employers. This is a charitable service to both employees and employers whether the employees lost jobs due to automation or not.

Another area of development is to work with educational institutions and training centers to come up with plans to provide new skills that are needed in the world of automation, and to help displaced employees find new jobs. Such training will be made available, free of charge, to the employees who lost jobs due to automation and artificial intelligence systems. The educational institutions and training centers will be compensated by the foundation for their help. The

foundation is also developing platforms to facilitate online training in certain fields and these platforms will be able to award certificates of completion once the students have met the requirements.

The foundation has a very aggressive and ambitious plan, but we are still in an early stage. I believe this foundation will encourage other entrepreneurs to do similar charitable services.

In addition to participating with these foundations and our family charitable trust, I am also working with a charitable trust created by my undergraduate college classmates at our fiftieth annual get together in Coimbatore, India. They have established a trust from which a few selected students are given scholarships for each year of their undergraduate education. The scholarships are provided from the established funds by utilizing the return on the investment only and without depleting the principle of the trust funds.



GIVING BACK AND PAYING IT FORWARD

I am probably one of the luckiest people to have such a loving family. My parents were loving to me, and my grandparents were more loving to me. I always cherish sweet memories of living with my parents and my grandparents. My relationship with my siblings, two brothers and one sister, could not be any better, and I have been instrumental in helping all of them migrate to the U.S. and settle in areas close to me.

My immediate family consists of my loving wife and our two loving children, and their family are very close to me. We have five wonderful grandchildren, four granddaughters and one grandson, and we get to spend time together often. It has been made difficult by the pandemic but as more Americans are getting vaccinated, we are now getting together a few times even though not as frequently as we did pre-pandemic.

I am thankful for the opportunity to give back for receiving all the privileges and benefits our family has been enjoying after coming to the U.S. and being part of the American family. As I have stated many times, the opportunities for me in the U.S. have been incredible. I certainly owe that to the spirit of freedom and the mentality to take the necessary risks which I have learned from my fellow Americans. I have been successful beyond my imagination, and I am thankful to the country which adopted me without hesitation.

I have attempted to give back as much as I can to the community in the U.S. and, to some extent, to the community in India. I have played a part in creating successful companies which have a market value of about \$10 billion, and I have created well-paying job for about 8,000 people around the world. Through the Ananda Foundation, our family has been able to provide primarily free medical services to deserving patients in the U.S. and around the world. We have extended this charitable drive in India through a charitable trust called the Achuthan Nair and Easwari Amma Charitable Trust, in the memory of my wife's parents. As a volunteer with the Paanini Foundation, we are able to help employees who will be replaced by artificial intelligence, robotics, and automation. Additionally, through my volunteer work with the Stanford Seed Transformation Program organized by the Stanford

University Business School, we are able to help companies in many African countries and India. And finally, I offer my time to give periodic lectures to both business and law students at universities.

PART V



**A GLEAN TO THE FUTURE
AND TIMELESS PIECES OF
WISDOM**



BOLD PREDICTIONS

I will start with some bold predictions for the future based on my experiences. In the next twenty years, the following five major changes will happen.

The first is the deployment of autonomous vehicles with self-driving electric vehicles throughout the U.S. and many parts of the world. It will start when most of the U.S. long hauling trucks are converted to being autonomous. This will impact hundreds of thousands of drivers, and it will be difficult for these drivers to get suitable replacement employment because of their lack of other skills. There are about 3.8 million workers in the U.S. in these occupations. These workers are predominately male, older, less educated, and compensated less than the typical worker. Motor vehicle operator jobs are most concentrated in the transportation and warehousing sector. The society that benefits from these autonomous vehicles has a moral obligation to assist these workers.

The second major change will also be in the area of employment. Many systems employing AI, robotics, and automation will be deployed through the U.S. and other developed and developing countries. Many workplaces in many different fields will replace millions of employees with AI. This process has already begun; however, it has not had a major impact yet. In the years to come, most of the less skilled labor force will all be eliminated causing a devastating unemployment situation that has not been witnessed before. However, this will also create a great demand for knowledgeable workers with specific skills. I predict that the loss of jobs will be significantly greater than the number of newly created jobs. There are some forecasts

that estimate 400 to 800 million jobs worldwide could be automated by 2030. Research institutions are studying the possible social impacts due to this major change. History teaches us that during the industrial revolution and during the digital revolution, similar fears of job loss were present. But in both cases, there were more jobs created than the ones which were lost. This new revolution may be more challenging especially for employees who are less skilled.

The third major change will be in the healthcare services space. The COVID-19 pandemic has caused significant increases in tele-medicine consultations with physicians instead of visiting physician offices when there are no special procedures to be performed by the physician. Even after the end of the pandemic, consulting with physicians online will become the normal way of providing health services and will save an enormous amount of time. Eventually, when tele-medicine is fully evolved, physicians may be able to reduce their office space which will save them money. This will have significant implications for the commercial medical office space segment of the real estate business. When tele-medicine is the main platform to deliver healthcare services, there will be significant changes to the concept of primary care clinics with physicians rotating days in the office and sharing space.

There will be major advantages when tele-medicine is fully implemented, for both patients and physicians. Digitized medical records, modern practice management platforms, and online payer systems will allow physicians to operate more efficiently with fewer opportunities for error. Advanced tele-medicine technology platforms can be used virtually anywhere, at any time. This gives practices the option to offer extended hours or even weekend operations without

requiring the office to be staffed. Studies show that patients are more likely to comply with physician recommendations for follow-up appointments if those recommendations can be conducted via video. Video visits are also an effective way to increase patient engagement in lifestyle coaching, medication monitoring, and the management of chronic conditions. The future of tele-medicine is very bright, and technology is continuously improving. New innovations will bring better care to patients and cost of medical care will be reduced in the long run.

The fourth major change will also be in the healthcare space, specifically in the U.S. More than two-thirds of Americans get their health insurance from private insurers. More than half of all insurance coverage is employer-provided through private insurance. A smaller percentage of people get health insurance through Medicare and Medicaid, based on various studies that the U.S. spends much more on health care than other developed countries. The chief reason is not greater healthcare utilization, but higher prices. Studies also show that the U.S. spends about \$10,000 per individual compared to Canada and many other European countries that spend about \$5,000 per individual. According to the World Bank, the U.S. has a life expectancy of about 79 years, while Sweden's and Canada's is about 82 years. The U.S. healthcare cost per year is about \$3.6 trillion and is increasing faster than the cost of living every year. It is believed that the U.S. healthcare system encounters numerous examples of unnecessary administrative complexity from filling out duplicative intake forms to transferring medical records between providers to sorting out insurance bills. This administrative complexity, with its associated high costs, is often cited as one reason the U.S. spends twice the amount per capita on healthcare compared with other high-income

countries, even though utilization rates are very similar. It is clear that there is enormous waste, and it is inevitable that we come up with plans to eliminate much of the waste.

