Why Tech Companies Fail to Jump the Financial S-Curve

By

Alok Ranjan Singh

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Signature of Author: _____
MIT Sloan School of Management
May 6, 2016

Certified by: _____
Duncan Simester
NTU Professor of Marketing
Thesis Supervisor

Accepted by: _____
Stephen Sacca
Director, MIT Sloan Fellows Program in Innovation and Global Leadership
MIT Sloan School of Management

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Abstract

The rules of the game in the globalized business environment have changed. In the Information Technology (IT) industry, starting as a new company with a new offering or business model, climbing the upward growth trajectory of financial results, and later getting stuck in a flat or declining graph has been a common pattern for many companies. Many of them have failed to jump the financial S-curve, create and climb a new one. To address this, I have referred to seminal works, have gained insights from experts, have captured inputs from corporate leaders, have consulted academicians, and have discussed with fellow Sloan Fellows.

In this thesis, I analyze and discuss the phenomenon of failing to jump the financial S-curve. I argue that tech companies overlook the hidden S-curves. To respond to these hidden S-curves, companies must allocate resources to their powers of *category, company, market*, offer, and *execution*. Resources allocated to these powers must not be traded off under the pressure of performance. The leaders should create four different zones of *performance, productivity, incubation,* and *transformation.* As a recommendation to companies and their leaders, I offer a road map to successfully jump the financial S-curve, and climb a new one again and again.

Thesis Supervisor: Duncan Simester
Title: NTU Professor of Marketing

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My gratitude to my mother, Malti Singh and my two younger brothers, Ashish Ranjan Singh and Abhishek Ranjan who have kept that source of inspiration alive by staying motivated on our path.

Being part of the MIT Sloan Fellows program is the outcome of my wife, Gulshan Singh's encouragement. With her and our two enthusiastic children, Samarth Singh and Taijasi Singh, we all as a family have been in school in 2015-16.

I am fortunate to have Duncan Simester as my thesis advisor. The insight for this thesis was possible with his think-before-act approach. I sincerely thank him for our numerous sessions for dissecting management concepts.

I genuinely appreciate the efforts of Stephen Sacca, Director of MIT Sloan Fellows Program. He boosted my morale for writing a thesis and has been guiding me in the right direction.

I sincerely thank my numerous friends, mentors, and professors who have helped me by patiently participating in discussions and answering the survey questions.

Any research of this nature demands efforts of several other people. I also thank all such people who have been supporting me in this journey.

Chapter 1: Introduction

"The inability to predict outliers implies the inability to predict the course of history."

(Taleb, 2007, p. 24)

For ages, we have struggled to clearly understand the phenomena of success and failure. Researchers have developed multiple theories to explain both individual and organizational successes. As the time passes, old theories are rejected and new ones are promoted. In every new technological cycle, the old business practices are abandoned and the new ways of doing business are adopted. As the business world evolves, new models of leading and managing business are propagated.

Theories of company success have been long debated. The sudden change in the growth trajectory of successful and resourceful companies has been more perplexing. Many companies that grew rapidly suddenly fell off the cliff.

"The S-Shaped Growth Curve" is a known phenomenon. A closer look at companies' financial data confirms that the same curve has been followed by several companies in the information technology industry. Those companies have started up and grown rapidly. After their exponential financial growth, their growth trajectory has changed. Either they have plateaued or collapsed. In other words, many tech companies have struggled to succeed over a long period of time. They became a good target for merger or acquisition by the bigger players – as part of the industry consolidation. Very few have been able to defy the pattern and jump to a new S-curve growth.

The S-curve means the common pattern in which a successful business starts, grows rapidly, and eventually peaks and levels off as the market matures. High-performance companies manage to climb that S-curve and then jump to a new S-curve again and again." (Paul Nunes, Tim Breene, 2011, p. 3) (Figure 1)

High Performance Consists of a Series of Climbs and Jumps Across S-Curves

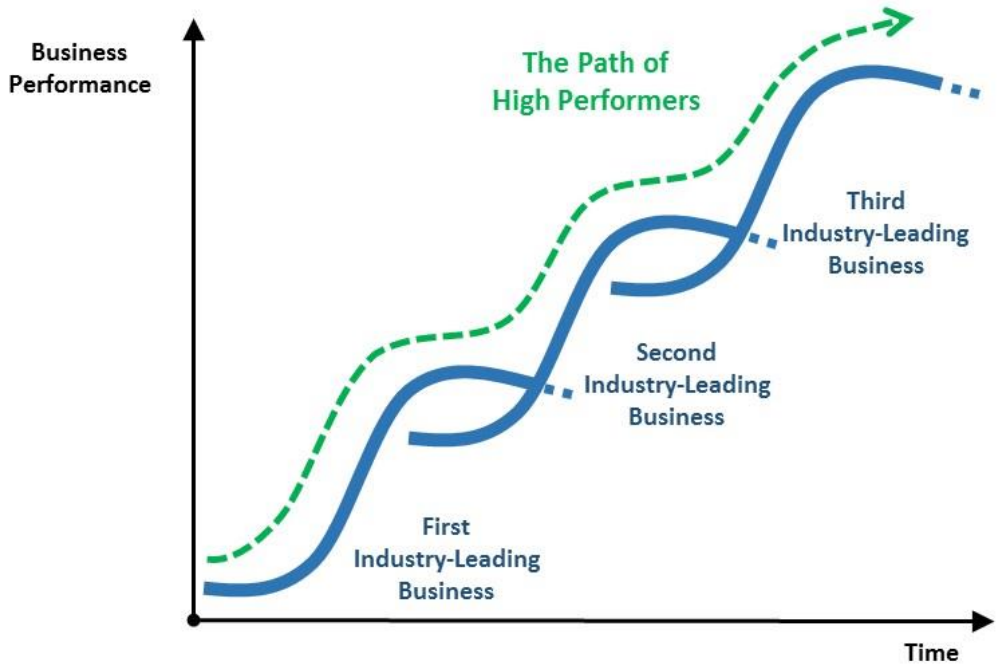

Figure 1: A Series of Climbs and Jumps Across S-Curves

Source: Accenture Institute of High Performance

Companies like Apple, IBM, HP, and Dell are classic examples. They have gone through their own exemplary successes and surprising failures in their corporate lives. After being highly successful and with huge financial and human resources, they got surprised by the unexpected decline in their financial performance.

Steve Tobak in his article *Why Great Companies Don't Stay Great* has commented, "Actually, the whole concept of perpetually great companies is flawed if not entirely fictitious. That's because a ridiculous number of factors influence a company's behavior and performance, not least of which are its leaders, competitors, and the markets it serves." Tobak has named Dell, IBM, and Nokia as once great companies that flamed out. He has also referred to the following three scientific principles that conspire to keep great companies from staying great. (Tobak, 2010)

Entropy: “To paraphrase the second law of thermodynamics, Entropy always wins i.e. s**t happens, things change.”

Evolution: "Only the fittest survive, but just long enough to have a little fun. Then they die too."

Economics: "Past performance is no guarantee of future results." (Tobak, 2010)

According to Geoffrey Moore in his book *Escape Velocity*, “the entire world is yelling at us that a train is coming, which doesn’t help, because we know a train is coming, but we are locked into relationship that do not allow any of us to move off the track.”

Fifty-six companies have failed to jump the financial S-curve: Burroughs, Sperry Univac, Honeywell, Control Data, MSA, McCormack & Dodge, Cullinet, Cincom, ADR, CA, DEC, Data General, Wang, Prime, Tandem, Daisy, Calma, Valid, Apollo, Silicon Graphics, Sun, Atari, Osborne, Commodore, Casio, Palm, Sega, WordPerfect, Lotus, Ashton, Tate, Borland, Informix, Ingres, Sybase, BEA, Seibel, PowerSoft, Nortel, Lucent, 3Com, Banyan, Novell, Pacific Bell, Qwest, America West, Nynex, Bell South, Netscape, Myspace, Inktomi, Ask Jeeves, AOL, Blackberry, Motorola, Nokia, Sony. They were not bad companies. They did not have bad leadership teams either. (Moore G. A., 2015, pp. Kindle Location 142-145)

What are the reasons for suddenly hitting a wall? Why do once great companies get stuck at the peak of the Financial S-Curve? Why do only few companies manage jump this curve? Are there more factors that are not visible and they also follow S-Curves? What role is played by factors like category, company, competition, market, capability, innovation, technology, offering, leadership, talent, and execution?

This thesis is an attempt to examine the climbing and jumping of S-curves. I also propose a road map to help leaders successfully keep jumping and climbing the financial S-curves.

Chapter 2 tracks the evolution of the information technology industry from being on the periphery to the mainstream of human life worldwide.

Chapter 3 dissects the transition of large tech companies like IBM, HP, and Dell. It also benchmarks them against the most valued company, Apple.

Chapter 4 deciphers several high performance myths with the help of Accenture research and my own survey of subject matter experts, corporate leaders, academicians, and fellow Sloan Fellows.

Chapter 5 describes the visible financial S-curve and identifies “what” several other hidden S-curves are.

Chapter 6 covers “why” and “when” different powers fuel the financial performance of tech companies.

Chapter 7 shows “how” to manage these powers and create zones to play defense and attack for keep jumping the financial S-curve and keep winning the game.

Chapter 8 explains “who” owns the responsibility to enable the company to successfully jump the financial S-curve.

Chapter 9 offers the “road map” that I have developed for companies to jump the financial S-curve, create and climb a new one.

Cisco Chairman, John Chambers says: “Market transitions wait for no one. Not for your customers, Not for your partners. Not for your competitors. And not for you. When the time comes, that sets the time, and just like when you were a kid playing hide and seek, there’s a voice that comes out of nowhere calling, *“Ready or not, here I come!”* (Moore G. , 2011, p. xxi)

Chapter 2: Information Technology - Periphery to Mainstream

People have been using information for ages. However, the term Information Technology (IT) first appeared in 1958 in an article published in Harvard Business Review by H. J. Leavitt and T. L. Whisler. Researcher Carlota Perez called the launch of Intel's first microprocessor, the precursor of the computer on a chip, as the big-bang of a new universe. (Perez, 2002, p. 3)

Information technology (IT) has now become a vital part of every business. From Fortune 500 companies to small-size companies, IT plays an important role in all companies. With access to IT, billions of people across the world are changing the way they live and work. IT has impacted their lives in a big way for health, education, and commerce.

Evolution of Information Technology Industry

The worldwide IT spend is forecasted to touch $3.54 trillion in 2016 from $2 trillion in 1999 (Gartner, 2016). It would almost double in $4 trillion in 2020. In other words, the total IT spend worldwide would almost double in 21 years.

Many prefer to divide its past, present and future in the following parts.

i. Mainframe Computing (1960s) – Mainframes: 1 million+ units
ii. Mini Computing (1970s) – Mini Computers: 10 million+ units
iii. Personal Computing (1980s) – PCs/Macs: 100 million+ units
iv. Desktop Internet Computing (1990s) – PCs/Macs +Internet: 1 billion+ units
v. Mobile Internet Computing (2000s+): Tablets/Smartphones/Phablets: 10 billion+ units

The next phase is about Internet of Things (IoT) with tens of billions units. Each new computing cycle typically generates around 10 times the install base of the previous cycle.

As per Morgan Stanley Research: "The tech cycles tend to last for ten years. The winners of each new cycle often create more market capitalization than the winners of the prior cycles. New companies often win big in new cycles while incumbents often falter."

Processing Costs Decline

Mary Meeker at Kleiner Perkins Caufield & Byers observes that processing costs have been falling rapidly while the cloud and accessibility rise. Decreasing cost/performance enables computational power at the core of digital infrastructure. Decreasing cost/performance of digital storage enables creation of more and richer digital information. Declining cost/performance of bandwidth enables faster collection and transfer of data to facilitate richer connections and interactions. (Figure 2)

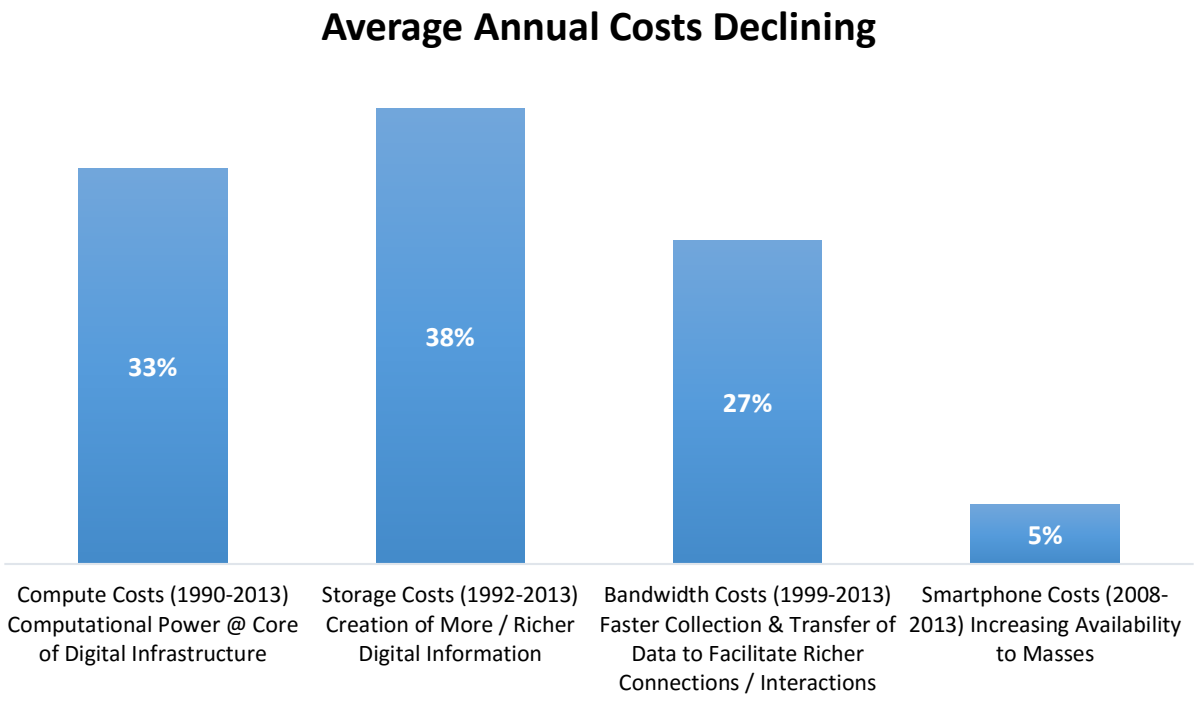

Figure 2: Processing Costs Decline

Source: Internet Trends 2014 by Mary Meeker at KPCB

With such cost declines in computing, storage, bandwidth, smartphone; more and more people are using technology to live and work. Now technology is in the mainstream of human life. The information technology industry is no more on the periphery and is growing rapidly.

