The Working Journey of

Elon Musk

“Do you think I am insane?”

By Andrew Olivier

Elon Musk’s question to Ashlee Vance, author of his 2015 biography “Do you think I’m insane?” frames the importance of providing a scientific understand of Elon Musk’s capability. In 2012 in an interview with Pandodaily he was asked the question do you think you are crazy and he replied “I have been thinking about that and probably am a bit”

This question reached out to me. Beneath the apparent random and messy pathway of our lives lies a spooky and incredibly logical order. That order provides certain guidelines and predictive points along which every life unfolds, whether we are in agreement, aware of it or not.

I have had a long term interest in charting the journey of interesting individuals and decided to attempt to construct the cognitive growth path of Elon, an important and intriguing visionary. Elon is neither mad nor insane. His feeling of being separate or different is based on how he processes data in order to make decisions. His capability is indeed different and rare.

This analysis sets out to chart, explain, compare and predict his capability.

This Working Journey story has not been constructed from a face to face capability interview, it has been derived from a variety of sources so it is tentative, but what is recorded in the public domain would support a consistent progression which can be mapped to the Growth Curves.
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Introduction

Elon Musk is a visionary entrepreneur, whose drive has given rebirth to the largely moribund old industries of automotive, aerospace and energy. Along the journey he has won accolades in his determination to create new ways of reaching for the stars, using renewable energy for powering homes and rewiring the automotive highways of the world. In the process, he has created three separate billion dollar companies and is the only other person to have ever done this.

He has had a single-minded determination to see his visions come to fruition. He has over the years built a formidable reputation of being difficult, unreasonably demanding and lacking in emotional savvy. He has also established a reputation of being very smart and totally focused. Many say he is in a class of his own. Elon is reported as being fundamentally different in the way he thinks, acts under pressure and of the understanding he has in his field. He is seen as being ruthless about getting his own way and not taking no for an answer. He has also been applauded for his long-term vision and of holding it even in the toughest of tough times and being focused on that picture in even the smallest details.

One of his senior employees commented “Elon is brilliant. He’s involved in just about everything. He understands everything. If he asks you a question you learn very quickly not to give him a gut reaction. He wants answers that get down to the fundamental laws of physics…. The stuff I have seen him do in his head is crazy…. It’s amazing to watch the amount of knowledge he has accumulated over the years. I don’t want to be the person who has to compete with Elon. You might as well leave the business and find something else fun to do. He will outmaneuver you, outthink you, and out-execute you.”

Yet even before as a young man he wanted an internet company and looking around, chose an old industry that was fat and complacent. He used the emerging technologies of the internet to create the first online bank, heralding the move of the banking industry in the digital age. Again, he was able to pinpoint an opportunity and acting with a vision of what might be, transformed the financial industry.

Background – theory thumbnail

Not everyone is able to create a vision that can be turned into reality, especially one that generates wealth and even more so one that has the greater good underlying it. The reality is that only a very small percentage can actually do it. Many of us dream of having our own business and many of us do. Some of us may dream of leading a major corporation, but fewer of us do. Some of us may dream of a noble cause and changing the world in some way, but even fewer do.

Human potential (we will refer to it as capability) is underpinned by a deep and emergent order, comprising fractal patterns which increase in the ability to handle growing complexity. As we have evolved so has the need and ability of our species to deal with ever-increasing complexity¹ in order to make decisions. Einstein’s comment of “We cannot solve our problems with the same level of thinking that created them”¹ has a scientific basis.

¹ Complexity may be defined in terms of the number of variables operating in a situation, the clarity and precision with which they can be identified, and their rate of change. Jaques, Elliott. Requisite Organisation. Cason Hall. 1989. page pair 23
Dr Elliot Jaques and colleagues have over the years found that our information processing (cognitive processes) fall into quintaves of increasing complexity, grouped into **Orders of Information Complexity**. This knowledge provides a unique insight into understanding the evolution of human capability as a species and for each individual.