Under the Affordable Care Act, insurers that sell individual and small group health insurance coverage must spend at least 80 percent of premiums on medical claims and quality improvements for members. No more than 20 percent of premium revenue can be spent on administrative costs, including profits and salaries. Therefore, insurance companies prefer to have large medical claims that help them make larger profits. I believe that the cost of healthcare in the future will be unsustainable if intermediaries are continuously allowed to profit excessively from the business of healthcare. My prediction is that there will be a major change in healthcare administration and the role of intermediaries will be substantially reduced in the future. Our healthcare system can become similar to the systems adopted in other developed countries such as Canada and the European Union.

The fifth major change will be due to the effect of global warming. I do not believe that anything we do now or in the near future can make a significant impact on this outcome. However, countries should take the appropriate measures to reduce the carbon content in the atmosphere on an ongoing basis to keep the Earth habitable in the future. Evidence clearly shows that Greenland is warming, and the continued warming of Greenland will cause its ice sheet to melt at accelerated rates. In addition, this level of surface warming may also melt the ice sheet of West Antarctica. This would submerge a substantial number of islands and lowland regions. Coastal lowland regions, *vulnerable* to sea level rise, include significant parts of the U.S. Gulf Coast and Eastern Seaboard, much of

the Netherland and Belgium, and heavily populated tropical areas such as Bangladesh. The Maldives will probably be fully under water. Climate change also poses risks for cities near the ocean. Places like Miami, New York City, New Orleans, and Venice could flood more often or more severely as the sea level continues to rise. These events will happen more often during the next twenty years and beyond.



WHAT'S NEXT FOR AMERICA?

I would like to reflect next on my understanding of the concept of democracy in the U.S. based on my experiences living in the U.S. for over fifty years. It is generally understood that the word democracy refers to a form of government in which people choose leaders by voting. The United States is a representative democracy because the public elects individuals to represent them at the governmental level. The U.S. is a democracy, but it is not a true democracy. The U.S. is also a constitutional democracy, meaning that the functions and roles of the government are governed by the constitution that also protects the rights and privileges of citizens regardless of whether they are in the majority or minority.

The elected members of the U.S. government do not necessarily reflect the concept of the majority of the voters. In the U.S. Congress, the representatives are elected in proportion to the population in their state, and the majority of the people elect their representatives. However, in the U.S. Senate, because the Senate has favored small states over large ones since its inception, it does not reflect the representation based on population size. Studies show that more than half of the

U.S. population now lives in just nine states, meaning a large swathe of the country is represented by just 18 senators, and less than half of the population controls about 82 percent of the Senate. Some other studies estimate that by 2040, only eight states will be home to half of the nation's population, with about 70 percent of Americans living in 16 states. At that point, a mere 30 percent of the population will control 68 percent of the Senate. This would be far from the real concept of democracy based on the rule of the majority.

Similar issues exist in the election of the President of the U.S. because the majority of voters cannot elect the President. Instead, it is the electoral college that elects the President. The number of electoral college votes from each state is roughly in line with the size of its population. Each state gets as many electoral college votes as it has lawmakers in the U.S. Congress, both representatives and senators. Therefore, this also favors small states, and in fact, two out of the last five presidential elections were won by candidates who had fewer votes from the overall voters than their opponents.

Another interesting observation I have had is that most of the elected members of the government are in support of protecting the interests of wealthy people despite only representing about one percent of the voters. It is also interesting to observe that many of the 99 percent of the voters elect their representatives to the government against their own interests, but this is more obvious in the states which are economically depressed. I have heard from some of the voters among the 99 percent who vote against their own interest say that they do it because they do not want government to do any service that promotes the welfare of less privileged people and minorities, even if those actions could negatively impact them. Many of

these voters are also influenced by propaganda through media funded by the top one percent and other powerful institutions such as churches and corporations.

Being a student of law, and especially a student of constitutional law, I have had the opportunity to learn more about Supreme Court decisions over many years. Many Supreme Court decisions are also in favor of protecting the interests of wealthy people in the U.S., and wealthy people have been successful in packing the Supreme Court with conservative justices. Overall, my conclusion is that the U.S. looks very democratic from the outside, but in reality, it is controlled and governed by a privileged few just like many third world countries.

As I have previously said, I have witnessed a number of history-making world events such as the riots in Los Angeles after the murder of Martin Luther King Jr. in 1968, the changes in the political landscape of the U.S. after the murder of Bobby Kennedy, also in 1968, the resignation of President Richard Nixon due to the Watergate scandal in 1974, the end of Vietnam War in 1975, the 9/11 attack on the U.S. by Islamic terrorists in 2001, the beginning of the Iraq War in 2003 that ended in 2011, the election of the first black President of the U.S., Barack Obama, in 2008, the 2016 election of Donald Trump whose campaign was grounded in nationalism and anti-immigrant rhetoric, and the beginning of the COVID-19 pandemic in early 2020.

Many of these events have had a profound impact on me personally. I have learned a number of lessons that have helped me to change the way I think due to these events. It is interesting to explore my understanding of the election of Donald Trump and his time as the President of the U.S. as

well as the reasons he lost his election for a second term in office. Barack Obama's presidency was historic because he was the first African American to become the President of the U.S. and it clearly signaled that changes had occurred in the U.S., especially for the Black people. It is true that changes happen slowly, and more changes are still needed to bring equality between different races in the U.S. Even though Obama's presidency navigated the 2008 economic crisis and created an economic recovery, I believe that there was a backlash among the many white people because they felt that they were losing the status of being in the majority.

Some sociologists have suggested that many whites feel frustrated and betrayed, as though they are now strangers in their own land. In the Trump administration, they saw a white man who brought them together to take their country back. Some sociologists think that this is responsible for white people at Trump campaign rallies holding signs with slogans such as "TRUMP: MAKE AMERICA GREAT AGAIN" and "SILENT MAJORITY STANDS WITH TRUMP." I have heard from some of my white friends that they genuinely feel that they are discriminated against because they are white, and that all the benefits and preferences in college admissions to job placements go to the non-white people now. Whether this is true or not, this is a widespread view among many whites, and they hoped Trump would save them from such discrimination. The fact that Trump captured about 58 percent of the white votes clearly indicates that they believed Trump would save them from their fears and frustrations.