The technology cycle and globalization keep changing the game of the tech industry. Each cycle presents extraordinary opportunities but also poses threats. Many tech companies have struggled to reallocate their resources while moving into a new cycle. And they have got stuck.

"The power of information technology can enable almost any industry to make its own revolution: the world of medicine, the world of materials or that of biology, the creative industries, transport, energy, buildings, nanotechnology, stem cells, agriculture, 3D printing, robotics..."

– *Carlota Perez, author of Technological Revolutions and Financial Capital* (Perze, 2013)

Chapter 3: Transition of Big Tech Companies

Three of the biggest tech companies, IBM, HP, and Dell have gone through a huge transition. Even with access to huge capital and human resources, they got stuck in financial S-curves. IBM managed to jump with Louis Gerstner's leadership in 1990s. But it is now struggling again. HP seemed to have grown under Mark Hurd. However, HP too is now struggling to grow. Dell, the youngest of them has also experienced a high growth before hitting a wall. (Figure 3)

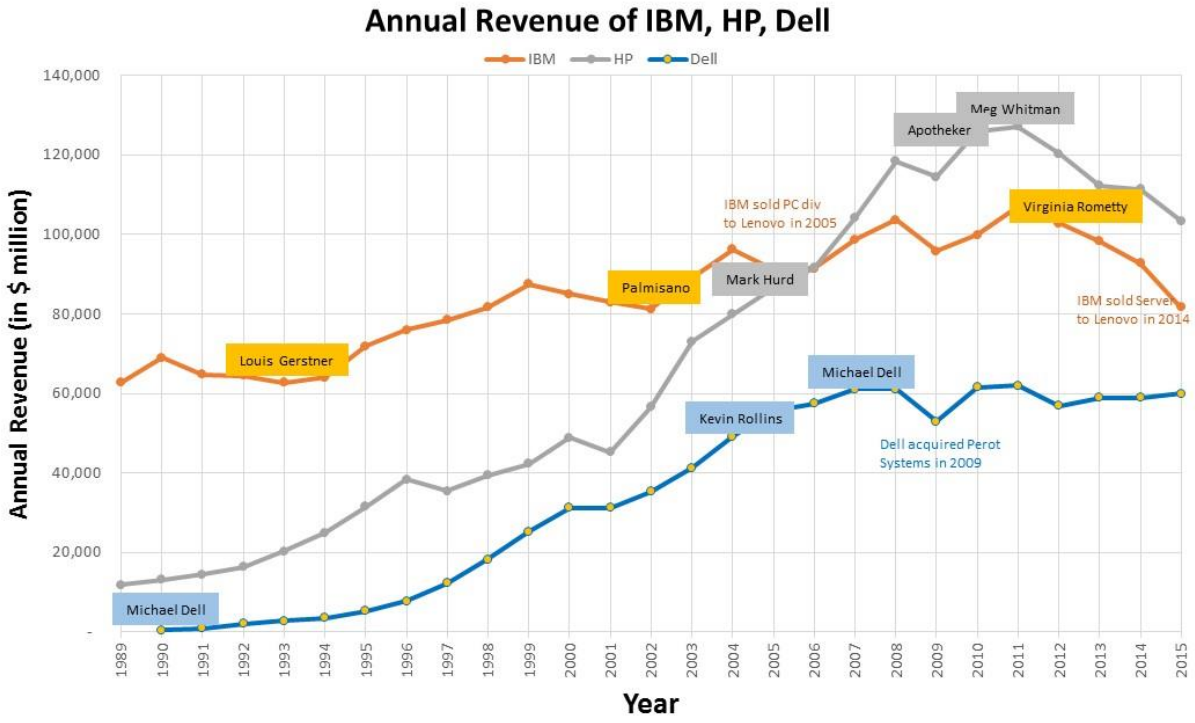

Figure 3: IBM, HP & Dell on Financial (Revenue) S-Curves

Source: Capital IQ, IBM, HP, Dell

These companies have tried to organically grow. However, along the way, they sold some parts of their business, or split their business, or acquired other companies. These big decisions were aimed at continuing growth. IBM, under CEO John Akers, struggled and lost $16 billion

over the period of three years. Then for the first time in its history of 80 years, an outsider was brought in. Louis Gerstner transformed the Big Blue empire into an IT service company in one of the greatest turnarounds in business history. HP and Compaq officially merged, and became the market leader in the PC industry in 2002 after their merger. However, they lost their leadership to Dell within a year. IBM sold off its PC and x86 server business to Lenovo. HP first acquired several other companies like Compaq, EDS, Autonomy. The biggest deal of them all is between Dell and EMC (Figure 4). Will it change the course of Dell's financial performance and enable it jump the curve and start climbing a new one?

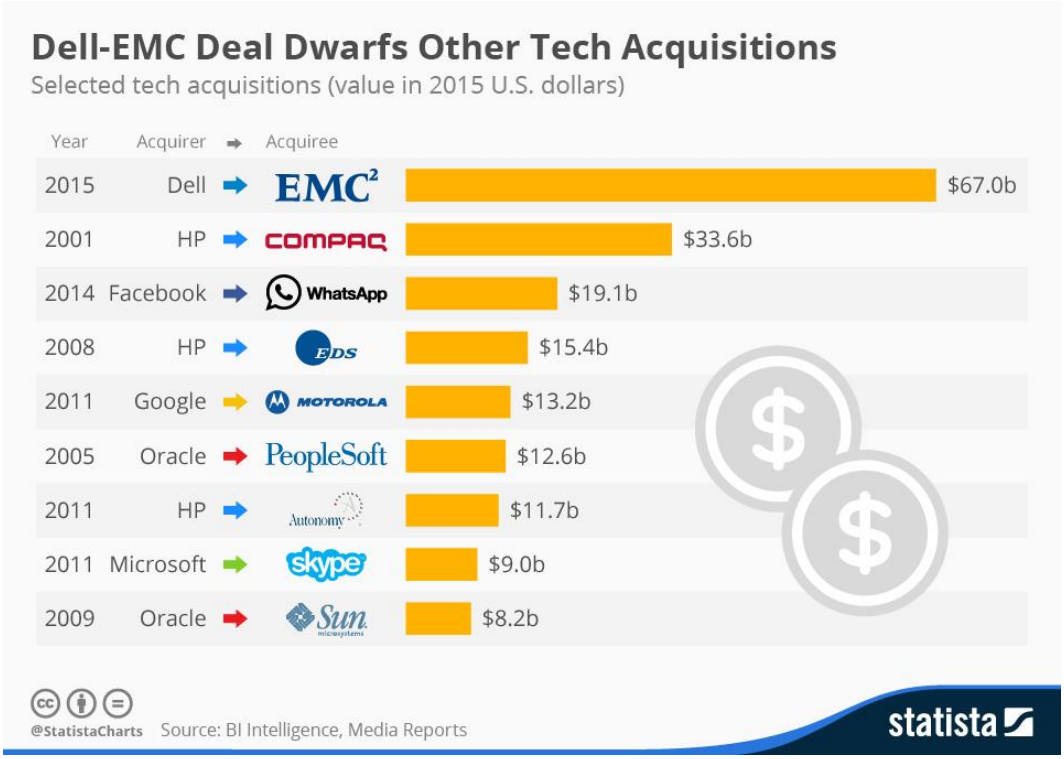

Figure 4: Top Tech Acquisitions

Source: https://www.statista.com/chart/3870/tech-acquisitions/

IBM: Big Blue

In 1952, the company started large-scale work on electronic computing, and in 1964 introduced "families" of compatible computers – transforming the industry to the model we see today. In 1981 it released its own personal computer, the IBM PC. But by outsourcing its software and processor hardware needs to Microsoft and Intel respectively, the company lost its technological advantages, and its own "families" of compatibility led to the rise of the IBM-compatible PC. By the end of the 1980s, IBM was struggling, and between 1991 and 1993 the company posted a $16 billion loss. However, a new CEO, Louis Gerstner, turned the company around during the 1990s, coinciding with the rise of the internet. It emphasized the use of business mainframes and moved away from personal computing. Gerstner then focused the company towards business software and specialist microchip production. In 1997, IBM's Deep Blue became the first computer to beat a reigning world champion at chess. (Telegraph, 2011)

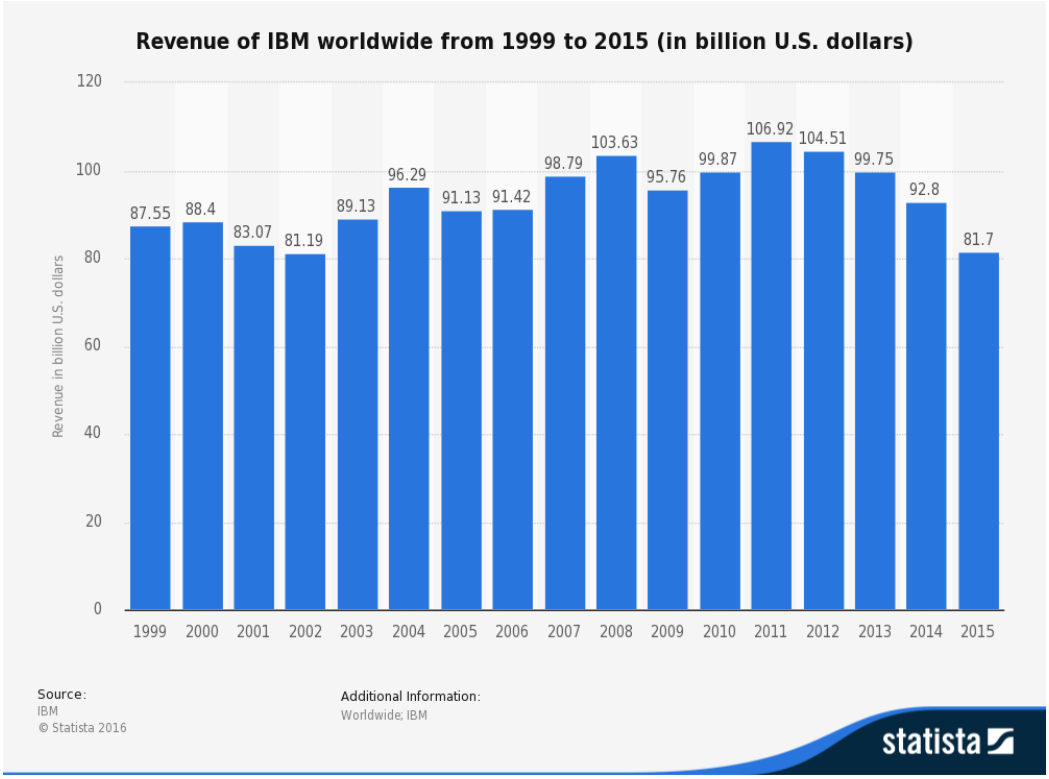

Figure 5: IBM's Net Revenue

IBM. (n.d.). Revenue of IBM worldwide from 1999 to 2015 (in billion U.S. dollars). In Statista - The Statistics Portal. Retrieved May 5, 2016, from http://www.statista.com/statistics/265003/ibms-revenue-since-1999/.

What is noticeable in the chart below is the expenditure on Research & Development (R&D) at IBM, does not follow the trend of revenue performance. (Figure 6)

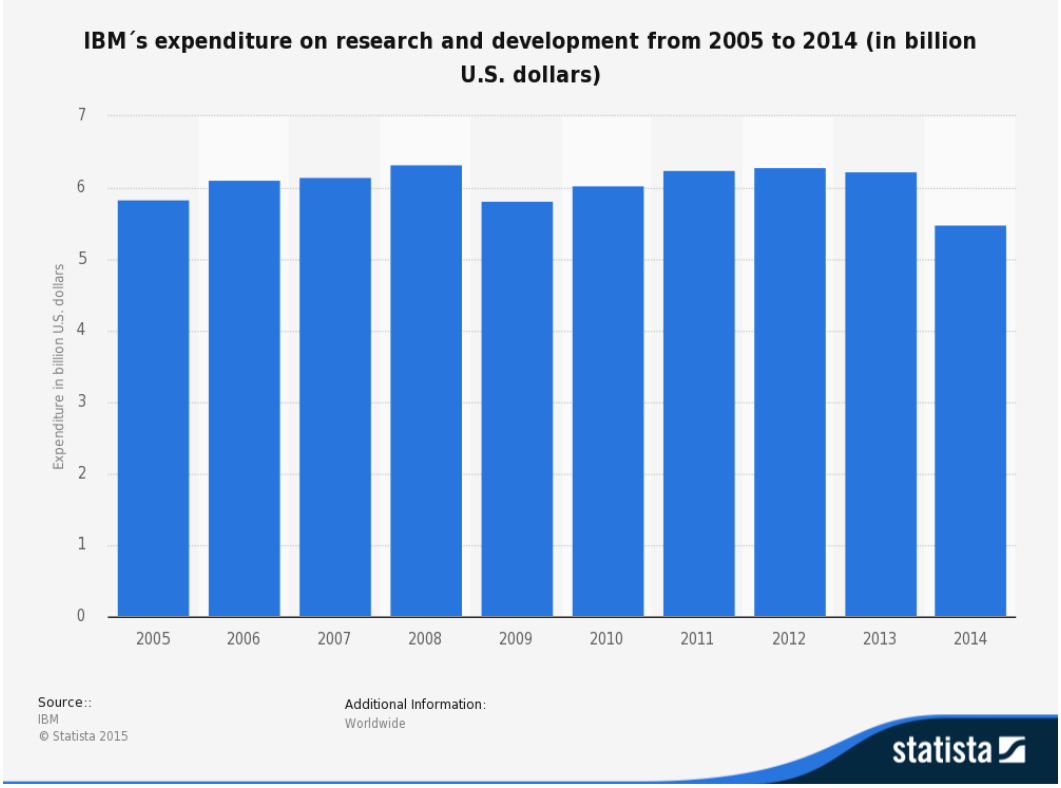

Figure 6: IBM's R&D Expenditure

IBM. (n.d.). IBM's expenditure on research and development from 2005 to 2015 (in billion U.S. dollars). In Statista - The Statistics Portal. Retrieved May 5, 2016, from http://www.statista.com/statistics/274821/ibms-expenditure-on-research-and-development-since-2005/.