People grow cognitively at different rates and has the practical implication that some people find satisfaction with one type of work for very long periods of life, while others may be on a more rapid growth track and search for different and greater work challenges at fairly regular intervals. We know that relatively few people become effective CEOs, and a much smaller group than that become successful CEOs of major and international corporations. Similarly, in all key leadership roles, whether in politics, academia, the military, organized crime, government bureaucrats, authors, international consultants or artists – those who are successful at the top of the work pyramid are normally exceptional people.

So why are they exceptional and what lies at the root of it? I refer only to their Working Journey, not their personal or private Journeys or whether they are “good” or “bad”. The answer lies in that deep order, which manifests itself in our “horsepower” – our ability to deal with complexity. Jaques identified that this cognitive power has a strong biological link and that it grows at a predictable rate over time along certain Growth Modes\(^2\). Figure I below illustrate these Growth Curves with the eight modes. Elon own growth curves are presented in Figure 2 on page 16.

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**Figure I: The Array of Growth Curves**

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\(^2\) These Growth Modes indicate the rate of cognitive growth of individuals. There is a strong similarity between these non linear curves and the Gompertz equations, which is the rate that nature germinates seedlings.
The bulk of humanity play out their Working Journey in what he refers to as the realm of Ordinary Mortals a world of work which is located in the 3rd Order of Information Processing. It here we find Work Levels I – IV and Growth Modes I - IV. The legacies we create at work may last years – from one year or more, to possibly a decade. The next major grouping is much, much smaller, the talent pool shrinking significantly to what Jaques refers to as Exceptional Mortals – those found in the 4th Order of Information Processing. This includes Work Levels V – VIII and whose legacies may last up to multiple decades and I suspect beyond. Here we find those who step forward to lead large complex structures. It is this group where we find leadership that may manage organisations ranging from hundreds to millions, directly or indirectly. It is in this grouping that we find Presidents and Prime Ministers, leading consultants, entrepreneurs and power brokers. We are able to recognize in people those characteristics which make them different and are often attracted to them because of this power. It is in part charisma, but it is a sense of knowing or prescience, or having a clarity of thought and purpose that is different and this difference is salient to others. Growth Mode V – VIII are part of this Order of Information

Extraordinary Mortals (of whom we don’t have many – being the equivalent of the “Insane” button on the Tesla) are found in the 5th Order of Information Processing and there are no work levels present to describe this as yet and whose legacies may last centuries. Here we find people who actively shape human society – creating new languages to give voice to new ideas and ways of being and doing. They often put themselves at considerable personal risk as they clash with long established institutions and understandings. New infrastructure and support mechanisms are often established in an attempt to create the future. Growth Mode VIII is the start of this Order of Information Processing. People who operate in this level may perceive themselves as starkly different and may question their own reasoning and sanity.

Legendary Mortals (and even less of them) are found in the 6th Order of Information Processing and whose work / lessons may last centuries to millennia. Here individuals create legacies that influence human life and thought about the meaning of life.

This order is measurable and thus individual growth curves are identifiable allowing us to predict, and often with great accuracy how an individual’s Working Journeys may broadly develop over time. Part of this research has highlighted that when people transition from one type of information processing to another, bifurcation points of opportunity are created or may arise. Technically, transitions points are when we move from one order of mental processing to another and into a new level of work capability.

Transitions points are critical for everyone, because it is a time when we experience an involuntary call to adventure; to new and bigger challenges, maybe a different horizon and sometimes a complete reformulation of our Journey. Some may experience only one transition, others two or more and a rapidly decreasing number will experience an increasingly greater number of transitions. Each transition is a Call to Adventure – which we may choose to ignore at great personal cost since it represents that deep order calling on us to actualize our capability, to seek challenges to find fulfillment and a sense of destiny and as Mihaly Csikszentmihalyi says, “flow” or Joseph Campbell’s “Bliss”.