After Trump came to power in 2017, he made major changes to the federal judiciary, and was successful in appointing three Supreme Court justices, and about 300 other federal court

judges. Most of them have a very conservative point of view. These appointments will certainly have long-lasting impacts on the judiciary, and most future decisions will likely be extremely conservative. Most newly appointed judges are strict constructionists who believe that every law and constitutional provision should not be subject to interpretation but applied strictly as written. This means that, under strict constructionism, there is no room for considering the context in which the law was made or for taking into account the specific circumstances of any individual case.

Trump also made significant changes to the tax code with the Tax Cuts and Jobs Act bringing sweeping changes to the tax code. For the wealthy, banks, and other corporations, the tax reform package was considered a lopsided victory, given its significant and permanent tax cuts to corporate profits, investment income, estate tax, and more. Financial services companies stood to see huge gains based on the new, lower corporate rate (21 percent), as well as the more preferable tax treatment of pass-through companies. Some banks said their effective tax rate would drop under 21 percent. For individual taxpayers, the changes are temporary, expiring after 2025, as is the case with most personal tax breaks included in the law.

In the area of foreign policy, Trump took a nationalistic and, to some extent, an isolationistic approach with our allies. Trump continued to support NATO but withdrew from the Paris Accord on global warming. The Paris Accord's central aim is to strengthen the global response to the threat of climate change by keeping global temperature rise well below 2 degrees Celsius above pre-industrial levels, and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Also, the U.S. announced its withdrawal from

the Joint Comprehensive Plan of Action, also known as the “Iran nuclear deal” in 2018. Trump also launched a trade war to pressure China to implement significant changes to aspects of its economic system that facilitate unfair Chinese trade practices. These include forced technology transfer, limited market access, intellectual property theft, and subsidies to state-owned enterprises. Even though the trade war must have been started with the intention to help the U.S. economy, it is not clear whether it has helped or hurt us.

Immigration was a major area of interest to Trump, and he attempted to restrict immigration in various ways. He created the family separation policy, the travel ban from a majority of Muslim countries, built and reinforced the Mexican border wall, gutted the asylum and refugee systems, and tried to abolish DACA (Deferred Action for Childhood Arrivals). Trump stated his desire for more immigrants from countries like Norway (read: rich and white) to come to the U.S.

However, Trump’s attempt to get reelected in 2020 did not succeed because of his administration’s failure to control the spread of the COVID-19 virus, causing over ten million people to get the virus and causing the deaths of over 600,000 people, as of this writing. Even with all the pandemic issues, the largest number of voters in the history of the U.S. voted and Trump received over 73 million votes whereas Joe Biden, who was elected, received over 80 million votes. We will have to wait and see what changes will come from the new Biden administration. What’s next for America? That’s what we will all find out.



RECOGNIZING OPPORTUNITIES

In my life's journey, I was privileged to have a number of opportunities to be able to identify when one is knocking on my door. Unfortunately, many do not recognize such opportunities. This reminds me of a story I heard when I was young. There was a fisherman who was a great devotee of Lord Krishna, and he believed that Lord Krishna himself would protect him from any disaster. He had been going fishing alone in his boat for a long time, and he was a good fisherman. He would catch plenty of fish each time he went to sea. One day he went to sea and it was a cloudy and windy day. He saw another boat coming from the opposite direction. The driver of the other boat told him that the sea would be getting rougher, and he should turn around. The fisherman did not listen to him and kept on going out to sea. Soon after, another boat came, and that driver also told the fisherman that he should immediately turn around because a storm was approaching. If he did not turn around, he would not make it back. The fisherman did not listen because he was confident that he could manage without any problem. He kept going forward, and the storm started to hit. Giant waves rocked his small boat as he struggled to go forward. Suddenly, another boat approached, and the driver told him that the storm was going to be very dangerous. He should abandon his small boat and get into the other boat, and the driver would take him back to shore. The fisherman was adamant and said to the driver that he could take care of himself, and he did not want the boat driver's help. In his mind, he thought being a great devotee of Lord Krishna would protect him in all circumstances. The fisherman continued to go forward, further out to sea. The storm became unbearable, and his small boat capsized. He went under water and drowned.

Being such a devotee, his soul ended up in heaven and he had a meeting with Lord Krishna. The man was upset with the Lord and asked the Lord why he had not been protected from the storm. The Lord smiled and replied by asking him whether he remembered the first boat that came by him and the boat driver telling him that there would be danger in the direction he was going due to the storm. Krishna asked him whether he listened to the boat driver. The fisherman told the Lord that he did not need to listen to him because he knew that the Lord would protect him. Then the Lord smiled again and asked him whether he remembered another boat came by and told him that if he did not turn back, he would be in danger due to the storm. Krishna asked him whether he did what the second boat driver told him to do. The fisherman again told the Lord that he did not do as the second boat driver told him to do because the Lord would protect him. Then the Lord smiled again and asked him whether he remembered that another vessel came to his boat and that the driver told him to get into his vessel so that he could take him to the shore. Krishna asked him whether he did what the third boat driver told him to do. The fisherman told the Lord again that he did not do as the third boat driver wanted him to do because the Lord would protect him. The Lord smiled again and told him that the Lord was the one who sent all the three boats and the boat drivers to protect him from the danger. The Lord also told him that he did not recognize the help of the boat drivers and missed the opportunity to be saved, not once, but all three times.

The moral of the story is that it is important to recognize when opportunity knocks on the door. I am not sure whether I have taken all the opportunities that came my way, but I am sure that I have taken advantage of many opportunities that were revealed to me.

As I have said many times, I had the fortune of meeting a number of brilliant minds and learning from them. One such meeting was accidental. This was when I was an undergraduate student at Coimbatore Institute of Technology, and I would visit my parents during the holidays. My parents were staying in Delhi because my father was a member of Parliament in Lok Sabha. The travel from Coimbatore to Delhi was by train. There were air services, but it was very expensive, and I did not travel by air during such vacations. There were no direct trains from Coimbatore to Delhi. First, I had to go from Coimbatore to Madras and take another train from Madras to Delhi. It was a long journey, and the travel time from Madras to Delhi was about thirty-six hours. On such long journeys, I try to travel first class so that I'm able to sleep better even though the first-class tickets are expensive albeit less than the cost of airline tickets. On this particular occasion, I had a ticket for a two-berth booth in a compartment, and I was assigned to the upper berth. I did not know who the other passenger would be, but it would turn out to be a wonderful surprise.