Hewlett-Packard: The HP Way

In 1939, Dave Packard and Bill Hewlett established Hewlett-Packard (HP) in Packard's garage with an initial capital investment of US$538. HP has been recognized as the symbolic founder of Silicon Valley. On November 1, 2015, as previously announced, Hewlett-Packard legally ceased to exist and split into two companies, HP Inc. and Hewlett-Packard Enterprise.

This is not the first shift to shake the storied tech pioneer, but it is definitely the biggest. Hewlett Packard Enterprise will sell servers, software, storage, networking and associated services. HP Inc. will sell printers and PCs. What's so striking about this is how an engineering-focused, rather stolid company started in a Palo Alto garage in 1939 to build audio oscillators, calculators, and other geeky stuff, lost its way after founders William Hewlett and David Packard and their successors stepped down. Exactly when things went off the rails is subject to debate, but many point to the controversial acquisition of Compaq Computer in 2001 by HP's then-CEO Carly Fiorina as the start of the decline. When Meg Whitman, took over the CEO role from Leo Apotheker, she claimed that the split of the company would be a mistake given the cost advantages HP got from chip and storage suppliers. HP was "better together," she said. Then, last year she reversed course on that." (Darrow, 2015)

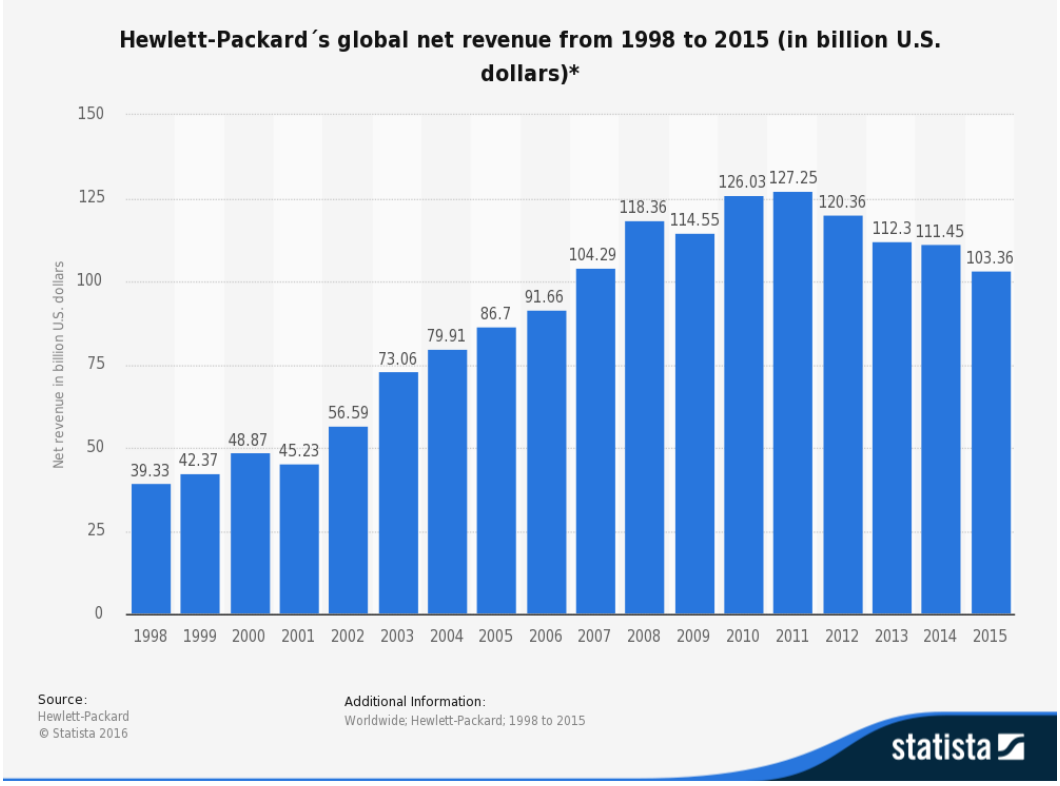

Figure 7: HP's Net Revenue

Hewlett-Packard. (n.d.). Hewlett-Packard's global net revenue from 1998 to 2015 (in billion U.S. dollars)*. In Statista - The Statistics Portal. Retrieved May 5, 2016, from http://www.statista.com/statistics/265001/hewlett-packards-net-revenue-since-1998/.

In the case of HP too, the R&D expenditure does not follow the trend of performance in revenue. When its performance peaked in 2009-10, the R&D budget dropped. However, it has since then picked up again. (Figure 8)

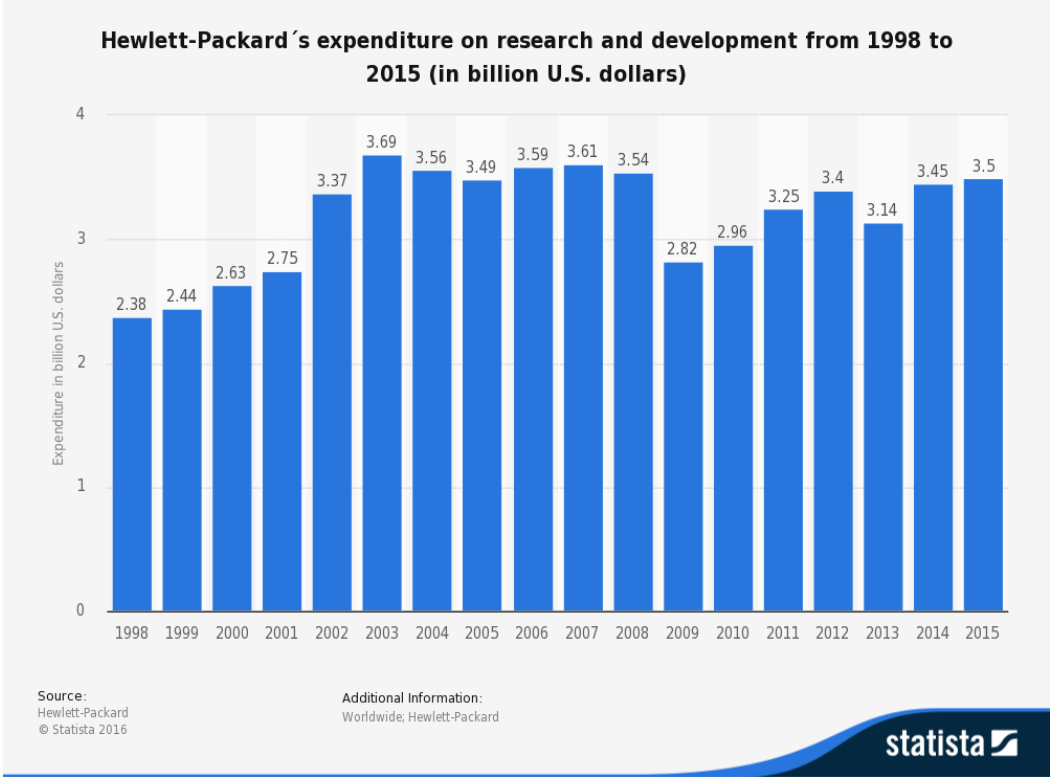

Figure 8: HP's R&D Expenditure

Hewlett-Packard. (n.d.). Hewlett-Packard's expenditure on research and development from 1998 to 2015 (in billion U.S. dollars). In Statista - The Statistics Portal. Retrieved May 5, 2016, from http://www.statista.com/statistics/264921/hewlett-packards-expenditure-on-research-and-development-since-1998/.

Dell: Direct from Dell

"Dell was founded the premise of "under-promise and over-deliver" – to customers, employees, and suppliers." (Dell, 2006 , p. 36)

In 1984, Michael Dell at the age of 19 founded the company with $1,000 in starting capital. (Dell, 2006 , p. xx) Dell featured on Fortune 500 for the first time on 1992. Michael Dell became the youngest CEO on the Fortune 500 list. In 2001, Dell became the no. 1 computer systems provider worldwide. Overall, Dell grew exponentially from 1984 to 2004. In one of the company town halls that I was present at, Michael Dell acknowledged that the slanted "E" in the Dell logo to symbolizes the exponential growth of the company. Dell became the youngest (20-year-old) ever company to hit the $40 billion mark in annual revenue. Dell topped the list of most admired companies in *Fortune* magazine.

Former GE CEO Jack Welch commented, "No one has pulled the levers of cost, quality, and service better than Dell." However, Michael himself responded, "…but we've got a lot of work to do." (Serwer, 2005)

Then Dell set the ambitious plan to hit $80 billion mark in 5 years' time. Dell's executive leadership was aware of the S-curve phenomenon. So it trained other leaders at Dell worldwide. Later, however, it got stuck around the $60 billion mark and lost the market leadership position. Since then, it has been trying hard to get back to the leadership position but the annual revenue has been hovering around $60 billion for last 8 years.

Geoffrey Moore, bestselling author of Crossing the Chasm and Escape Velocity, dissected Dell's approach in an interview with me. He commented, "Dell solved the PC value chain problem. However, it did not identify the next problem to solve. The next problem was not obvious to Dell."

In 2013, Dell turned private. Now will the $67 billion merger-acquisition deal, the biggest ever in the tech industry, with EMC Corporation change the course? At Dell Word 2015 that I too attended, Michael Dell exuded confidence and said: "Well, go big or go home, baby!"

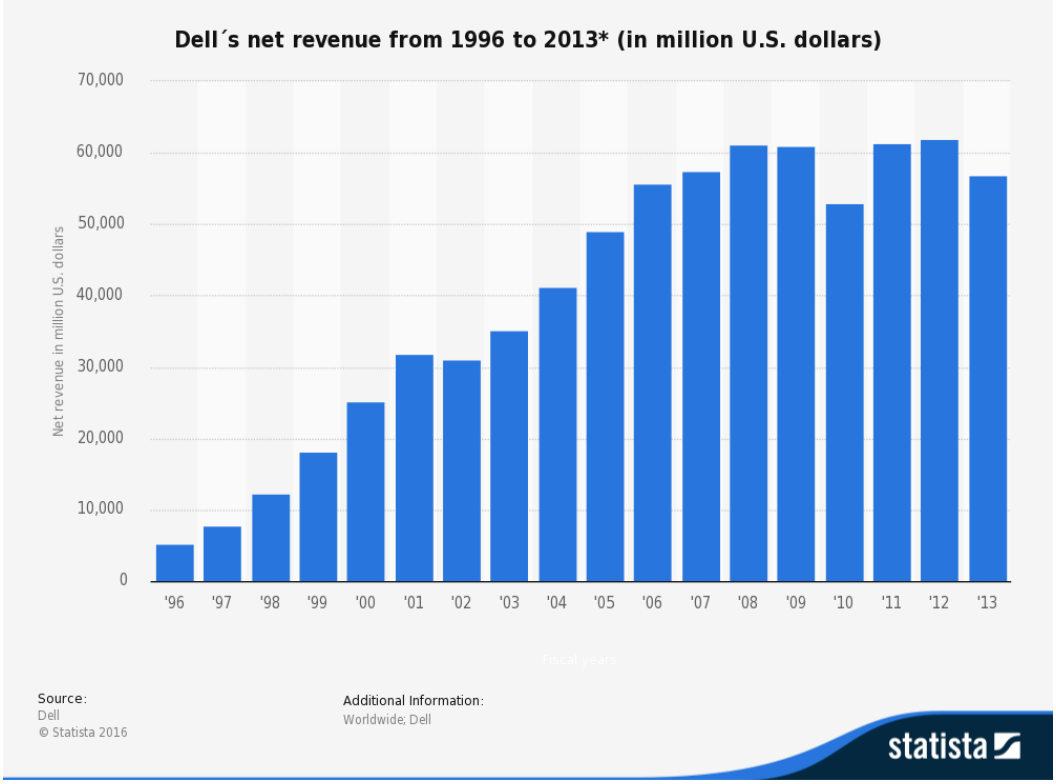

Figure 9: Dell's Net Revenue

Dell. (n.d.). Dell's net revenue from 1996 to 2013* (in million U.S. dollars). In Statista - The Statistics Portal. Retrieved May 5, 2016, from http://www.statista.com/statistics/264911/dells-net-revenue-since-1996/.