If we have warning on when we may transition, at what possible ages, what the next stage may be like, how many more are there likely to be, where am I now vis a vis where I should be, we suddenly have navigation beacons and a broad direction into the future. This is both a GPS positioning and a compass bearing that allows us to stock take and also enables us to plan how we may optimize our journey for enjoyment and purpose, what detours are not worth the risk and which may be, what

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3 For more information on Work Levels please refer to the Annexure, page 19.
4 There is an actual “Insane Button” in the Tesla Model S P85D all-electric car, which takes the driver from 0-60mph in 3 seconds.
skills and experience we should actively seek, why and even when. To this extent there is a validity to that age-old concept of predestination, but the bearing will not reveal the multiple destinations possible, the outcomes – successes and failures, good or evil, actualization or not. It gives us advance knowledge about the fundamental nature of ourselves and a compass bearing to ensure we are more or less on course. For some, like Elon who is on an extremely rapid Growth Curve it provides understanding that no, you are not crazy, just that you fundamentally process data differently and choose to exercise judgement in a way that may appear “mad” or not understandable to others.

An Extraordinary Life - “Connecting up”

As a rule of thumb, you can detect capability early in children by what they do, how they behave and how they think about time. For youngsters on steep growth curves (modes) they tend to reach high orders of information processing so much younger. For example, Muhammad Yunus wrote his first complete book at the age of eleven and in his avid pursuit of reading, went to some extraordinary lengths to secure reading material. One example he gives is picking a comic book competition winner’s name and sending the magazine a change of address to so that he would receive the winner’s copies! Richard Branson’s performance at school is legendary but no wonder school held little or no interest for this youngster. He was bored with the pace, breadth and way of learning that school offered. As a teenager, he was wanting to shape a complex world that looked for the relationships and paths of actions for creating and shaping outcomes. He liked to deal with a range of topics quickly, moving from one idea to another and with that, he was looking for challenges that school could not possibly offer.

So it was for the young Elon, who was bored with the slow pace of learning at school and who like Yunus, read avidly. He recalls spending his time after school reading all the comics and then devouring all the books he could find. His brother said he read up to ten hours a day. He was seen as being different by his peers. Having a photographic memory and the ability to process data and images mentally also set him apart.

Where we get a positive quantitative fix on his cognitive processing capability is he designed, produced and sold a video game for $500 at the age of 12. He learnt the BASIC manual in three days nonstop and successfully completed a sales transaction, underscores his capability in action.

This type of cognitive processing is summarised by the term ACCUMULATING or a CUMULATIVE APPROACH. Here diagnostic judgement making is concerned with accumulating information about a situation, reflecting on how best it might be dealt with and trying each option out in imagination before making a choice. People comfortable with this type of complexity enjoy evaluating options and looking for potential problems and obstacles. Data and information is important in this form of capability as is the attention on the particular. It is very unusual for a child to be comfortable to process information in this manner at such a young age.

What seems highly likely is that he experienced a transition between the ages of 12 and 17 to a more complex way of thinking. This is based on a number of observables taken contextually. It was during these young teenage years the fascinating with space had begun – he was heavily influenced by Adam’s Hitchhikers Guide to the Galaxy and began to form views on fossil fuels and renewable energies. Early indicators were Elon bringing rockets to schools, debating against fossil fuels in favour of solar energy and talking about whether bank branches would be necessary in a paperless age. He

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5 I have not been able to find any references to how Elon viewed time as a child.
said he ran out of books and began reading Encyclopaedia Britannica. At the age of 14 he rejected religion and formed a view at 14 about “collective enlighten” being his quest. He was brilliant at math but not a school perform. Like Branson he found school was boring, but he started some entrepreneurial pursuits with video games and setting up an arcade. Childhood was not a happy period for Elon and this coupled with bullying at school left him with a sense of no place to hide and the need to turn inward for nurture.