On this particular trip, I reached Madras from Coimbatore early one morning, and I had several hours to spend in Madras before taking the next train to Delhi. As I was very familiar with the city of Madras, I could spend time visiting a few of my favorite places alone. Since I had only a small bag, it was easy for me to travel around and kill time. I was back to the train station early and found my compartment. I had bought a few books and magazines and newspapers from the train station, so that I could read them during my train journey. As I settled down in my seat in the booth, the other passenger arrived, and he looked very familiar. Immediately, I recognized that he was one of the most famous leaders of Tamil Nadu, a southern State of India. He was Annadurai, and he was also

a member of Parliament in the Rajya Sabha. I was pleasantly surprised to travel with him. Obviously, he did not know me. But I introduced myself to him as the son of Ananda Nambiar, and he knew my father very well. He said that he was happy to meet me, and happy to travel with me.

Annadurai was the most popular leader in Tamil Nadu in 1967, and he would become the Chief Minister of the State of Tamil Nadu. He was the Chief Minister for only two years because he died in 1969 at the relatively young age of 59. He started his political life as a disciple of Periyar, the founder of the Dravida Kazhagam. During his days in Dravida Kazhagam, Annadurai had supported Periyar's call for an independent Dravida Nadu. The claim for such an independent state stayed alive in the initial days of Dravida Munnetra Kazhagam (DMK), which was founded by Annadurai. Annadurai said in the *Rajya Sabha* that Dravidians want the right of self-determination: "We want a separate country for southern India." Annadurai and the DMK changed the call of independent *Dravida Nadu for Dravidians* to independent *Tamil Nadu for Tamils*. Annadurai felt that remaining in the Indian Union meant accepting linguistic oppression and economic regression. Annadurai was known as one of the best Tamil orators of his time. He published several novels, short stories, and plays which incorporate political themes. He even acted in some of his plays during his time in the Dravida Kazhagam. He introduced movie media as a major organ for propaganda of Dravidian politics. In total, Annadurai wrote six screenplays.

Being a great orator, he could draw enormous crowds for all of his meetings. I had seen him before, but I never had the chance to meet him. People loved him very much, and he was known as Arignar Anna ("Anna, the scholar"). As the train started

moving, we continued our conversation as if we had known each other for a long time. He did most of the talking, and I listened intently. I could immediately recognize that he had a brilliant mind, and he was really interested in uplifting society. I could compare him with my father because both of them had a similar vision for helping the people. The main difference I observed was that my father was very interested in improving the quality of life for working people. But Annadurai was more interested in making the economy better through private enterprises. This may have been because of his background in the entertainment industry.

I could see how his mind worked. He was of the opinion that the central government was not interested in improving the economy of South India. His main concern was that the central government was more interested in the Hindi speaking community of the North. As a result, the central government was attempting to make Hindi the national language of all the people in the South. His philosophy was more capitalistic compared to my father's philosophy of socialism. He did recognize that under a capitalistic system of building the country's economy, it would take time for the fruits of their labor to reach ordinary people, but he believed that given sufficient time it would lift up all the people in the country and create competition among businesses. He thought that it would be better than centrally managed businesses by the government under a socialistic system. My conversation with him was an education for me in economics and capitalistic way of thinking. He was very sincere in his beliefs, and I could see that he was genuinely interested in improving the conditions of the Indian people.

Our conversation continued throughout our travel except while we were sleeping. He was genuinely a very kind person, and I still remember his desire to help the people of Tamil Nadu in all his future plans he shared with me when he would form the government. In the next election, his party got the majority, and they formed the Tamil Nadu government and he became the Chief Minister of Tamil Nadu. Even though he only lasted for two years as Chief Minister, he accomplished a lot, and his vision has been fulfilled by the leadership that followed him. Today, he is considered one of the most revered political leaders in Tamil Nadu. After the train ride, we departed, and I met him once more after he became the Chief Minister and before I came to the U.S. He remembered our long conversations, and I congratulated him on his success. I wished him all the best for all his future success. Had I not introduced myself during that interesting train ride, I wouldn't have had such a meaningful conversation with a wise man such as Annadurai.



FOOTPRINTS IN RARE PLACES

My journey also took me to some of the most revered sacred Hindu temples in India and other places of worship for other religions. Even though I do not consider myself a religious person, I have been a student of various religions, in particular the Hindu religion. As I have said, I have been a fan of one of the Hindu religious scriptures, Bhagavad Gita. My travel to Hindu places of worship in India included from the southern tip of India, the famous temple of Rameswaram in Kumari Amman to the northernmost temple at Kedarnath in the Himalayas.

My travel to the temples in the Himalayas is worth remembering. Many Hindu devotees in India make a pilgrimage to the Himalayan sacred places known as “Char Dham Yatra.” These four sacred places are Yamunotri, Gangotri, Kedarnath, and Badrinath. On our trip, we did not go to Yamunotri and Gangotri due to time limitations, but we did visit Rishikesh, Haridwar, Kedarnath, and Badrinath. We started our journey from Delhi by car, and the travel experience was the most breathtaking adventure I have ever had. The beauty of the Himalayas cannot be fully explained in words. One has to experience it in person. The roads were very narrow most of the time, and very treacherous. On one side of the road is the mountain and on the other side is a cliff thousands of feet above the mighty river Ganges, and there are no guard rails. The drive was incredibly scary, but the beauty of the region was amazing, with snow covered Himalayan peaks, lush green valleys, and the beautiful Ganges flowing through the valleys. It felt like another world compared with California!

We first stayed in Rishikesh, on the banks of the Ganges, with an awesome view. That evening we went to Haridwar and participated in the Aarathy (prayer) ceremony at the Ganges. Amazingly, there were over a hundred thousand people in the crowd. That itself was a special experience. The next day we drove towards high ranges of the Himalayas through places such as Guptakashi, Devprayag, Rudraprayag, Agatsyamuni, and Kartikaswami, where there were a number of very old temples. We stayed in a few places and enjoyed the beauty and serenity of our surroundings. We were on the way to Kedarnath via Phata which is a small village located in route to Kedarnath, Uttarakhand. From Phata we could only go to Kedarnath by either trekking over twenty miles or by taking a helicopter ride for about ten minutes. Trekking would be adventurous

and interesting but would take several hours because we would have been climbing to over twelve thousand feet. We decided to take the helicopter ride, and it was short but with breathtaking views of the Himalayan peaks. Kedarnath has been a pilgrimage destination since ancient times. It is not certain when the temple was constructed or by whom.