Dell has historically had a low Research & Development budget. Recalling Dell's philosophy of creating technology for customer's sake in its early days, Michael Dell has written: 'For one thing, we started thinking and talking in terms of "relevant technology," a phrase we used to describe the features that were important to our customers. For another, we consciously committed to a set of principles regarding "buy versus make"; there were times when it made the most sense to leave the R&D to our suppliers, and times when it made sense to invent things ourselves. This philosophy helped guide our decisions, and causes us to focus on how best to use our engineers.' (Dell, 2006 , p. 40)

Michael Dell also commented, 'Our R&D is shareholder-and customer-focused. We don't set the number by a percentage of revenues or some magic formula; we ask, "How much do we

need to spend to deliver the products we need to deliver given what we need to do and what our partners need to do?" Then we put it all together. The result is that for every dollar we put into R&D, we get about $6 back in profit.' (Dell, 2006 , p. xviii)

In last 5 years, Dell had been spending more on R&D as it focuses more on the enterprise business as a solutions provider. (Figure 10)

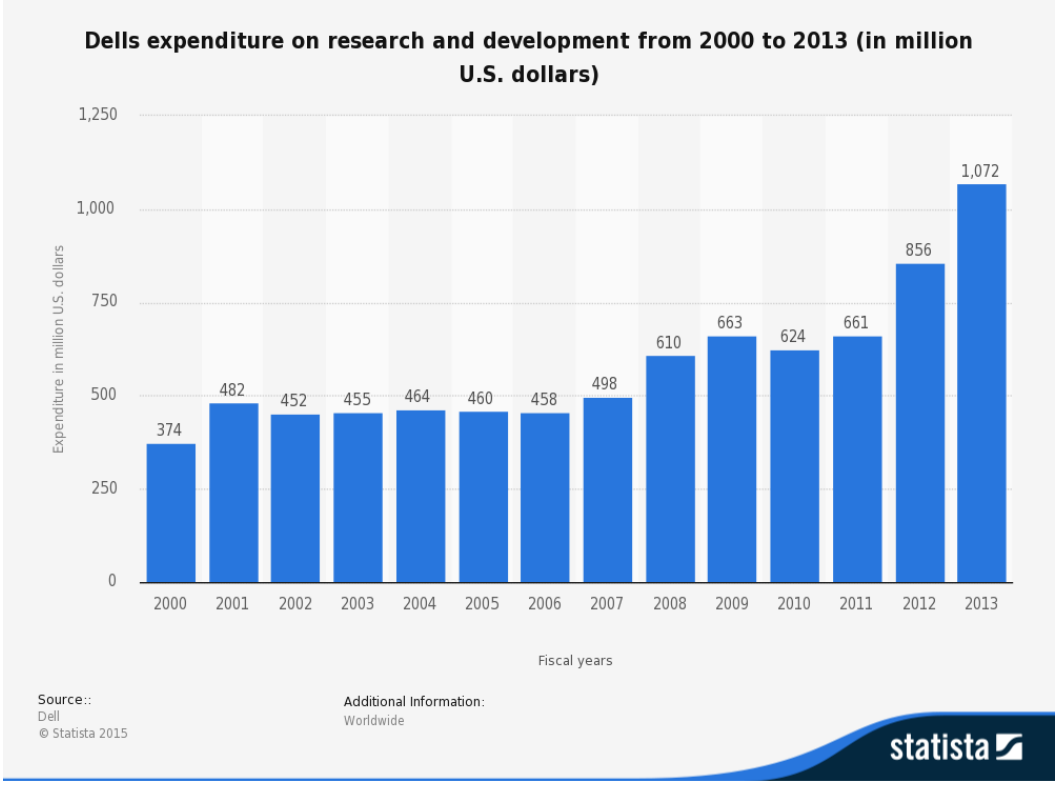

Figure 10: Dell's R&D Expenditure

Dell. (n.d.). Dell's expenditure on research and development from 2000 to 2013 (in million U.S. dollars). In Statista - The Statistics Portal. Retrieved May 6, 2016, from http://www.statista.com/statistics/264918/dell-expenditure-on-research-and-development-since-2000/.

Paul McKinnon who was from 1997-2007 Senior Vice President of the Human Resources Group for Dell now teaches Leadership and Organizational Behavior at Harvard Business School. He acknowledged in a personal interview with me that Dell needs to continue allocating more budget to R&D for more innovation.

Apple: The Most Valuable Company

40 years ago in 1976, Steve Jobs and his friends Steve Wozniak and Ronald Wayne incorporated Apple Computer. Apple pioneered the personal computer industry first with Apple I and later Apple II. It also became the richest tech industry company with $1B in cash in 1983. However, it struggled to compete with the new open standards architecture from IBM, HP, Compaq, and Dell. When Steve Jobs returned in 1997, he expanded the market by launching iPod and promoting Digital Hub strategy. Riding on its legendary success, however, Tim Cook announced the end of PC in November 2015. (Figure 11)

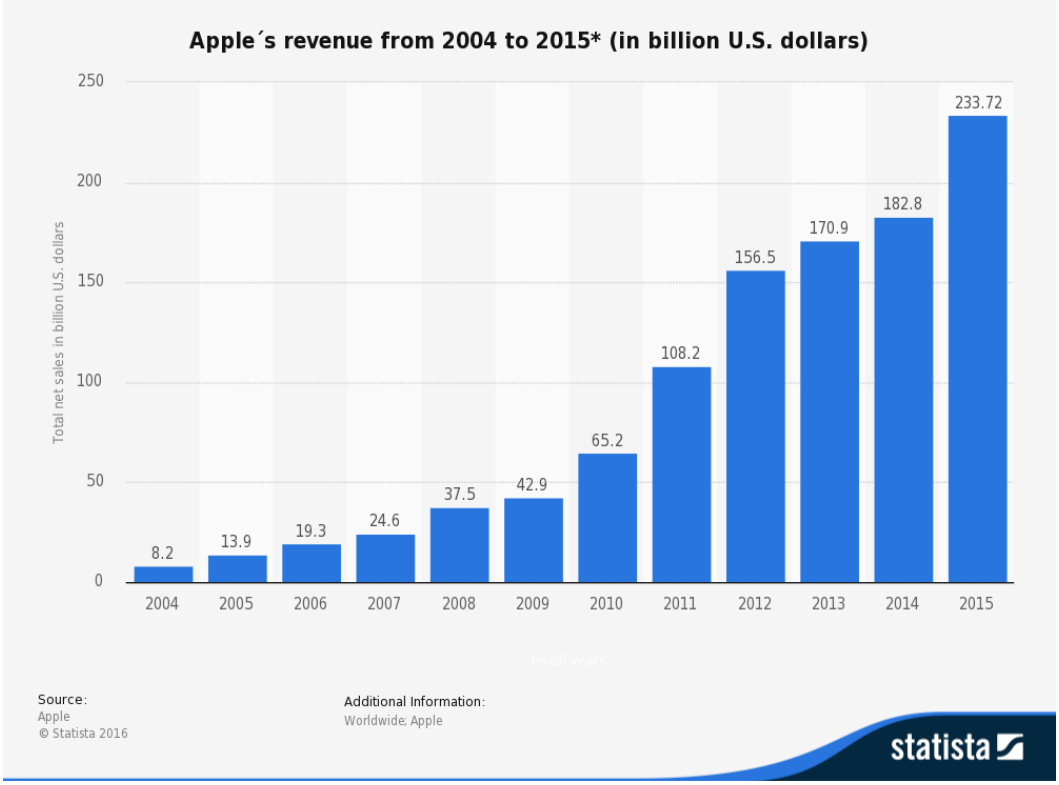

Figure 11: Apple's Revenue Growth

Apple. (n.d.). Apple's revenue from 2004 to 2015* (in billion U.S. dollars). In Statista - The Statistics Portal. Retrieved May 6, 2016, from http://www.statista.com/statistics/265125/total-net-sales-of-apple-since-2004/.

In the following chapters, I have examined what has made Apple such a successful company and become the most profitable tech company.

From October 2011 through September 2012, the combined net profit of Microsoft, Google, eBay, Yahoo, Facebook and Amazon was $34.4 billion. Apple alone made $7 billion more. In the same period, Dell, Asus, Intel, Acer, IBM, Lenovo and HP, i.e. virtually the entire PC industry, made $19.3 billion or less than half of Apple's profit. (Figure 12)

Figure 12: Apple's Profit vs. Others

Source: https://www.statista.com/chart/735/apples-astonishing-profit-in-context/

Chapter 4: Performance Myths: Frequently Asked Questions

"When you're really successful, the world conspires against you. Think about all the other companies that would want to participate in that success." – Michael Dell in an interview with the Economic Times (2011)

That has been the belief of several leaders and experts of the corporate world. A comparison of the companies on the current Fortune 500 list with those 50 years ago does validate that belief to a large extent. Mark J. Perry in his research found that 88% of the Fortune 500 firms in 1955 were gone in 2014 because of "creative destruction."

As per the published research by Mark J Perry: "Comparing the Fortune 500 companies in 1955 to the Fortune 500 in 2014, there are only 61 companies that appear in both lists. In other words, only 12.2% of the Fortune 500 companies in 1955 were still on the list 59 years later in 2014, and almost 88% of the companies from 1955 have either gone bankrupt, merged, or still exist but have fallen from the top Fortune 500 companies (ranked by total revenues). Most of the companies on the list in 1955 are unrecognizable, forgotten companies today (e.g. Armstrong Rubber, Cone Mills, Hines Lumber, Pacific Vegetable Oil, and Riegel Textile)."

Mark J. Perry continues to explain the economic lesson from this phenomenon. He stated, "That's a lot of churning and creative destruction, and it's probably safe to say that almost all of today's Fortune 500 companies will be replaced by new companies in new industries over the next 59 years, and for that we should be thankful. The constant turnover in the Fortune 500 is a positive sign of the dynamism and innovation that characterizes a vibrant consumer-oriented market economy, and that dynamic turnover is speeding up in today's hyper-competitive global economy."

There are several reasons mentioned by analysts and researchers. There is also a great amount of literature on performance and how to free company's future already available – *In*

Search of Excellence, Good to Great, Built to Last, Jumping the S-Curve, Escape Velocity, Zone to Win, and *Innovator's Dilemma.*

A key research work in the area of "high performance" is done by Paul Nunes and Tim Breene at Accenture. They have shown with empirical research that the following myths are wrong. (Paul Nunes, Tim Breene, 2011, pp. 11, 12, 13, 14)

Myth 1: Some industries or markets are so mature or so competitive that it is impossible to substantially and continuously outperform competitors in them.

Reality: High performance is not dependent on industry factors or the general health of an industry.

Accenture's research showed that high-performance businesses exist in all but a tiny percentage of industries, even in those where growth and shareholder returns weak. In all but three out of the thirty-one industries in their study, at least one company dramatically outperformed others.

In my survey for this thesis, 38.5% of respondents have said "No", 30.8% have said "Maybe", and 30.8% have said "Yes". In other words, many of the respondents did not fully believe in this myth.

Myth 2: The bigger the company, the better it is to compete.

Reality: Industry-leading scale is not a requirement for high-performance.

Accenture found that no correlation between a company's relative size in an industry and business performance.

In my survey results, 30.8% have said "No", 61.5% have said "Maybe", only 7.7% have said "Yes". Again, many respondents did not completely believe in this myth.

Myth 3: Companies can't pursue high growth and high profitability at the same time; they have to choose.

Reality: Consistently outperforming competitors in both growth and profitability is a competitive reality today and a hallmark of high performance.

Accenture research found that high-performance businesses consistently outperform their peers in both growth and spread.

In my survey results, 38.5% of respondents said “No”, 53.9% said “Maybe”, and 7.7% said “Yes”. Again, many of the respondents did not fully believe in this myth.

Myth 4: The rewards of seeking higher performance come only after years of hard work.

Reality: The benefits of pursuing high performance can accrue well before actual operation measure improve.

As per Accenture study: “Over the 7-year period we studied, high-performance businesses far exceeded their peers in demonstrating to Wall Street that they deserve a high proportion of future value in their overall market value.”

In my survey results, 7.7% of respondents said “No”, 61.5% of respondents said “Maybe”, and 30.8% said “Yes”.

Myth 5: **Being consistently above average in an industry is probably good enough.**

Reality: Even above-average performers have a lot of to gain from becoming high performers.

Accenture research shows: “That the gaps in revenue growth and profitability between high performers and above average performers are every bit as large as the gaps in those measures between above average and underperforming companies.”

In my survey results, 33.3% of respondents said “No”, 50.0% of respondents said “Maybe” and only 16.7% said “Yes”. Again, many of the respondents do not believe in this myth.

Considering the response to these myths, it is obvious that one needs to understand what works for the high performance companies. There are several examples of such companies in all industries. Is it about BHAG (Big Hairy Audacious Goal) as per Jim Collins? Or are there some companies which are built to last longer and perform better than others?

Chapter 5: Visible and Hidden S-Curves

What does the S-curve mean? Everett Rogers in his book *Diffusion of Innovations* shows how the cumulative sum of adopters of an innovation takes on the shape of the letter S. He then characterizes segments of adopters in terms that are still commonly used today. During the dot-com era, the meaning of the phenomenon was adapted to describe the rollout of the new Internet-related technologies. Geoffrey Moore in *Crossing the Chasm* explains how new-technology companies can break out of the bottom of the curve and reach the top." (Paul Nunes, Tim Breene, 2011, p. 3)

In business management, it means a common pattern in which a successful business starts with a few eager customers, grows rapidly as the masses seek out the new offering, and eventually peaks and levels off as the market matures. When we refer to high-performance companies, we mean those that manage to climb that S-curve and then jump to a new S-curve again and again. (Paul Nunes, Tim Breene, 2011, p. 3) (Figure 1)

There are two types of S-curves. One that is visible all the time, that is the financial S-curve. And others that are usually not visible and difficult to measure, those are hidden S-curves. Donald Lessard, Professor of International Management at MIT Sloan School of Management, said in the survey for this thesis that the financial S-curve should be treated as the outcome of other (hidden) S-curves.