But he was close to his cousins and siblings who would later come to play important roles in his Working Journey in the US. Between 13 and 16 the boys chased parties and geeky exploits, such as Dungeon and Dragons and under Elon’s leadership won the tournament. Elon could set the scene for imagination and keeping people enthralled. Elon found his country of birth, South Africa, a challenging place to be and wanted to live in the US even as a youngster. Elon left South Africa as soon as he could, aiming at the US. Through his mother’s side he obtained a visa for Canada, where he attended Queens College. He tried to set up meetings with people he thought interesting and so impressed a top executive at the Bank of Nova Scotia, (who said he was “so determined”) that he got an internship with the bank on summer vacations. He soon started a business fixing computers. Elon was more focused in this cycle, far more ambitious then in school and began to display intensity and the competitiveness he would become known for. He transferred to Penn University where he really blossomed and where one person said “This was a group of fairly high achievers and Elon stood way outside of the Bell Curve”.

The capability of people in flow with this Work Level is summarised by the term CONNECTING or SERIAL PROCESSING. Here the person weighs up the current situation against that which is planned. The individual is able to deal with multiple activities at the same time, considering alternative paths for achieving objectives. These are created and weighed up for the most favourable solution to meet future needs and to ensure continuity of what is. A dynamic picture is thus created looking for alternative ways of achieving goals, which consider the principles of how different parts of the current or future work system/life fabric connect together to ensure workflow or alignment of plans both present and future. Here one uses symbolic Sequential Thought Processes for dealing with one issue at a time. The alternatives are real and tangible. For Elon this cycle of capability lasted till about 21/22 when another significant transition would take place.

Transition to Work Level IV in his early to mid-twenties - “mental modelling”

Only a small group of people are capable of this type of information processing in their 20’s and this tends to set them aside from others. This new type of capability is what we refer to as “PARALLEL PROCESSING” and the cognitive process is to construct a MENTAL MODEL of how things may work and assume that the gaps in knowledge are either not important, because the general outcome is envisaged or that the gaps offer opportunities. Individuals comfortable with this processing so young will feel themselves separate from their peers and family.

With this thinking comes the ability to hold an outcome or picture in mind and compare the merits of alternative processes, systems and approaches to achieving that picture/mental model. If necessary one may alter the mental model as reality unfolds. Thinking often takes place within constructed frameworks guided by hypothesis, factoring in and being comfortable with what cannot be known. The individual can conceptually hold in mind a number of actual or envisaged different processes, operating independently or linked, aimed at achieving the constructed mental models.

Elon was entering a Life Cycle that would last some eight to ten years. He transferred to Penn University where he would graduate. Elon won academic acclaim at university by being able to muster
difficult physics concepts and integrate them into business plans, such as that early harbinger “The Importance of Being Solar”. While thinking briefly about going into video games, a long time passion, he was not grabbed by the industry’s ability to make an impact that would make “things better”, so he turned his attention to three areas that interested him because he felt he could make a difference. These emergent areas were all ones in which he had wanted to play for a long time; internet, renewable energy and space.

He moved to Stanford to start a PHD, but left two days later eager “to do stuff”. He decided to start own internet company, Zip2. Described as a ball of energy, Elon held the vision for Zip2, working insane hours, coding, improving, hiring and the company soon attracted attention. Within a short period venture capital began flowing in and the complexity of the business increased, but Elon then lost control of the company. Losing control was to be a valuable lesson for the young man because he could no longer steer the enterprise. The new CEO and board took the company in different direction and Zip2 merged with a competitor. Elon wanted to be CEO but he was told not ready to be a CEO, he lacked the skills and wisdom to do the job. Later he would admit that up to that point he had never managed anyone or anything". Zip2 was suddenly sold and the 28-year-old Elon received $22m. Great!