We went to the Lord Siva temple with the special Darsan Ticket. In this temple, unlike most temples in the southern part of India, the devotee can directly conduct the puja (prayer), whereas in other temples the priests conduct the puja abhishekam by pouring milk on the Jyothirlingam (Lord's Idol), and my wife was happy to do the puja by herself and pray to the Lord. It was an incredible experience for us, and especially for her being a great devotee of Lord Siva.

After the Darsan, we returned from Kedarnath to Phata by helicopter, and on the way to Badrinath, we drove to Joshimath through Chopta, Mandal, Gopeshwar, Chamoli, and Pipalkoti. We went through some of the most scenic regions in the Himalayas. There were thick forests with an incredible variety of herbal trees. Finally, we reached Badrinath. Badrinath or Badrinarayan Temple is a Hindu temple dedicated to Vishnu and is situated in the town of Badrinath in Uttarakhand. The place and the surrounding areas of the temple were very beautiful, and the Darsan of the Lord Vishnu at the temple was a wonderful experience. The temple itself is very colorful and a feast for the eyes. Behind the temple is a range of awe-inspiring snow-capped mountains. It was a small temple compared to the temples in South India, but the architecture was very charming. Our return trip was uneventful but extremely enjoyable as we went through several places with many memorable natural wonders.



CHOOSING PATHS

There were a significant number of times when I was faced with multiple paths ahead of me, and I had to choose only one of them. Looking back, it was very difficult to select the right path, and on each occasion, I did not have a second chance. I am not sure whether I selected the right path every time, but overall, based on the overall results of my life, I must have selected a good path even if I did not select the best route each time. I have no major regrets about any of the many hurdles I had to overcome throughout my life, and I have attempted to transform most of the hurdles into some form of opportunity. My life journey had been based on a few of the great principles I have learned from my many masters.

I would like to share a key principle I learned from my teacher and mentor when I was a student at Caltech. Students often got together at the campus cafeteria for food and coffee to discuss topics related to the courses we were taking or research activities we were engaged in. On many occasions during these get togethers, a faculty member would join us, and we would take advantage of that time to get to know more about them. We also had the opportunity to interface with them one-on-one to ask questions about the course material or a general topic of interest. One of the faculty members who often met with us was Professor Richard Feynman, one of the most famous astrophysicists in the world and a Nobel Prize winner. He would discuss many topics with us about physics and other areas of interest. During these meetings, I acquired wisdom from him which I have tried to practice throughout my professional and personal activities. He told us that when one comes across a problem, instead of trying to solve the

problem directly, one should try to reduce it to a problem for which a solution exists that one knows.

I have come across many problems for which I have not been able to find a solution, which means that I have not been able to reduce them to problems that have existing solutions. I can give one example here. I have been trying to understand for some years, as an intellectual curiosity, what causes the origin of thought. I have discussed this with many neuroscientists, neurologists, and neurosurgeons, but none of them could come up with a meaningful explanation. Such experiences confirm the fact that I do not have the ability to solve many of the problems we come across. This reminds me of something I learned from my science teacher when I was in high school. She told me that there are three circles of knowledge. The first circle contains the knowledge that one knows what he knows. The second circle contains the knowledge that one knows that he does not know. And the third circle contains the knowledge that one does not know what he does not know. She also told us that the first two circles will grow larger as we get older because we would know more, but we would also know more about what we do not know. No one knows how large the radius of the third circle would be. This has helped me to appreciate my limitations.



THE PATH TO HAPPINESS

On a few occasions, I have been asked to give talks to some Hindu groups even though I was not particularly religious because I did not have sufficient knowledge of the Hindu Scriptures. As I said earlier, I have been a continuous student of

Bhagavad Gita. Once, I gave a talk to a group called Srinivasa Ramanujan International Pravachana Goshti and the topic was happiness.

According to the Hindu religion, the primary goal of a person is to attain the ultimate happiness through self-realization, and the scriptures teach how to achieve such a state of happiness or Ananda, which happened to be my name, the ultimate bliss.

Happiness, according to any English dictionary, is a feeling that comes when one knows their life is good. This is a Western way of identifying happiness. It can also be described as an end of desire and suffering. Once one reaches the state of true happiness, there is no need to worry about any suffering. In Hindu scripture, Bhagavad Gita, Chapter 5 and verse 23 states that “He who is able to resist the impulse of desire and anger even here before he quits the body, he is a yogi, he is happy man.” What it says is that one has to get rid of desires. All over the world, happiness is attributed to having more material things, and that is how being happy and having happiness is practiced and even measured by various institutions through the happiness index. According to Gita, that is not what real happiness is.

There are a number of very wealthy people with a lot of material things, but they are not really happy. In fact, they are extremely unhappy, and unfortunately, I know some of these people. In order to achieve real happiness, one has to get rid of the desire for material things, but this may be difficult to achieve. Similarly, one has to get rid of their anger as well. Most people, not only have great desire to get more things, but they are also angry much of the time. This anger could be

attributed to jealousy, or some other problems, but according to Gita, one has to get rid of this anger to reach true happiness.

In psychology, happiness refers to subjective well-being, and it is the outcome of the pursuit of pleasure over pain, a sense of distance from problems. Pleasure is associated with happiness but it is more than just a sensation or thought. According to neuroscience, it happens when our brains react to certain events. Our senses provide the feeling of happiness and continuous research is trying to understand the functional neuroanatomy of happiness.

What is the result of happiness to the physical condition of the body?

We know that happiness impacts the body and mind, and changes happen, chemically, when one reaches the state of happiness. Scientists are studying this, but it is not clear what the outcome of their research will be. It is also understood that the measure of happiness is very subjective as is our sense of personal well-being. It appears to be highly correlated to personality traits. Each individual has different ways of achieving happiness. For example, I am happy with simple things. I have seen, in the places where I grew up, children running around who do not have any form of luxuries in their life, but they have absolute joy on their faces. They certainly are very happy, but I have known people in Western society with all kinds of luxuries who do not show that kind of happiness on their faces. On the contrary, what I have seen in their facial expressions is that they are anxious, and something is missing from their lives.