Now the question is what those other hidden S-curves are that impact the visible financial S-curve. (Figure 13)

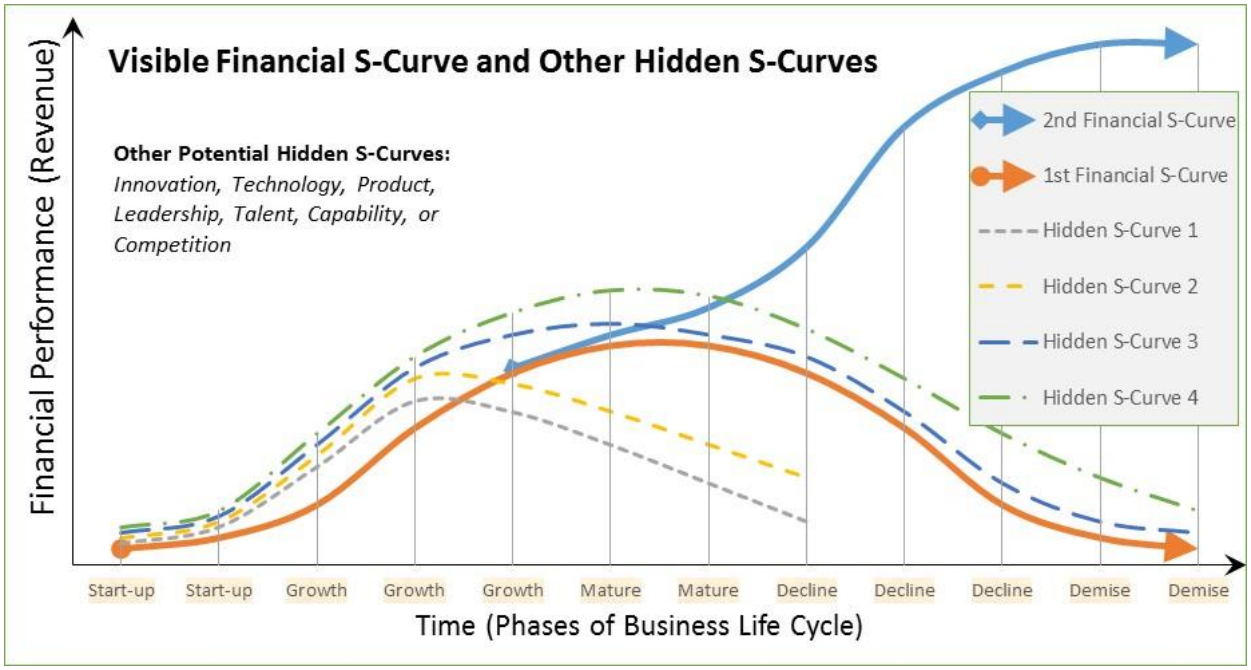

Figure 13: Visible & Hidden S-Curves

As companies grow and become more successful, they lose the flexibility to take their foot off the gas of the current business. They cannot ignore the current large organization and business long enough for the new one. The bigger they get, the harder it is for them to jump the current S-curve and create a new one.

According to a research for Fortune 100 companies in *Stall Points*, once a company stalled to slow revenue growth, it had only a 7% chance of recovering to moderate or high growth. 67% of the stalled companies were acquired, bankrupt, or taken private. (Matthew S. Olson, Derek van Bever, 2008, p. Kindle Location 521)

In *Unstoppable*, Chris Zook similarly discovered that fewer than one in five companies that stall for five years were able to return to their previous level of growth within the next five years. Jim Collins, in *How the Mighty Fall*, shows that by the time companies understand the trouble of they are in and begin "grasping for salvation," few can claw their way out of the depths. These findings lead to an uncomfortable truth—once a company stalls, its life as higher performer is essentially over. (Paul Nunes, Tim Breene, 2011, p. 106)

In several examples, the period of growth comes to an end, and the S-curve flattens. The leaders of most of these companies have found it difficult to recognize that time starts running out well before results begin to taper off.

If it was easy to identify the right time, the company could have started building a new businesses or investing in new technology much before they usually do. The visible financial S-curve keeps them blind to other curves.

In business management, the financial growth S-curve is the visible one. So, it gets most of the attention of the top management. The key hidden S-curves usually mature and decline much faster than the financial S-curve.

So what are the signs of getting stuck in the financial S-curve? How to recognize them well in advance?

Signs of Getting Stuck in the Financial S-Curve

It is not easy to proactively recognize when the company's financial S-curve is going to flatten. If it was, companies would act to build new businesses much more quickly than they typically do. But if companies want to jump the S-curve, they have to know where to look for signs of getting stuck before it's too late. The best way to gauge the time left is by looking at the hidden S-curves. Some of them hidden S-curves erodes in its own way and signal following early warning to the still-successful companies. (Paul Nunes, Tim Breene, 2011, p. 104)

1. Shrinking power of the business category the company has been operating in. Example: Dell in the personal computer category.
2. Presence of new market entrants or the absence of former competitors. The fear of unknown would also set in. Example: Tablet manufactures like Asus.
3. Market share may shrink even in the presence of a sales growth – sign of more competition. You are losing your bargaining power in the market. Example: Dell in profitable category of imaging and printing.

4. Market share growing while sales is modest – sign of competition is abandoning the market for a good reason. Example: Desktop category of products.
5. Waning distinctiveness of the company's offer power. Example: Commoditized desktops and notebooks by leading manufactures like Dell and HP.
6. Pricing power trends downward over a period of time. The ability to generate greater margins than those of direct competitors is a true measure of valuable distinctiveness that generate value for customers. Example: Notebooks
7. Stalling talent growth – not enough room for talents to grow within the company. An unplanned or unintended attrition, especially of top performers is a warning sign not only of the maturing of an S-curve, but also of employees' lack of confidence that that the company can jump to a new S-curve.
   (Paul Nunes, Tim Breene, 2011, p. 104)

In *The Innovator's Dilemma*, Clayton Christensen asks this question: Why do well-managed companies fail? He concludes that they often fail because the very management practices that have allowed them to develop the "disruptive technologies" that ultimately steal away their markets. Well managed companies are excellent at developing the "sustaining technologies" that improve the performance of their products in the ways that matter to their customers. Disruptive technologies, however, are distinctly different from sustaining technologies. Disruptive technologies change the value proposition in a market. When they first appear they almost always offer lower performance in terms of the attributes that mainstream customers care about. (Christensen, 2011, pp. 263, 264)

Chapter 6: Powers to Jump the Financial S-Curve

To jump the financial S-curve and climb a new one, companies need to focus on their powers. The powers are to enable companies to free up their future from the pull of their past. On the other hand, the annual operating plan year-after-year continues to pull them back. Geoffrey Moore says: “You need to apply a force that is greater than the inertial momentum of current operations. No experienced executive is likely to underestimate the amount of force required.” He continues to argue: “Newton taught us several centuries ago in his first law of motion, the one that covers inertia, that an object at rest tends to stay at rest and an object in motion tends to continue in the direction in which it is currently moving. The same goes for resource allocation.” (Moore G. , 2011, p. 1)

In my own experience in the tech industry, I have observed how year-after-year, the gravitational pull of last year’s operating plan does not free up. The year-end strategic planning meetings are usually driven by finance with a direction to multiply last quarter’s performance and budget by four and set new targets for the next year. Resource allocation also follows the pattern of the past, and action planning responds to financial planning.

As the operating plan is focused on financial performance, the focus on powers is not adequate enough. Powers need to be put before performance. Geoffrey Moore recommends that the strategic planning session should be held a quarter prior to the usual year-end planning session. Based on the priorities of different powers, the resources allocation should be decided. Then there should not be any trade-off due to the pressure of the financial performance.

Strategic planning should not be focused on the company alone. The discussions should not be focused on what the company wants. Rather, it should be about the market, and about the world. It should be about the ecosystem of customers, partners, and competitors. In other words, it should not be about *you*. It should be about *others* in the ecosystem. Overall, you need an *outside-in* and *market-centric* perspective in the strategic planning session.

What are those powers? Geoffrey Moor has created a framework which he calls “The Hierarchy of Powers.” “It sizes up all economic competitions in relation to five types of economic power, organized in descending order from most general to most specific.” (Moore G. , 2011, p. 4)

1) Category power
2) Company power
3) Market power
4) Offer power
5) Execution power

Category Power: Reengineering Portfolio Management

“Category power is a function of the demand for a given class of products or services relative to all other classes. Categories in high demand, like smart phones, storage systems, and cloud computing are more successful than their peers in securing customer budgets to fund them. Conversely, participating in a low-power category, such as desktop computers, wire-line phone services, or e-mail, is an exercise in playing on the margins. Being able to enter new categories and exit old ones is fundamental to freeing your company’s future from the pull of the past.” (Moore G. , 2011, p. 5)

One of the key reasons companies stall is because they stay with their core business too long or abandon it too early. In the competitive global business environment, it’s not easy to decide which path to take. (Matthew S. Olson, Derek van Bever, 2008, p. Kindle Location 1053)

The leader should both objectively assess current portfolio and identify compelling alternatives as part of *portfolio management.* Below are the key questions to get the right mix of categories.

1. Where is category growth contributing to our overall growth objectives?
2. Where is lack of category growth inhibiting our growth objectives?

3. To the degree we participate in multiple categories, how well balanced is our overall portfolio in terms of contribution to current earnings, current growth, and future growth objectives?
4. In light of the above, do we need to enter a new category, divest ourselves from a category we are currently in, or stay the course with our current portfolio? (Moore G. , 2011, pp. 6,7)

"Apple is enjoying exceptional financial returns, in part because it participates in a number of high-growth categories—smart phones, digital music distribution, and touch-screen tablets, to name three. At the same time, Dell is struggling economically and, not coincidentally, participates in none of these categories. As a result, it is in the process of repositioning itself as more of an enterprise company, competing against IBM and HP. On the other hand, a decade ago the show was on the other foot. Dell was the darling of the tech sector, right at the heart of vibrant PC category, and Apple was a marginalized and fading star. That's how category power works." (Moore G. , 2011, pp. 7, 8)

"The fundamental model for understanding the dynamics of category power is the category maturity life cycle. Category power manifests itself in five different states." (Moore G. , 2011, p. 28)

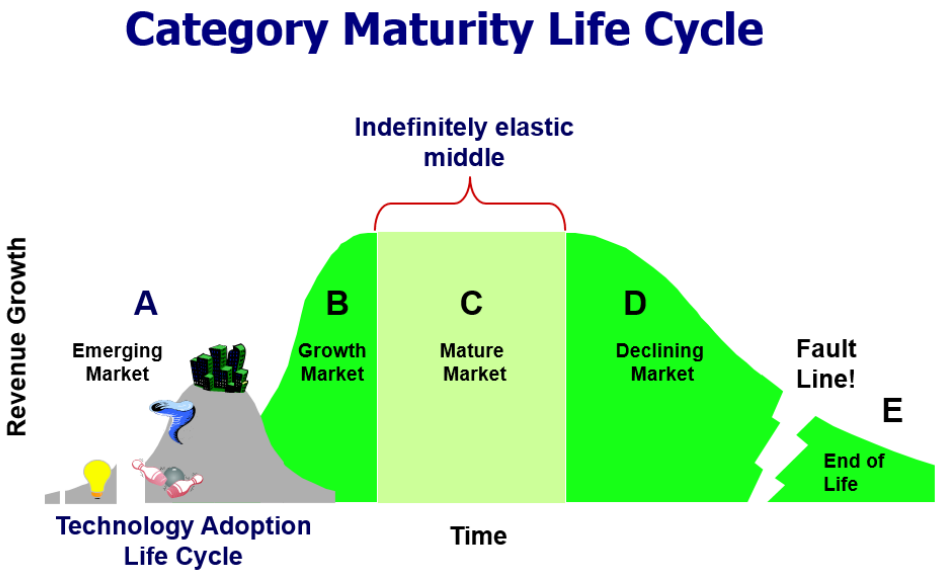

Figure 14: Category Maturity Cycle

Source: Geoffrey Moore in Escape Velocity

A) **Emerging Categories**: These are categories in which new wealth-creating engines are born. They are governed by the Technology Adoption Life Cycle. For large companies, these categories are a real challenge. The demand attention but do not provide returns in the near term. Investors are focused on current quarter gains from publicly held companies. For startup companies, emerging categories are a godsend. (Moore G. , 2011, p. 29)

B) **Growth Categories**: These are the great wealth-creation vehicles for public companies. Growth in a Stage B category is *secular* on-time-only affair. In this category, large companies have powerful competitive advantage over new entrants. Their global footprints for sales and services give them far superior market access, and their brand credibility shortens sales cycles and helps them get the final nod. (Moore G. , 2011, p. 30)

C) Mature Categories: This is where overwhelming bulk of the world's economic returns are generated year after year. These categories offer stability and predictability. Market leadership positions change very slowly, and large companies dominate. Growth is *cyclical*. If you miss out in one round, you can pick it up in the next one. In addition, you can claw your way back into the any game you lost out in, using the efficiencies of consolidation to pay back the acquisition capital deployed. (Moore G. , 2011, p. 32)

D) Declining Categories: These are categories that have transitioned from cyclical growth rates to persistently negative ones. Large companies are the only players of merit at this stage. The market is not looking for new players. Usually there is a convergence of high value, low risk, and low need for investment, all of which can make Stage D the most profitable of any stage in the life cycle. The key point is that in Stage D, for the first time, category power is a negative force. In the short term, this may winnow out the competitors before it gets to you, so there are some compensations, however overall, when you factor in the time, talent, and management attention any business must consume, it is normally better for large companies to divest themselves of Stage D assets early and repurpose their assets into categories that are at an earlier stage. (Moore G. , 2011, pp. 33, 34)

E) End of Life: This phase is the end of a category's commercial viability. Staying too long means continuing to invest in Stage D categories in order to extend their life cycles just a little bit longer. Kodak, Blockbuster could not see any place to go. However, there is always some place to go. It's just that you have to jettison a lot of baggage to get yourself under way. And the longer your stay at the fair, the more baggage you have to jettison and the weaker you are when you start out. Stage E is category power at its most lethal. This is why it is so important for companies to divest during Stage D. (Moore G. , 2011, p. 34)