At the age of 28 this cycle of his capability was maturing. This is demonstrated by Elon investing heavily into a new company, X.com with four co-founders. He was the biggest shareholder. It was a move into an industry about which he knew little (a trademark) but he still wanted to make his mark with having an internet company. He felt he could change the way people moved money and indeed their relationship with it. His internship job in the bank had left him with the view that bankers are rich and dumb and follow only what other have done. Elon wanted a new type of bank and formed a complex model of how it might work. Overcoming objections and “can’t be done” attitudes, Elon obtained a banking licence, a mutual fund licence and formed a partnership with Barclay Bank at age 29. He went live with a revolutionary online bank in 1999. XCom later merged with its competitor Co-finity and again he was ousted as CEO in a coup, and the company renamed Paypal. It became the leading payment system in the world.

The evidence for a quantitative fix that Elon was processing data from a Level IV or “Modelling” capability in the ages between 21 and 31 could be:

- Entered a new industry with little knowledge (working from a vision or abstract conceptual model of what may be)
- From this idea, created and executed the plan (formed a number of serial pathways that integrated and crossed over to delivery on the envisaged model)
- Envisaged early pieces of technology that were not yet emergent and which would become mainstay of web (directories, maps, sites) and developed them into his business model
- Took his internet company vision to another level with a fully-fledged internet bank, bringing standard financial instruments online and modernise industry with new concepts
- Capable of pulling off not only the conceptual design but also the execution, a rare enough factor
- Integrated marketing, negotiating, technology and financial functions and feats. He was playing at the highest level with confidence. This is a fractal pattern of that accumulating capability that saw him sell his software game at age 12.
- After being ousted, he would still provide advice so it survived the dotcom bubble and became first big IPO after 9/11 while rest of industry mired in slowdown.
- Understood early on the need to attract top talent – (super bright employees were attracted to PayPal),
- An outcome was to become part of the “ruling class of Silicon valley”; a difficult feat
- By 2014 Paypal had 153 million users. The company has grown and survived for a longer time horizon than that which defines a level IV work decision. This is the mirror of Elon’s
growth mode, the capability to envision futures that stretch beyond the maximum time span of the associated work level\(^6\) where he would have been comfortable operating at that particular point in time. Elon believes it would have been bigger if followed his advice of chasing consumers.

PayPal was a mixed bag for Elon as his reputation suffered in aftermath of the deal and the media turned on him for first time. He is reported to takes things very personally and usually seeks war when in a conflict of interests. His personality or temperament is that he is a “know it all” and his big ego creates all sorts of problems. The growth of wisdom takes a long time and is often learnt through taking pain pills. At Zip2 and PayPal both boards said he was not ready for a CEO role. This is an important observation, but not one that dampened his enthusiasm or vision.

For the sake of neatness of narrative, let us conclude this cycle by saying at the age of 31/32 EBay bought PayPal and Elon received a large sum of money. This is now entering the transition point at the age 30/31 where he starts branching into new industries, again one of which he knows very little.

Elon was already cognitively engaged in his next passion and his next cognitive transition would assist in positioning him in this global and very regulated market that was dominated by governments, national rivalries and strategic needs (and a very small number of big powerful corporate players). Even before PayPal was sold Elon was involved with conceptualising a childhood dream, a new and bold plan.

Space and Mars.

**Transition to Work Level V - a new kind of Processing Power; “weaving” emerges in the early thirties.**

The transition into the cognitive capability associated with functioning in Work Level V marks a quantum shift in processing power of an individual as he moves into a new Order of Information processing. Each order is grouped into four processes of increasing information processing power. In summary, the capability associated with this Work Level is the first level where fourth order sensed intangibles (e.g. culture and values, markets, industry trends, foreign policy, social movements, currency markets, free trade, globalism) become key parts of judgment making. Judgment making is based on the interconnectedness of events across a broad spectrum of political, social, technological, environmental, economic and the spiritual.

The capability at this level sees potential links between events or changes and the impact on the unified system. Instead of one mental model, the potential ability is to now hold a number of such models and to create new configurations through examining the links between these sensed intangibles. Judgment is the ability to discern which links may have ramifications or hold opportunities and how they may unfold in the future. Links are seen between apparently unrelated issues or events and these may be as interesting as the issues themselves. New knowledge or insights may be applied to create new configurations and patterns of understanding.