Happiness is also related to emotions. In English, there are different words to express happiness and each one has a specific intent. An experience of fulfillment and accomplishment is also associated with happiness, and happiness occurs when one achieves something special. Happiness is often identified as achieving one's potential. When someone climbs a mountain and reaches the peak, they feel happiness because of the sense of accomplishment. When someone takes an exam and the results are good, they are happy. Not only due to accomplishment and fulfillment, happiness also occurs when something unexpected happens, like receiving a letter from a friend we hadn't heard from in a long time.

In Western society, happiness is believed to be attempting to maximize pleasure and pursuing self-interest. It is also believed to be when one has a positive mood. In addition, it is believed that happiness is enhanced by people acting in accordance with their most deeply held values.

Happiness is also related to success. One can ask which comes first. Does happiness lead to success or does success lead to happiness? Success is broadly defined as achieving wealth, respect, fame, or all of these. But happiness is also having peace of mind, which is a direct result of satisfaction in knowing one did their best to become the best. Success is also going from failure to failure without losing enthusiasm because we should always try to learn from failures and move on to achieve success.

A major difference between happiness and success is that happiness is subjective whereas success is judged externally. Happiness is internal, and one wants to feel happy. But with success, one wants others to think he is successful. Happiness,

in general, will lead to success. Similarly, success will lead to happiness. Happy people are mostly successful. Success, however, does not guarantee happiness. Happiness provides a competitive edge and increases the possibilities of success and also builds upward momentum.

In the Hindu religion, happiness is the attainment of eternal bliss. Hindu scriptures teach us that Ananda is that state of sublime delight, and according to Bhagavad Gita, Ananda is happiness derived by good thoughts and good deeds.

I have discussed the Gita in a previous section related to self-realization and a path to spirituality. I am going to visit Gita again in relation to happiness. Gita says that attainment of happiness is through yogas, Bhakti yoga, Karma yoga, and Jnana yoga.

Through Bhakti yoga, happiness is achieved through surrendering one's ego to the Divine. This is easy to say but very difficult to do, however, it will lead to the ultimate happiness. Gita suggests that ego can be removed by surrendering oneself to the Almighty, and by having a devotion to God. Among the three yogas, this path is relatively easy because it involves simply surrendering all of our problems at the feet of God and being happy about that relationship. In Bhakti yoga, one blindly follows God with the belief that everything happens through God and this belief allows the person to achieve happiness.

Another path for achieving happiness is through Karma yoga. Karma yoga is one of action. Gita tells us that right action is a form of prayer. It says that one should do the right thing, but the difficulty is that it is hard to know what the right thing is under all circumstances. Gita further says that Karma yoga is

a path of unselfish action which leads to happiness. An action without expecting any specific return due to the action is the Karma yoga that leads to happiness. Most of the time, one thinks that he is doing the right thing without clearly knowing whether he is doing the right thing. According to Gita, this is fine as long as such an action is not with any malicious intent or selfish motivation. The main teaching is to act according to our best knowledge of what is good without any expectation of selfish results due to such action, and this would result in happiness. However, in most societies, most people act in such ways that offer a return on their investment. Generally, one thinks that if they do something, the goal is to get something in return. According to Karma yoga, this practice will lead not to happiness but to suffering.

The final path to happiness, according to Gita, is through Jnana yoga. Jnana means knowledge, and through knowledge one can attain happiness. This is the most difficult path. One has to start analyzing themselves and reach the correct knowledge through continuous mental exercise and meditation. The process occurs by knowing oneself fully. In the Hindu religion, many saints, rishis, and sanyasis who have relinquished all worldly possessions, have attained this Jnana yoga and reached self-realization and ultimate happiness. The story of the Buddha is an example of one who achieved Jnana yoga and the ultimate happiness.



ADVICE TO YOUNGER GENERATIONS

I would like to share some of the lessons I have learned from my experiences. The first group is for young people anywhere

in the world, the second group is for immigrants currently in the U.S. as well as those who plan to emigrate to the U.S., and the third group is for those who plan to start a business.

To young people, I have ten pieces of advice which I have learned from my life experiences:

1. **Do what your heart tells you.**

Parents think that they know what is best for their children, and they have a tendency to shape their children's future based on their desire. Obviously, they are doing it with good intentions, and they want their children to become successful. They may not understand their child's passion or path in life. I would advise children to have a heart-to-heart conversation with their parents and explain what they want to do and why.

2. **Never stop learning.**

Learning should be a lifelong effort. I have learned something new from practically everybody I've met. Once, I was a guest teacher for one of my friend's classes who was a teacher for fourth grade students. I was asked to talk about the Hindu religion and compare it to Christianity. The school was run by a Christian institution. Obviously, most of the students had not heard about the Hindu religion. I saw that the children were very attentive and inquisitive, and they had a number of wonderful questions which I was happy to answer. I was surprised when one of the students asked what she would have to do if she wanted to convert to Hinduism. I told her that she did not need to do anything to convert to Hinduism, and if she was a good Christian, she would automatically become a good

Hindu. Teaching that class was a learning experience for me about the children's thought process.

3. **Use failures as steppingstones to success.**

One has to first recognize that life will bring many failures without notice. However, one has to face such failures, and take them as important experiences and convert them into steps for success. Sometimes, failures can be devastating. Life can be extremely frustrating when the possibility of failure is not anticipated. On the contrary, failure should bring courage to be innovative and creative going forward. Most successful people went through a number of failures in their lives. We must, instead, embrace failure and go forward with courage and conviction of one's own abilities.

4. **Always do the right thing independent of the result.**

There will be a number of decisions to be made or acts to be performed or work to be completed, and each time I would advise to take the right action regardless of the result. However, there may not be any way to find out what the right action would be, and therefore the right action must be determined by the person based on their intuition. Some people would say the end justifies the means, but I am not in that group. I believe if one has the right means, one will end up at the right destination.

5. **Say "yes" often instead of "no."**

Start with saying "yes" when talking to anyone instead of "no." The purpose is to make the conversation a more pleasant environment and to make the outcome better. Even if someone does not agree with the person with whom they are having a conversation, I would

recommend them to respond with a positive attitude. This type of conversation, even with adversaries, results in positive outcomes. Some people have a tendency to start with a “no” to any suggestion, and then eventually they would turn around and agree. I would recommend doing it the other way around.

6. **Have faith in yourself.**

Self-confidence is a valuable asset. One should feel as though they can tackle any problem and come up with an appropriate solution by themselves. If one has any doubt in their own ability, the possibility of achieving the desired result is in jeopardy.