The Three Horizon Model

One way to visualize the underlying problem that undermines most portfolio strategies management is to apply the filter of the Three Horizons model presented by Mehrdad Baghai and his colleagues at McKinsey in *The Alchemy of Growth*. (Figure 15)

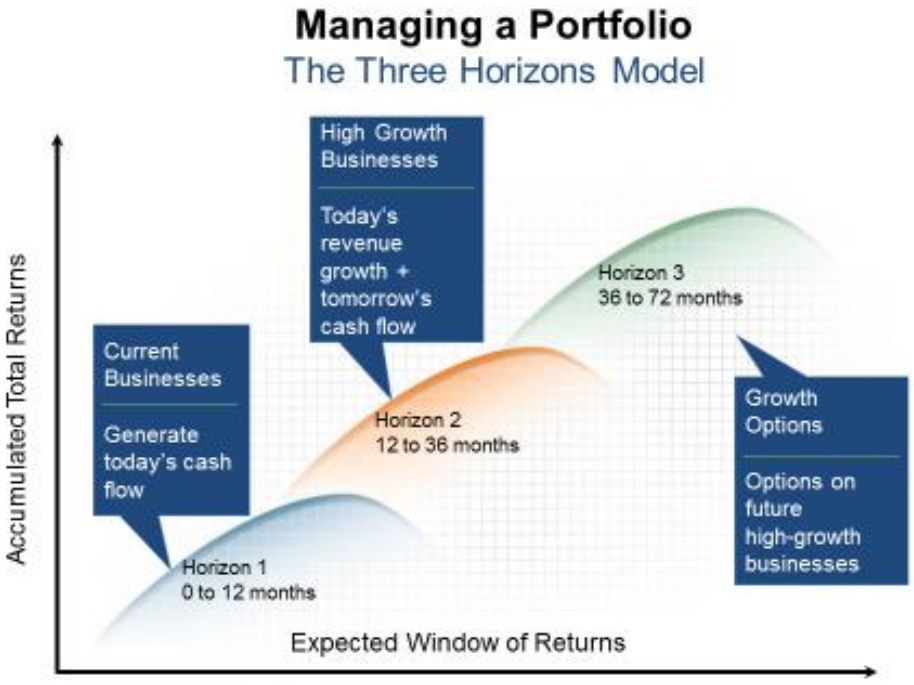

Figure 15: The Three Horizon Model

Source: Escape Velocity by Geoffrey Moore

Horizon 1: Investments are expected to contribute to material returns in the same fiscal year in which they are brought to market, thereby generating today's cash flow.

Horizon 2: Investments are expected to pay back significantly, but not in the year of their market launch. Typically, they are fast growing from birth but off a small base and need time to reach a material size.

Horizon 3: Investments in future businesses that will pay off in the years beyond the current planning horizon. They are not expected to appear in market during the current planning year, and thus while they make claims against R&D budgets, they do not affect the go-to-market operating plan. (Moore G. , 2011, pp. 40,41)

Company Power: Making Asymmetrical Bets

Company power is the sum of all the bargaining power you can bring to bear relative to your customers, your suppliers, your sales-channel partners, and your partners. In this context, HP under Mark Hurd dramatically increased its bargaining power. (Moore G. , 2011, p. 63)

Here are the key questions to ask to decide on the company power.

1) What exactly are our crown jewels, and are we investing enough to sustain or even increase their unique capabilities?
2) Do our innovation investments focus on leveraging our crown jewels, or are we spreading ourselves too thin and failing to achieve genuine competitive separation?
3) Have we engineered our offers and our organization to leverage our crown jewels for maximum sustainable differentiation from our competitive set?
4) Are we optimizing and economizing aggressively enough in areas that are not core to our defining differentiation?

(Moore G. , 2011, pp. 10, 11)

These are tough questions to tackle under the best of circumstances. Asymmetrical bets are the foundation. Must lead first and manage second. HP missed the Internet wave during 1990s being too focused on expanding its traditional mode for client server computing. HP hardly

alone in the behavior. How else to explain how Xerox could have failed to capitalize on all the innovation coming out of its Palo Alto Research Center? How else to explain how the Motorola or Nokia people could have failed to put out an iPhone-like phone in the several years prior to Apple when they had all the technology and know-know necessary.

Crown jewel are company capabilities that are valuable, defensible, and unique to a company, and if developed and accentuated properly will create sustainable competitive advantages. Below are the crown jewels to manage this category.

- Technology: Patented to ensure defensibility like Google's search algorithm.
- Expertise: Scarce and hard to acquire such as Apple's design expertise.
- Platform products: Made available to other vendors for the purpose of deploying their own offering such as Microsoft with Windows.
- A passionate customer base: This is what kept Apple in the game through the lean years.
- Scale: Being the biggest to negotiate with suppliers and beating competition on price such as Wal-Mart.
- Brand: Having a recognized brand is a huge advantage.
- Business model: When the world is stuck in the old way, a new way can have a dramatic impact such as what FedEx did to package delivery and Southwest Airlines did to air travel.

  (Moore G. , 2011, pp. 79, 80)

Market Power: Capitalizing on Markets in Transition

Market power is simply company power specific to a particular market segment. Within the segment, you are the top dog and top fish in your pond. When pursuing a strategy of market segment focus, there are questions that challenge leaders:

1. Is the market segment big enough to matter, yet small enough to win decisively?
2. Are our market-specific commitments sufficiently focused and intense to win market power?
3. Are we winning fast enough?

4. Are we making the market sufficiently lucrative for our partners so that they will proactively participate in completing our whole offer?
5. Are we capturing a price premium commensurate with the unique value proposition we provide?
6. Do we have a clear line of sight to our growth opportunities in adjacent market segments?

(Moore G. , 2011, p. 15)

Offer Power: Breaking the Ties That Bind

Offer power is all about managing innovation for products, services, processes. Offer power is also the most transient of all the powers in the hierarchy. Apple's iPhone has used offer power to jump the S-curve, leaving both Nokia and Motorola scrambling for an "iPhone killer". The leaders facing challenge of resource allocation should answer the following questions.

1. Is this offer a proven hit, a potential hit, or more of a product-line filler?
2. Is this offer sufficiently differentiated to gain escape velocity from its competitive set?
3. What can we do to amplify its differentiation further?
4. Where are we wasting resources majoring in minors or chasing a competitor's tail?
5. Where are we wasting resources majoring in minors or chasing competitor's trail? (Moore G. , 2011, p. 19)

Execution Power: Engineering the Escape

Execution power is the ability to outperform your competition under conditions that favor no companies in particular. Largely it is focused on an existing book of business and thus is more about securing the present than freeing the future. For this reason, execution is often

perceived as set in the opposition to strategy. Below are the issues or questions that arise when companies focus on execution power.

1. Are we clear about the state of each of our lines of business and the corresponding execution mode that should be foregrounded?
2. Do we have the right kinds of leaders in charge, given the execution discipline that is required?
3. Have we highlighted the lines of business that are in transition, either from invention to deployment (the escape-velocity transition) or from deployment to optimization (the maturation transition)?
4. With respect to the transition programs, do we have clear milestones and metrics and visibility to ensure we know when they have reached their tipping points?

Execution initiatives in support of escape velocity run in parallel with ongoing execution in support of the status quo, and neither should be allowed to compromise the other. They compete with each other for time, talent, and management attention. (Moore G. , 2011, pp. 24, 25)

Focus On Power First, Then Performance

Performance is critical to success and managers are good at managing it. However, power fuels performance. For long term performance, companies must continually renew their power. Leaders must be trained to learn how to manage power. They need to have methods and metrics. They should have a “power generation plan” along with the “performance plan.” They should allocate resources to manage power. They should modify compensation plans. Also the system must hold managers accountable for renewing power. Therefore they are not fully consumed by managing performance when the going gets tough.

Tom Allen, Professor of Organization Studies at MIT Sloan School of Management, highlights the tradeoff between the responsiveness to technologies and market dynamics. He explains: “Department structure is more closely mapped to the structure of the supporting technologies.

It thereby provides a better connection to those technologies and better ongoing technical support to the project effort. This is, however, accomplished at the cost of much greater difficulty in coordination of the project tasks and less responsiveness to market change. Project Team structure groups people from different disciplines together in a single team all reporting to a common manager. It thereby provides better coordination of the project tasks and increased sensitivity to market dynamics. This is, however, accomplished at the cost of a separation from the disciplinary knowledge underlying the project effort. When this is carried to an extreme, it will gradually erode the technology based of the organization."

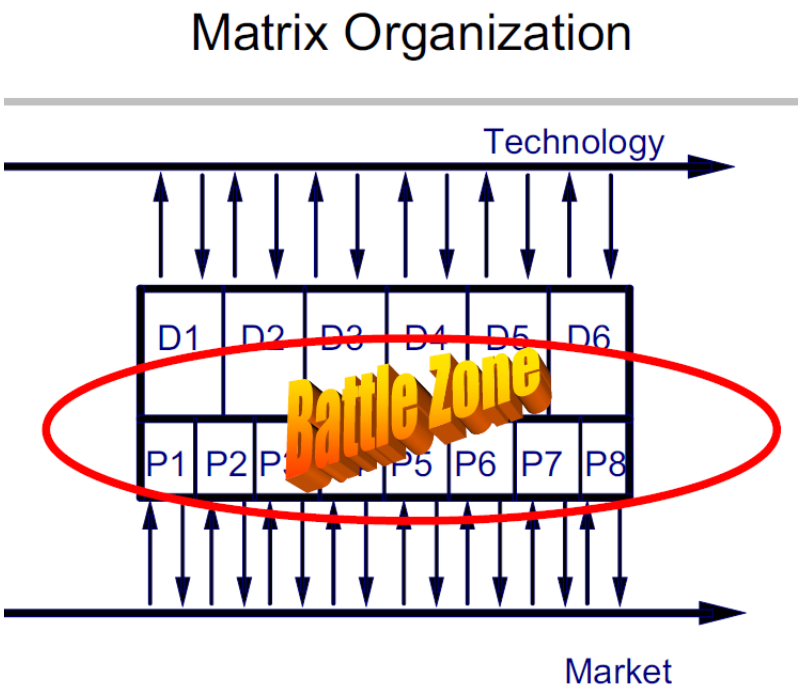

Figure 16: Technology and Market in Matrix Organization

Source: Tom Allen's Executive Programs Presentation at MIT Titled "Architecture_Communication"

Chapter 7: How to Jump the Financial S-Curve

Alan Mulally, *former CEO of Ford and Boeing,* comments on the phenomenon of tech companies getting stuck in the financial s-curve in an email communication to me: “Not having a five-year profitable growth plan based upon delivering products and services that people want and value with every increasing quality and productivity.” He recommends, “Update each year your five-year profitable growth plan. It works for all companies and is the purpose of business to create value for all the stakeholder.”

William Amelio, former CEO of Lenovo, in an email interview for this thesis has commented: “Size can become your enemy. Instead of leveraging scale larger companies keep adding resources and taking on tasks that don’t line up with their missions. It is always easier to add people then subtract them. Once there is a layer of entrenched VPs ideas from the bottom have a tough time getting through. Startups get going because the founder or founders team are passionate about an idea and they put all their energy behind it. This is difficult to do in a larger firm. The larger you get the more risk averse you become. Not invented here syndrome is hard to break in established companies.” Then what should tech companies do to jump the financial S-curve? He recommends: “Figure out how to keep fresh ideas flowing. Never be comfortable. There is always a better idea somewhere. Take calculated risks.” Now let’s dig deeper and frame what can enable companies jump the financial S-curve.

Paul McKinnon, Professor of Organization Behavior at Harvard Business School, and Former Head of Human Resources at Dell and Citigroup explains this phenomenon in the personal interview with me: “Dell had unassailable competitive advantage. It managed supply chain and cash conversion better than anyone else. Now with changes in market, Dell needs to be more innovative with products.”

S.P. Kothari, professor at MIT Sloan School of Management, in the email survey for this thesis highlighted: “New entrepreneurs are not allowed inside the company to take chances that made the company great in the first place.” To jump the financial S-curve, he

recommends: “Create genuine incubators within the company with high upside and tremendous tolerance for failure – challenging to pull it off.”

Chris Noe, lecturer at MIT Sloan School of Management, says: “size...growth slows down naturally with size competition...profit attracts competition and erodes returns, in part, by reducing revenue growth”. He recommends: “They have to come up with new technology, not an easy task.”

Jeff Furman, visiting professor at MIT Sloan School of Management, comments: “Growth and profitability sometimes go hand-in-hand, but the imperative to grow can also be the enemy of profitability.”

Saleh ‘Haji’ Munshi, President ASEAN at Cisco systems, also in the same email survey comments: “Having the right management team, ability to adapt to changing competitive environment and customer needs, continuing the innovation that got them ahead in the first place.” He recommends: “Build a culture of innovation right from the top. Hire leaders for breadth of experience, rather than depth of experience. Empower Corporate Development. Worry less about Wall Street.”

Sameer Garde, former Managing Director at Dell India, too shared his views in the same online survey for this thesis: “taking big and bold steps while managing the quarterly rigor of being a listed company becomes difficult for most CEOs. As we notice even today, in the tech world, innovation in the SMAC space is not happening either with the large services companies or with the large HW tech companies. Most of the innovation happens in the tech space at the startup level. Nutanix in storage is a great example. the big difference is the innovation index either for products/services or for business models.” To jump the financial S-curve, he recommends: “Hire great leaders with strong independent mandates from existing leaders. Lexus and Toyota is another way to do this.”