\(^6\) Time Span is the measure of complexity of the task. The amount of Time that elapses before the level above manager (or stakeholders) can see the outcome of the most complex task. For Work Level IV or Strategic Development work this is a maximum of 5 years.
Such capability allows the redefining of previously relationships and boundaries and even holding that redefinition open as it creates new fields of knowledge or in the reformulation of frameworks for achieving innovative progress.

One of the characteristics of this work level and its associated capability is having the potential to rewrite or redefine standards for an industry. For those individuals with capability to go through and beyond they theoretically could go about remoulding the industry, giving it a new lexicon and new symbols. So, it was with the automotive, energy and aeronautical industries, the three separate industries that Elon would tackle (and in which he would succeed) during this key cycle of the growth of his capability.

Work Level V is for many high mode entrepreneurs and thought leaders the place where it all comes together. Work Level V is where established industries can be reshaped, restructured and turned on their heads. It is also the Work Level where new industries with a new language can be born. This is the Work Level where Muhammad Yunus set up microcredit as a new industry, where James Lovelock formulated the Gaia hypothesis and on the other side of the spectrum, where Eeben Barlow set a global precedent for new Private Military Corporations and where Richard Branson with his established Virgin brand and now took on the challenge of public transport by setting up an airline.\textsuperscript{v}

SpaceX

People with the capability to shape society often settle into their true purpose here. For Elon this was the time of laying down his major building blocks for the future. He realised part of the problem with space (and his Mars vision) was the cost to launch and that rockets had not basically evolved since the 60'. While Mars remains an end goal he quickly realized that a first step was making space flight cheap and scalable. However, the industry was moribund and dominated by big, slow and uncompetitive players.

He first discovered the huge costs associated with launching when trying to get rockets to launch his “Mars Oasis” package. He flew to Russia twice trying to buy rockets and on his flight home worked out could build it for 3% of costs with margins. His colleagues were sitting on the plan, dispirited - “We’re thinking, Fucking Nerd. What can he be doing now?” and he says “I think we can build it ourselves”.\textsuperscript{vi} Elon had constructed a spreadsheet with the costs of material needed to build, assemble and launch a rocket, plus its hypothetical performance characteristic. He had researched the aerospace industry and physics behind it.

His method of analysis is what he refers to as reducing an issue down to its fundamental truth and then building it up from there. In an interview, he was explaining how this works for him and that it was difficult and you did not do it all the time. It was as “basic as what are components, what is their cost, for example metal on the spot market”\textsuperscript{vii} This is a wonderful example of this processing capability which is focussed on creating new models and configurations through examining separate bodies of knowledge to understand the links between them and then “weaving” them into a new outcome.

In 2003; at the age of 31/32 PayPal went public and Elon set up SpaceX, with the aim of filling a market need for a cost effective, safe alternative to take commercial and research payloads into space that would reduce costs per launch and launch on a regular basis. The US had lost the ability to do this and was reliant on Russia. This was an industry dominated by countries and a few heavyweights and now a new player had entered the market, a small Silicon Valley start-up doing the impossible. Over the course of this cycle (eight to ten years) Musk as CEO and CTO was setting the company up to be successful, sometimes against all odds (including the near-death experience of 2008). And what is more, SpaceX built everything themselves, using a vertical integration approach to build the company. They own the supply chain and can make, fix and change as they require.
Elon had learnt a few things about how business works and so SpaceX entered the market lobbying with sophisticated campaign. It held an outrageous and attractor vision - that a private company could go where only governments and the biggest of corporations could go, to space, cheaply, safely and at the same time declared that colonising Mars was its objective.