7. **Never hesitate to ask others for help.**

I would advise developing a great network both socially and professionally. This network should be used to bounce ideas and get suggestions and feedback. When there is a need for anything, I would not hesitate seeking out and requesting help from people in the network. I have been blessed with a number of people who have been my greatest assets and who have played an important role in much of my successes.

8. **Never stop asking questions.**

I have noticed that when I teach college students, a few ask questions but many shy away from doing so. My experience when teaching students in lower grades is that they tend to ask more questions. These younger students are less inhibited than the older ones. My advice is that whenever there is an opportunity to ask questions on any subject, one should take advantage of it. In my opinion, there are only two types of people

who do not ask questions: those who know everything and those who do not have any clue what is going on. Very few people know everything, so we should never be afraid to be inquisitive.

9. **Always be humble.**

I have had the privilege of meeting and working with some of the most accomplished people in the world such as Richard Feynman, Nobel Prize winner for astrophysics, Carl Sagan, the famous astrophysicist, Bill Pickering, NASA JPL Director who was also knighted by the British Empire, and others. One thing common among them was their modesty. Be humble and pleasant to work with. One important quality I have learned from them is that however much I feel that I have accomplished, there are others who have accomplished more.

10. **Always be optimistic.**

There are some people who look at things in a very positive way under any circumstances, and these are half-full people. And there are those who look at things from a negative point of view, and these are half-empty people. My experience is that if one looks at problems from a positive outlook, it will be easier to resolve. Whereas if one approaches a problem with a negative point of view, it is often difficult to find a solution. I believe that creativity and innovation come from a positive outlook.

Next, my advice is to current immigrants in the U.S. and those who are planning to emigrate to the U.S. I have four specific pieces of advice to the people in this group.

Let me start with current immigrants:

1. **Become part of the community quickly in which you live.**

There is a tendency for immigrants to only mingle with people with a similar background. This can be because of the differences in culture, customs, food habits, beliefs, fear of people with other backgrounds, and so many other reasons. My recommendation is that you should put everything that separates you from the other people in their community aside and make a good faith effort to get to know Americans in the community and participate in local organizations. Volunteer in community social activities and try to make friends with as many people as possible. This will make you feel as though you are an integral part of the community. Especially if you have children. This will help children to assimilate with other children in the community and they will not feel like strangers in their own community.

2. **Try to become U.S. citizens as soon as you are eligible.**

You have to make sure that your legal status in the U.S. is always in good standing. There are many types of visas that people use to come to the U.S. Most of them are treated as special visitors, such as tourists, students, those eligible for work, and some with diplomatic status. Those who migrate to the U.S. as permanent residents are eligible to become U.S. citizens once they meet certain residency requirements. The reason I give this advice is because, otherwise, if you get a felony conviction you will be deported from the U.S. and may not be able to return in the future. But once you become a U.S. citizen, any conviction will not affect your status. I have known some people migrating from India who

are hesitant to become U.S. citizens because they have to relinquish their Indian citizenship. But my advice to them is that if they want to be in control of their destiny, they should first become U.S. citizens and relinquish their Indian citizenship and apply for Overseas Citizen of India (OCI) status which will include almost all the rights of an Indian citizen except voting rights.

3. **Manage your finances prudently.**

Most immigrants in the U.S. do not have family they can depend on financially when there is an emergency. In the U.S., people live very independently, and financial support from the government for economically disadvantaged people is available in a limited way, but it is not advisable to rely on such support. Immigrants should develop a habit of living within their means unlike most Americans who live beyond their means with borrowed money. Immigrants should also develop a disciplined practice of saving a certain percentage of their income every month for emergencies and necessary expenses. Saving habits can be enhanced if one develops a budget for expenses. I would also recommend consulting a financial planning advisor who could provide help in not only managing finances but also for proper investments to secure for future requirements such as children's education, retirements, and other needs.

4. **Learn American culture and customs and make them a part of your daily life.**

This is essential because the children of immigrants are growing up in the U.S., and this will help them to interact with their friends better. In the U.S., Thanksgiving Day and Independence Day (also called

4th of July) are two American holidays where friends and family traditionally gather to celebrate. Thanksgiving brings loved ones together around a huge spread with turkey as the traditional centerpiece, while 4th of July is dominated by fireworks, barbecues, and baseball. Americans also love sports very much. Football, basketball, baseball, and hockey are the four biggest sports in the U.S., with other activities like soccer, stock car racing, tennis, and golf each having a large and dedicated fanbase. Immigrant parents should take their children to sporting events and also encourage them to participate in sports. Because the U.S. is a melting pot of all cultures, one can find various kinds of food from all over the world, however, there are a number of foods that are commonly identified as American, such as hamburgers, hot dogs, potato chips, macaroni and cheese, and meat loaf. Apple pie has come to mean something that is authentically American, and things are often described as being “American as apple pie.” I would strongly recommend that immigrants embrace the American culture and traditions quickly.

Here are my pieces of advice to those who are planning to immigrate to the U.S.:

1. **Learn more about this country, specifically about the place in which you plan to settle.**

Most of the information can be easily obtained through digital research sites like Google. When I came to the U.S. in 1967, this kind of research was very tedious, and even then, all the details were not available. My knowledge of the U.S. and about Pasadena, California where I lived for some time, was very limited.

2. **Learn about the legal requirements related to migrating to the U.S.**

One can become a permanent resident of the U.S by coming here legally as a student, with a work visa, as a visitor, or any other permissible visa status if the person meets all the legal requirements specified by the immigration laws. It is extremely important to make sure that after reaching the U.S., you comply with all the laws of the U.S. especially immigration laws. Any violation will lead to deportation. I would recommend consulting with a lawyer specialized in immigration laws to properly advise about the changes in laws as well as the various regulations and restrictions by the U.S. Citizenship and Immigration Services (USCIS).

3. **Have a clear awareness of your financial responsibility and obligations and access to sufficient funds until you can generate income.**

As I have stated earlier, in the U.S., people are very independent and new immigrants may not be able rely on anyone else including relatives and friends. The cost of living in the U.S. compared to many other countries is high, and I would recommend having a good understanding of the financial needs in the U.S. and adequate planning prior to leaving for this country.

4. **Learn and prepare to adapt to the cultural variations and traditions in the U.S.**

This will make the transition from your home country more enjoyable and with fewer surprises. It is important to know that Americans thrive on competition. In the U.S., from a young age, children are encouraged to work hard and try their best to succeed at a task, particularly

in academics, sports, and other hobbies. All universities are very competitive, so parents have to prepare their kids early for the admissions process. All schools, even pre-schools, have competitive admission. Most Americans are ambitious as well. Generally, after 18 years of age, most Americans no longer live at home with their families. They also do their own shopping, laundry, cooking, and pursue careers and studies on their own. A broader knowledge of American culture will help new immigrants to assimilate better within the American community.