Prasad Kale, APJ Director of Cloud Business at Hewlett-Packard, says in the same online survey: “Lack of consistent foresight to predict technology trends and be ahead of them - lack consistent focus and prioritization for investment - conviction in the strategy - sticking to execution before frequent churn - stability of leadership - accept strategic mistakes and move

on." He too recommends: "There is no guarantee for a tech company to consistently jump S-curve. However, following are some recommendations: 1. Right culture - strategy & decisions are made at the ground level 2. Hands on management that knows DNA of the company 3. Not fall into 'groupthink' about technology trends 4. Financial prudence 5. Consistent long term strategy 6. Focus on driving shareholder value 7. Quit products that are not #1 or #2 in the industry 8. Build talent for the long term."

In my several years of experience in the tech industry, I have observed that leaders, even being aware of the S-curve phenomenon, have not been able to prioritize for the next S-curve in time. Many tech companies and their leaders have been stumped by the challenge of prioritization of managing power for the next financial S-curve.

Based on these insights from these practitioners, academicians, and business literature; I now discuss "how" tech companies can jump and climb the new financial S-curve.

Design Vision Strategy Execution Process (VSEP)

With the hierarchy of powers: *category, company, market, offer, execution*; the leaders should frame the vision, strategy, and execution to jump the financial S-curve.

Pre-Planning: Before starting a strategic planning process, the leader must focus on viewing the company from an outside-in perspective. The leader must ask "what" markets want from the company now. "What" opportunities are out there in the markets that the company want to help customers with.

Planning: After identifying these opportunities, the leader must organize efforts in three steps – vision, strategy, and execution. The leader should be able to articulate a compelling vision that other people would be excited to support. The leader needs to develop a strategy to position the company to win in the market and be the leader. The leader should be able to organize resources to execute successfully for ensuring profitable growth and achieving aspirational goals.

Vision: The leader must analyze category, company, and market to develop a vision. The leader must develop what is happening in the world now and what would happen in the future. Finally, the leader must connect them to the business the company is in.

Strategy: The leader must go down to the next level and use company, market, offer to develop a strategy for sustainable competitive advantage over the companies who have chosen to serve the same markets and customers.

Execution: The leader must reach the base and use market, offer, and execution to create an operating model that significantly changes resource allocation such that the competing companies will not be able to match now or later in the future.

All in all, the leader must take three separate rounds to complete the planning process. Each will get the leader to be closer to the present and also let the leader have a long term perspective. In the process, all the team members will be able to express themselves. Finally, they will be able to align themselves to a common point. They all will collectively work to see the plan through to fruition. (Moore G. , 2011, pp. 201, 202, 203)

Allocate Resources for Three Horizon Strategy (THS)

Starting with the strategic plan, the leader should allocate resources across three investment horizons. Each horizon is defined in terms of when the return on the investment will be realized. (The Alchemy of Growth: 3 Levels of Horizons by *McKinsey's research)*

Horizon 1: In the coming fiscal year, accretive to the operating plan. There is tangible returns in this horizon.

Horizon 2: In two to three years, following negative cash flow in the intervening period, making it dilutive to the operation plan. The intent is to translate one or more of the strategic options Horizon 3 into some Horizon 1 performance in the future.

Horizon 3: In three to five years, consisting primarily of research and development that is funded so as not to be dilutive to the operating plan. It is focused on creating portfolio of strategic options.

Not every Horizon 3 and Horizon 2 initiative is expected to get to Horizon 1 and reach scale, but no material escalation in market no material escalation in market valuation will occur until at least one does. (Moore G. A., 2015, pp. Kindle Location 342-343)

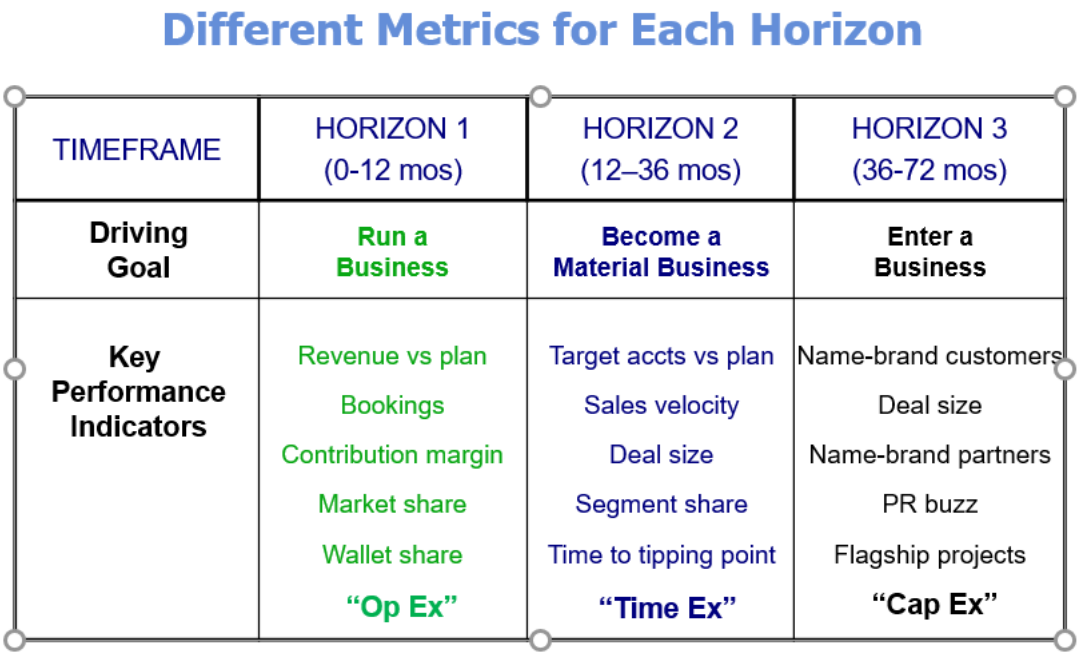

Figure 17: Different Metrics for Each Horizon

Source: Escape Velocity by Geoffrey Moore

To compete effectively, management must free itself. It needs to reconfigure its enterprise to fight independently on multiple fronts, acting in parallel but not in lockstep. Specifically, it needs to segregate its efforts in *disruptive innovation* from those in *sustaining innovation*, focusing the former on net new business and operating models and the latter on extensions and improvements to existing ones. At the same time, it needs to separate its *revenue performance* activities from its *enabling investments*, focusing the former on delivering results based on what the latter have helped to seed and till. (Moore G. A., 2015, pp. Kindle Locations 369-373)

Alan Mulally, former CEO of Ford and Boeing, has advised via the online survey for this thesis: "Validate technology and business plan." This is important to solve the CEO's dilemma

for having different business plans for sustaining and disrtupting technologies. It will ensure the company is prepared for both the *attack* and *defence* games.

Execute thru Zone Management System (ZMS)

The large and successful companies struggle to jump the S-curve because they are internally conflicted. To resolve these conflicts, Geoffrey Moore has recommended segmenting the entire company for distinct management zone. Each of them with its own methods and metrics. (Figure 18)

Figure 18: The Four Zones

Source: *Zone to Win* by Geoffrey Moore

The sustaining side of this model is the home of established businesses and their operating models, the return-on-investment focus being in Horizon 1. Their revenue performance

obligation is to "make the number," and they are supported in doing so by a variety of enabling investments in shared services. The disruptive side, by contrast, is the domain of emerging businesses. They are a set of enabling investments in Horizon 3, where fast failure is often a virtue. When it is time to choose one of these to bring to scale, management takes on a mission-critical obligation to generate revenue at a material level, nominally 10 percent or more of company's total revenue.

The differences among zones in terms of investment horizon, performance metrics, and operating cadence are so great that each warrants its own local playbook, with no zone being permitted to impose its local playbook on any of the other three. At the same time, however, all four zones need to interoperate with each other fluidly if the overall enterprise is to win the game. Thus, there is a need of an overarching playbook to govern them all, what for disruptors (*zone offense)* and what for disruptees (*zone defense)*. (Moore G. A., 2015, pp. Kindle Location 376-384)

i. The Performance Zone is home to the sales organizations accountable for bookings and the product and service organizations accountable for revenue—and no one else. Its critical metrics are bookings and revenues.
ii. The Productivity Zone is home to all the various cost center functions that enable the performance zone to perform. Virtually everyone who is not directly accountable for a booking or revenue number works here. Its critical metrics are efficiency, effectiveness, and regulatory compliance.
iii. The Incubation Zone is home to experiments to make, market, and sell products and services that are highly disruptive to the status quo. These efforts are deliberately kept sequestered from the prior two zones to speed cycle time, embrace innovation, and take risk. Success here consists of creating viable businesses in net new uncorrelated categories that can be scaled to material size.
iv. The Transformation Zone is home to success equates either to driving an incubated business to material scale or fending off a direct attack on a core business model. In either case an initiative in this zone takes priority over all activities in the other three zones, and they must make whatever adjustments necessary to accommodate it. Its

> demands are deeply disruptive to the functioning of all the other zones. Transformational initiatives can only succeed, therefore, by virtue of relentless, unremitting prioritization led and supervised by the CEO and enforced with strict discipline for the duration of the transformational period. (Moore G. , 2015)

Overall, the four zones should always be operating in harmony. During periods of stability, when the transformation zone is dormant, the performance zone is funding the entire operation, with help from the productivity zone, paving the way for the incubation zone, building up whatever reserves it can for the next transformation. During a zone offense, the transformation zone rules the roost, its priorities trumping all others, with the performance zone coming in second, the productivity zone third, and the incubation zone last. The same priorities hold for zone defense, the main difference being that the focus is not on adding a new business but rather on ensuring that an existing one does not get subtracted. Both offense and defense put the enterprise under significant stress, so everyone in all four zones should wake up every morning asking themselves, "What can we do today to accelerate the transformation initiative?" This isn't just altruism. It is also pain relief. (Moore G. A., 2015, pp. Kindle Locations 494-501)

In the foreword section of Geoffrey A. Moore's book *Zone to Win* (2015), Marc Benioff, Chairman and CEO, Salesforce confirmed the efficacy of the playbook: "Zone management is about dividing and conquering, establishing independent zones, each with what at Salesforce we call a V2MOM— Vision, Values, Methods, Obstacles, and Measures. Disruptive innovation— incubating or scaling new products or business opportunities— must be segregated from sustaining innovation— making improvements to existing entities. And, revenue performance— financial commitments from the more established parts of the business— must be separated from enabling investments— funding and resourcing new product and businesses opportunities."

Example of Jumping the Financial S-Curve

Apple is a classic example of how it managed all power to fuel its performance in last one decade. First of all, Apple chose all the right categories – for a portfolio of high growth categories (digital music, smartphone, touchscreen tablet). It also built its company power for a strong competitive advantage in the marketplace. It managed innovation so well that it offered the best products in all of those three categories. It also focused on building and engaging employees and partners to rally around and deliver great results for each offering – but one by one. The end result is: Apple the most valuable company. (Figure 19)

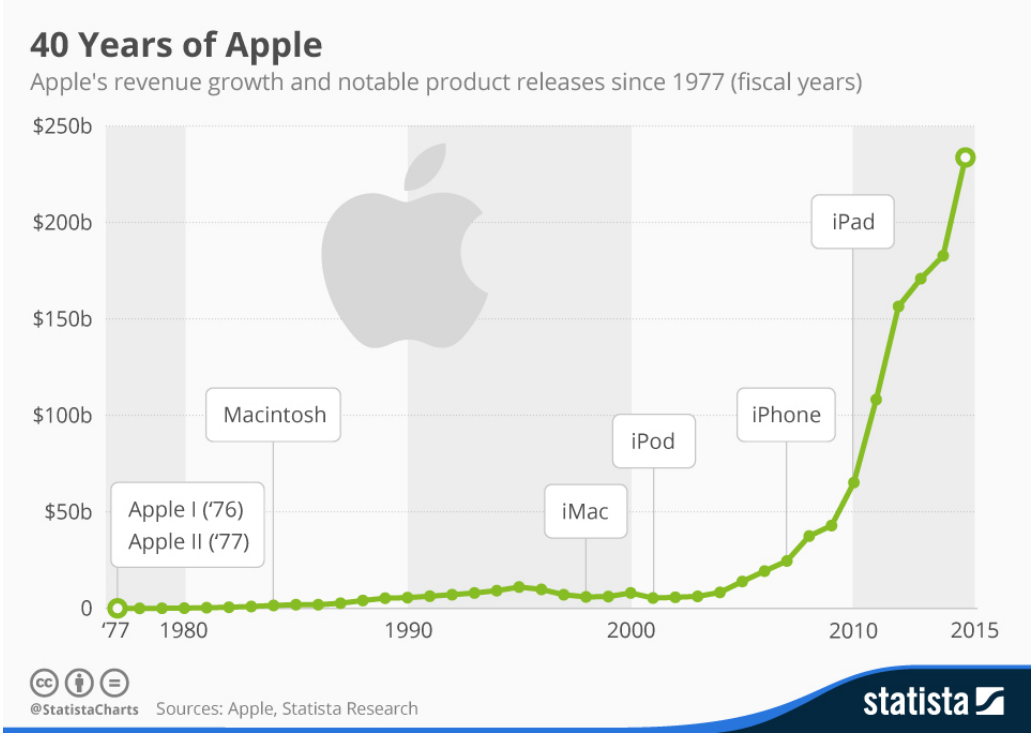

Figure 19: Apple's Revenue Growth with Product Releases

Source: https://www.statista.com/chart/4574/apples-revenue-since-1977/

Chapter 8: The Buck Starts with Leadership

"Good is the enemy of great. And that is one of the key reasons why we have so little that becomes great." – Jim Collins in Good to Great.

Paul Nunes and Tim Bernee in their book *Jumping the S-Curve* have quoted the story of Wang Laboratories. They have narrated why Wang Laboratories moved from being at the cutting edge of the industry to filing for bankruptcy protection and eventually being acquired by Getronics. They argued that the leadership capability also has its own S-curve. Companies must fully appreciate the importance of the leader's role. (Paul Nunes, Tim Breene, 2011, p. 152)

The leader's role is to focus on powers that fuel performance. The leader should conduct strategic planning at least a quarter prior to the annual operational planning. The leader should focus on what the market wants, not what the company wants. The leader should understand what will solve customers' problem, not what the company is comfortable doing. It's not about *you.* It's about *them* – the customers and the market.