Elon as CEO was its sole investor for most of early years. After having been turned down as CEO of his previous companies he now started to show his true capability; not only mastering the technical requirements of his new role but taking on the mantle of all functions in the race for success. He moved SpaceX to California, created a new works place using a Musk design that would become standard for his companies and also a different office design, bringing engineers and machinists together rather in separate silos. He went about attracting the brightest of the bright and for engineers who with little exciting choice in that industry, flocked to this new and exciting opportunity “to do shit” and get into space. Musk set insane deadlines and as a demanding and unreasonable entrepreneur expected people to show the same dedication as he did. Space enthusiasts were thrilled that here was someone actually doing something new. The air force was interested, “It was clear Elon was different. He was a visionary who really understood the rocket technology and I was impressed by him”.

**Tesla and Solar City**

Elon’s capability could hold multiple complex models in his head at this stage. At the age of 33/34 the founders of Tesla approached him to become Chair. He was now well known for his interest in electric cars and had been asking lots of questions about Tesla’s financial model. He agreed and it was a good fit. Musk with his unusual combination of high cognitive capability, knowledge, skills and experience, plus an over the top commitment to valuing the work (a firm vision to end US fossil fuel addiction) coupled with a demanding and unreasonable Temperament made him well suited to the challenge.

Like SpaceX, Tesla was doing it from the ground up with new technologies— no one had ever tried to combine hundreds of lithium ion batteries in parallel. Although Elon was involved in capital raising for Tesla he did not play a hugely actively role in Tesla initially, but had lots of influence on design.

At 38 another block was put in place as he provided a concept and capital to start Solar City. During the same year SpaceX won a contract to develop and test new launch vehicles to take cargo into space and Tesla cars first went on display “Until today, all electric cars have sucked” Elon commented. Tesla was firmly on way to inventing battery technology that would set it apart from its rivals for years to come. It had at that time 100 employees and a year later it would double to 260. The roadster was big news in motoring industry and Tesla turned Silicon Valley into a real threat for Detroit. There was a big pre-order and Elon won a contract with Daimler Benz for electric engines, but disaster was around the corner as rocket flight number 3 failed and the GFC loomed.

**Pressure**

The end of 2008 saw Elon mounting multiple campaigns to try to save his companies. “He has the ability to work harder and endure more stress then anyone I’ve ever met. What he went through in 2008 would have broken anyone else. He didn’t just survive. He kept working and stayed focused.”

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7 See page 19 for explanation of the formula for explaining current level of actual capability

CAC=f.CP.K/S/E.V.Wi (-T)

8 An interesting observation on creativity among high potentials is the ability to create causal linkages between unrelated objects. This is a result of the links between intangibles creating a new set of information or opportunities.
Most people who are under that sort of pressure fray. Their decision go bad. Elon gets hype-rational. He still able to make very clear, long term decisions. The harder it gets, the better he gets.”

On the Private Journey, there was at the same time a failed and bitter end to a marriage. It was a very bad year and the financial strain would see him selling off personal items to cover costs. Tesla was saved as Musk says at the last hour possible. However Musk shielded employees and told them to do their best work and he kept holding the vision; encouraging them. Elon would take over as CEO and CTO and started rebuilding Tesla as he discovered the actual state of affairs in the company.

Soaring

The annus horribilis ended and 2009 surged ahead on a new positive note. In 2009 SpaceX, on the last rocket launch, SpaceX launched the first privately funded rocket to put a satellite into space and won a contract for 12 flights of Falcon 9 and Dragon to ISS. This marked a six-year journey and took four and a half years longer than Musk anticipated.

As another cognitive transition loomed for Elon, SpaceX and Tesla and indeed Solar City were firmly on the map and in 2010 Elon was listed as one of Time’s top 100 most influential people. In 2011 Forbes ranked Elon as one of the 20 most powerful American CEOs under 40. Elon had kept the guiding vision and passion of going to Mars and having cool, reusable spacecraft. At the same time he held the vision of us as a spacefaring civilisation, underpinned by a sound business model. SpaceX worked on parallel projects and during the time they were struggling to make payroll, they announced building on Dragon X and another new rocket.