Last but not least, I'd like to provide some recommendations to the group who plans to start a new business. I have discussed in detail the opportunities and challenges in starting a new business. Here I have summarized them into four specific pieces of advice which I believe will help to develop a guideline to start a new business.

1. **Build your dream team.**

Form a good team who can work together and bring all the necessary expertise to the various aspects of the business such as management, research and development, operations, business development, marketing and sales, financial control, legal and governance, customer relations, and other related functions. It is also extremely important to make sure that the team members are totally honest with each other and are people of extreme integrity. One bad team member can destroy the whole business. During the early period of a business, many members of the team will have to take multiple responsibilities as the need arises, and as the business grows, the responsible

person for each specific function will have to develop a team for their own area and manage them so the whole business functions with a common goal. It is well understood that the team member's ability to function as a team leads to better performance if the team members share a strategic vision and passion for the company. The team together should develop a long-term vision, and this vision should be converted into a realistic business plan that can be modified as necessary as circumstances evolve.

2. **Have a great offer.**

Come up with a product or service that the business plans to deliver to its customers. One aspect to be studied before deciding on the product or service is to understand how this product or service will improve the lives of potential customers, and how fast one can acquire customers to start using the product or service. It is also important to make sure that adequate testing and proper evaluation and validation are completed prior to launching the business. The product or service does not need to be perfect prior to starting the business, but it is important to have a minimum viable product prior to the launch. The product or service can be improved, and new features can be added as the business grows.

3. **Have sufficient capital.**

Come up with a plan for sufficient capital to start, run, and operate the business, and develop a financial plan and projection. Proper financial management is one of the most important factors for the success of any business. The senior management should be on top of the cashflow management function. It is important to

have a clear budget and stick with it. A good financial management plan should include the following elements: Estimate required capital, determine capital structure, evaluate and select sources of funds, allocate and control funds, distribute profits or surplus, and monitor financial activities.

4. **Treat customers as God.**

The customer is always right, and the business must bend over backwards to please all customers. Whether Mahatma Gandhi said it or not, he has been attributed to the following quote: “A customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interruption of our work. He is the purpose of it. He is not an outsider to our business. He is part of it. We are not doing him a favor by serving him. He is doing us a favor by giving us the opportunity to do so.” I agree whole heartedly. Whether the customer is a consumer or a business, they must be treated with respect and there must be a good customer support system managed by the right team of people who are dedicated to the need of the customers.



UNBELIEVABLE OPPORTUNITIES HAVE BEEN GIVEN TO THIS IMMIGRANT

I consider myself very fortunate to have lived in California for the past fifty years. Here, I first saw beauty, passion, and loyalty to the United States. I consider California the most beautiful place to ever live. The majestic mountains that become dusted with snow in the winter, and the dramatic coastline that

resembles the Italian Riviera still put me in awe. Friends, family, acquaintances, and colleagues make it all very comfortable for me, and I feel heaven blessed me with something very special.

My academic journey from Caltech to UCLA was fascinating. I had the privilege of studying under some very challenging professors. I have had the pleasure of meeting, working with, and learning from some of the most brilliant minds in the world. I have witnessed some of the major events that took place in the U.S. and the rest of the world in-person during the last five decades. Looking back, some of these events have caused enormous pain and anxiety, and sometimes I lack confidence in the survival of humanity as we know it. I have seen ups and downs in my personal life as well, as have many of the people I have associated with. Every experience I have been a part of during the past decades has made me a better and wiser person, and I am very thankful to everyone who has played a role in my life. I got to meet people whom I admired, leaders and Nobel Prize winners. To me, it was a dream come true.

My life turned out to be like a fairytale because I got to study what I loved as a child. I became employed at fascinating places to work, and I got to be a part of some of the most life-changing missions of the planet. I think it's fair for me to say that life has been kind to me.

I also recognize the freedom in which I had the opportunity to study, work, and do business. In a time when many people struggled with being accepted by other people, I was never victimized in that regard. When I was employed doing highly classified missions, I was never hindered because of my Indian

heritage. I lived free and worked my way up without any form of discrimination.

And right before my eyes, I witnessed incredible strides in the areas of science and technology, space exploration, and airspace security. I am happy that I have been instrumental in contributing, in a small way, to helping my fellow human beings in a few areas. I have been privileged to work on some interesting and challenging problems of my time. Some of the areas I am very proud of include developing optimal interplanetary navigation tools to help satellites travel to all the planets in our solar system, developing gravitational field models of the Moon, Mars, and Venus to help understand the formation of our solar system, developing optical navigation methods to enable insertion of satellites into planetary orbits, developing autonomous navigation capabilities for GPS, developing innovative ways of achieving the survivability of GPS against various threats including possible nuclear attacks, developing secured communication tools, developing and implementing one of the first secured e-commerce platforms, and developing and implementing an artificial intelligence enhanced telemedicine platform to provide healthcare services to remotely located patients. I saw and was a part of some incredible developments. For this, I'm grateful.

And as I attempted to follow the path of entrepreneurship, I recognize the privilege of working my way up without being frustrated by neither the system nor by influences of corruption. Every road I embraced, every door I knocked on required me to give my very best. I must say that I am glad, most notably because after giving my best, most of my efforts were successful.

To me, humanity is the best place in which to invest. My little contributions to science, technology, and astrophysics are enough to make me smile in my sleep, not because they solved all the problems that will ever exist, but because I had the privilege of touching the world in this life. I also feel happy to continue to develop disruptive solutions through critical thinking.

Still, financial security has eluded many people even though they work hard every day. I am glad that my hard work all these years paid off. One cannot honestly say that prosperity is exclusively due to hard work though. Luck and privilege play their roles as well.

My job has afforded me the chance to travel. With each journey, I saw the world in a different light. I must confess that traveling is a form of education. Visiting new cities and seeing how other cultures function broadens one's understanding of the world.

The beauty of culture, beliefs, engineering, and history, which can be found in any city or town helped me realize that the world is indeed a beautiful place. Although I did find myself in cities that had previously been devastated by war, famine, and terror attacks, it didn't stop the people from forging ahead and rebuilding their lives. This I do recognize as a blessing.



I hope you enjoyed reading my memoir and I wish that more blessings come your way.