Here is the singular job of the CEO and the signature accomplishment for that role – managing the zones to win. As long as the company is climbing the S-curve, the first three zones of performance, productivity and incubation – discussed in the previous chapter – work with each other very well. However, before peaking and plateauing, the company must activate the fourth zone of for transformation. Otherwise the first three start blaming each other. None of them know how to respond. That's when the CEO must step in and implement the transform zone for two to three years. It requires ruthless prioritization of the transformational initiative above any other activities and engagement across all four zones to manage it through to completion.

When asked about the *HP Way* in 2006, Mark Hurd, the then CEO of HP, said: "When things weren't right in the past, they were fixed. If things aren't right now, we've got to fix them. If that's countercultural to the past few years, so be it." (Lashinky, 2006)

Jim Collins in his book *Good to Great* has recommended for Level 5 Leadership and has argued for confronting the brutal facts: “Yes, leadership is about vision. But leadership is equally about creating a climate where the truth is heard and the brutal facts confronted. There is a huge difference between the opportunity to “have your say” and the opportunity to be heard. The good-to-great leaders understood this distinction, creating a culture wherein people had a tremendous opportunity to be heard and, ultimately, for the truth to be heard.” (Collins, 2001, p. 74)

Ed Catmull in his book *Creativity. Inc.* has referred to the inspirational leadership of Steve Jobs through his own experience: “Even when we were unsure how to reach our goal, our passion something Steve (Jobs) recognized and valued. That’s what Steve, John, and I ultimately bonded over: passion for excellence—a passion so ardent we were willing to argue and struggle and stay together, even when things got extremely uncomfortable.” (Catmull, 2014, p. 299)

Marshall Goldsmith in his book *What Got You Here Won’t Get You There* explains the opportunities from his coaching experience for leaders: “A few people never seem to need any help in getting to where they want to go. They have a built-in GPS mechanism. These people do not need my help. The people I meet during the course of my working day as an executive coach are great people who may have lost their internal “You Are Here” map.” (Goldsmith, 2007, p. 4)

Otto Scharmer and Katrin Kaufer in their book *Leading from the Emerging Future* recommend: “It requires us to suspend our judgements, redirect our attention, let go of the past, lean into the future that wants to emerge through us, and let it come.” (Otto Scharmer, Katrin Kaufer, 2103, p. 3)

The direct sales model had turned Dell into the top PC maker. However, when Michael Dell returned to the CEO position in 2007, he wrote in an email to all employees: “The direct model has been a revolution, but is not a religion. We will continue to improve our business model, and go beyond it, to give our customers what they really need.” (Gollner, 2007)

John Sterman, Professor of System Dynamics at MIT Sloan School of Management, in the online survey for this thesis emphasizes on “mental models of leaders” and “formal structure that avoids wholesome changes as they are disruptive.”

Donald Sull, Senior Lecturer at MIT Sloan School of Management, in a personal interview with me, said that strategic frames are mental models of the leaders. These model help leaders to see the world but they can also blind them. In his book, *Revival of the Fittest*, he has explained: “By continually focusing on the same aspects of business, frames can constrict managers’ vision, blinding them to novel opportunities and threats beyond their normal periphery. As their strategic frames grow more rigid, managers often force-fit surprising information into their existing mental model or ignore it altogether.” (Sull, 2003, p. 30)

However, we have to be realistic. A single leader alone cannot have all the capabilities recommended for the leadership of the company. The leader should be complemented by other people in the next line of leadership to complement with their skillsets.

In the article, *In Praise of the Incomplete Leader*, it has been acknowledged: “We’ve come to expect a lot of our leaders. Top executives, the thinking goes, should have the intellectual capacity to make sense of unfathomably complex issues, the imaginative power to paint a vision of the future that generates everyone’s enthusiasm, the operational know-how to translate strategy into concrete plans, and the interpersonal skills to foster commitment to undertakings that could cost people’s jobs should the fail. Unfortunately, no single person can possibly live up to those standards.” (Deborah Ancona, Thomas W. Malone, Wanda J. Orlikowski, Peter M. Senge, 2011, p. 179)

Michael Dell too admitted the role of “two-in-a-box” leadership when he passed the baton to Kevin Rollins. He commented, “It’s a myth that one person can run a company. It wasn’t true when I was the CEO, and it’s not true now that Kevin is the CEO. Large companies are complicated entities that require lots and lots of people to keep them dynamic and on track.” (Dell, 2006 , p. xxv)

When Indra Nooyi learned that she was going to become next CEO of PepsiCo, she hopped on a plane to Cape Cod where Mike White, her main competitor for the CEO position. She did

not want to lose company's best operations leader and her advisor in her new role. "Tell me whatever I need to do to keep you," she asked him. Mike later decided to stay. Indira ensured Mike's salary nearly matched hers and Mike sat on her right at all key meetings. (Morris, 2008)

Put Leadership Before Management:

When it comes to making a big bet on your next big thing, pick one. Not two, not three— one. This is the single most important job a CEO has. Choose one thing to be your company's next big thing, and then deliver on that future— to customers, to shareholders, to partners, to employees, and to your industry as a whole. If someone questions you putting all your eggs in one basket, just tell them, "In our company we like to lay eggs one at a time. By the way, we find most chickens do too." If your company could catch a new wave just once in a decade, it would be world-class. IBM did. Digital Equipment Corporation did not. Microsoft did. Lotus and Novell did not. That said, as we already noted, Steve Jobs did it three times in one decade. What is the single most important lesson leaders can learn from his performance? All of Apple's new lines of business were brought to scale one at a time! (Moore G. A., 2015, pp. Kindle Location 195-201)

Geoffrey Moore has recommended the following list of items to separate leadership and management to ensure leadership for power management is put before management for day-to-day business. (Figure 20)

Figure 20: Leadership vs. Management

Source: *Escape Velocity* by Geoffrey Moore

Chapter 9: Conclusion

In the previous chapters of this thesis, I have discussed “why” starting as a new tech company with a new offering of product and services or a new business model, climbing the upward growth trajectory, and later getting stuck in a flat or declining graph has been a common pattern. I have described the visible and hidden S-curves. I have highlighted “what” are the powers to proactively respond to those hidden S-curves. I have covered “how” these companies can create zones to keep winning the game. I have also explained “who” should own the responsibility.

Leaders manage their business by focusing on financial performance. Only when they are stuck at the peak of the visible financial S-curve do they start looking for areas to fix. Then the financial growth graph has already started flattening. They find jumping and creating a new financial S-curve near impossible.

Companies overlook the hidden S-curves. Those hidden S-curves are invisible forces in the company. These forces pull companies from being able to free up the future. Companies fail to respond to these hidden S-curves since they do not harvest their powers. In their hierarchy, these powers are: category, company, market, offer, and execution power. Therefore, there is a power failure usually when companies are large after having grown rapidly.

Power needs to be managed before performance. I argue that different powers need to be managed differently. Resources allocated to power must not be traded off under the pressure of performance.

In such a situation, leadership needs to become the first priority and management of the business the second priority. I describe the hierarchy of powers and priorities at different stages of a business life cycle.

Like sports, companies should be managed in the different zones. Play the game of *attack* and *defense* as the market condition demands. The leader should create four zones to win – performance, productivity, incubation, and transformation.

I propose a road map for companies to jump, create, and climb a new financial S-curve. This road map includes the following key steps.

1. Respond to hidden S-curves proactively by focusing on powers – *category, company, market, offer, and execution*.
2. Develop a vision-strategy-execution process (VSEP) separate from the day-to-day management of the business. Ensure all leaders are fully engaged in this process.
3. Conduct the strategic planning session separately, about a quarter before the annual planning session.
4. Allocate resources to the four powers depending on the market conditions, and status in those power areas.
5. Align resource allocations to the three horizon strategy (THS).
6. Manage portfolio of categories with focus on what markets want. Not what the company wants internally.
7. Decide on key actions for competitive advantage, by differentiating or neutralizing, for harvesting *company power*.
8. Choose whether to target consumer or commercial segments of the market. Be aware of the complexity of targeting both segments.
9. Manage innovation in products and services to create value for the customers, for harvesting *offer power*.
10. Allocate enough resources to execute all actions determined for harvesting all powers.
11. Establish the Zone Management System (ZMS). Create four zones – *performance, productivity, incubation, transformation* – to successfully sustain the current business, and also create new lines of business from time to time.
    a. Zone the entire company.
    b. Lock in the performance matrix for each zone.
    c. Activate the productivity zone.
    d. Fence off the incubation zone.
    e. Determine the status of the transformation zone from time to time.

12. Take full ownership of managing these four zones in collaboration of each other as the most important part of the CEO's role.

Moving forward, I would like to observe how tech companies and their leaders use such a road map. Their progress would be a reflection on the efficacy of this road map.

In a competitive global business environment, the advantage is with those who sight the changes in the marketplace early, quickly identify the pivotal role to play, and clearly articulate the vision with executable strategy to win the game.

Appendix A: Survey Questionnaire

Q1 - Do you agree with the statement that many tech companies have failed to jump the financial S-curve to create and climb the next financial S-Curve?

Q1.1 – (If disagree) Why do you think there is no such phenomenon of most tech companies failing to jump the financial S-curve?

Q2 - What are, in your opinion, the causes of this phenomenon of getting stuck in financial S-curve?

Q3 - Do you think there are some "hidden" S-curves (e.g. innovation, technology, leadership, etc.) that impact the "visible" financial S-curve?

Q4 - Can you please rank some of the "hidden" S-curves in order of significance from 1 - 7?

Innovation S-Curve, Technology S-Curve, Product S-Curve, Leadership S-Curve, Talent S-Curve, Capability S-Curve, Competition S-Curve

Q5 - Do you think are more "hidden" S-curve(s), in addition to the 7 mentioned in the last question, that impact the "visible" financial S-curve? If yes, can you please briefly describe?

Q6 - Do you agree with the following statement? "Some industries or markets are so mature or so competitive that it is impossible to substantially and continuously outperform competitors in them."

Q7 - Do you agree with the following statement?

"The bigger the company, the better it is to compete."

Q8 - Do you agree with the following statement?

"Companies can't pursue high growth and high profitability at the same time; they have to choose."

Q9 - Do you agree with the following statement?

"The rewards of seeking higher performance come only after years of hard work."

Q10 - Do you agree with the following statement?

"Being consistently above average in an industry is probably good enough."

Q11 - In large or established companies, what are the reasons for the inertia and not responding to changes proactively -- for creating and climbing the next financial S-curve? (You can select multiple options.)

a) *Strategic or competitive position*
b) *Formal structure that avoids wholesome changes as they are disruptive*
c) *Existing incentives because new incentives take time and work*
d) *Political structure that work against significant change*
e) *Cultural change which is most likely taken for granted*
f) *Mental model of leaders*
g) *Others*

Q12 - What would you recommend tech companies to do for jumping the financial S-curve and creating the new financial S-curve?

That's the end of the survey. Many thanks for your time. Sincerely appreciate your inputs.

Appendix B: People Interviewed

Subject Matter Experts

i. Geoffrey A. Moore: *Chairman Emeritus of The Chasm Group, The Chasm Institute,* and *TCG Advisors*. *Author of Crossing the Chasm*, *Escape Velocity, and Zone to Win.*

ii. Paul F. Nunes: *Global Managing Director, Accenture Institute for High Performance*. *Co-Author of Jumping the S-Curve, and Big Bang Disruption.*

Corporate Leaders

i. Alan R. Mulally: *Former President and CEO of Ford Motor Company. Former President and CEO of Boeing Commercial Planes.*

ii. William J. "Bill" Amelio: *Former President and CEO of Lenovo Group. Former President and CEO of CHC Helicopter.*

iii. Paul D. McKinnon: *Former Head of Human Resources and Talent Management at Citigroup. Senior Lecturer of Business Administration at Harvard Business School.*

iv. Sameer Garde: *Former President South Asia at Philips. Former President and Managing Director at Dell India*.

v. Saleh M. 'Haji' Munshi: *President ASEAN Region at Cisco Systems.*

vi. Prasad Kale: *Director APJ Cloud Solutions & Services at Hewlett Packard Enterprise*.

vii. Pankaj Rai: *Head Strategy at Well Fargo India.*

Academicians

i. Donald Lessard: *Professor of International Management, Emeritus at MIT Sloan School of Management*

ii. S.P. Kothari: *Professor of Accounting & Finance at MIT Sloan School of Management*

iii. John Sterman: *Professor of System Dynamics and Engineering Systems at MIT Sloan School of Management*
iv. Eleanor Westney: *Professor of Management, Emerita at MIT Sloan School of Management*
v. Donald Sull: *Senior Lecturer at MIT Sloan School of Management*
vi. Christopher Noe: *Senior Lecturer of Accounting at MIT Sloan School of Management*
vii. Jeff Furman: *Visiting Associate Professor at MIT Sloan School of Management*
viii. Nirmalya Kumar: *Former faculty at London Business School. Member – Group Executive Council at Tata Sons.*

Sloan Fellows

i. Dushyant Shahrawat: *MD, FinTech Associates, LLC. MIT Sloan Fellow 2015.*
ii. Manikandan Vijayaraghavan: *Director Deutsche Bank. MIT Sloan Fellow 2016.*
iii. Sunil Khandbahale: *Founder and CEO of Khandbahale.com. MIT Sloan Fellow 2016.*

Consulting Firm

i. Clayton Christensen Institute, Lexington (MA)
    a) Horace Dediu, *Senior Fellow*
    b) Aroop Gupta, *Researcher*
    c) Subhajit Das, *Researcher*

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