Transition to Work Level VI – entering the Values Domain of Work; shaping societal values by “revealing”

Work at this level calls for a wide understanding of global events and trends, it calls for multidimensional thinking and requires the individual to integrate a variety of societal, environmental, spiritual and business needs and issues into a holistic plan or context for decision making. Influencing, shaping and steering value systems become the dominant theme of work.

Global issues mean that interests must be contextualised within an increasingly wide and often international sphere of influence. Individuals at this level of capability normally base their judgement upon taking account of the known, the expected and the unexpected. All sources and trends may be considered.

This is a fractal of the Modelling Capability of Work Level IV but now there may be multiple businesses, revenue streams and geographical spread which require being coordinated, integrated and synthesised using a conceptual model of what the future may hold.

Both the expected and unexpected provide input into creating understanding of likely sources of strategic opportunities, options, potential instabilities and vulnerabilities. This Work Level is also about making decisions on what assets are worth investing in, disinvesting and what needs to continue.

The capability of people in flow with this level of complexity is summarised by the term REVEALING or world-wide DIAGNOSTIC ACCUMULATION. New insights and new perspectives are obtained regarding that which is already present and which may have implications over twenty or more years. New knowledge may be created and with it, a new language.

The primary tools of this approach are the intangibles characterised by thoughts, words and ideas that refer to other thoughts and ideas rather than to things. The “intangibles” can always be connected directly to large-scale particulars and trends or patterns made known. They are made tangible to wide audiences with the idea of informing, warning or identifying a wave of opportunity.
Judgement at this level may take one or more decades to materialise or be found to have been predictive. Thought leaders, high level policy advisors and group executive of true international companies are found in this work level.

Elon transitioned to this level of capability around forty and the cycle will last till approximately fifty. He remains firmly behind the wheel of his companies, as they still work through the Adolescence phase of business. They are not yet in Prime and still have their founder at the helm. Indications show that he will remain with them to achieve his prime vision, going to and colonising Mars. SpaceX, since getting past its 2008 near death, is profitable and worth $12b. In 2012 Dragon berthed with the ISS, the first commercial company to launch and berth a space vehicle in space.

SpaceX is a consistent operator now, blasting off once a month carrying satellites and supplies for companies and nations. They have undercut big competitors like Boeing and Lockheed by big margins, and once again made the US a player in the worldwide commercial launch market. They continue to build new machines from scratch with new technologies and have beaten countries with big budgets and in some cases, cheap labour. Its website lists a page of upcoming launches for an impressive list of clients.

SpaceX has given back the US the ability to play in space, a capability it lost with the retirement of the shuttle and reliance on Russia, which could cut it off at will. Both China and Russia are now rebuilding their space programmes. Musk wants to go further, making it cheaper and using reusable equipment. Elon wants to cut its price down to 1/10 of rivals and lower the costs to the point where it becomes possible to start a Mars colony.

SpaceX is Musk, his attention to detail his vision, his involvement. Employees fear Musk and adore him. His demanding management style survives because of his ethos of his company and its vision. SpaceX is for futurists. Its forward thinking makes the place feels like a start-up, with reputed speedy decision making that makes for a flat corporate structure and his passion for talent. Most people stay on five years to get their stock options and to see projects through. People say his vision is so clear which is why it is so compelling and they get work that stretches them.

Tesla continued to win accolades. The Model S started delivery and won international acclaim as the car of the year. GM struggle to catch up with the Volt. Elon has brought in Daimler and Toyota as long-term investors and new production facilities open for Solar City and Tesla. In 2015 came the announcement of the revolutionary Tesla Power Wall that will allow for off grid energy self-sufficiency. And the companies share engineering know-how and components where possible. Tesla and SpaceX are all designed on vertically integrated models. By 2014 SpaceX was one of two remaining contractors in the Commercial Crew development programme.

Elon’s visions still burn strong. He wants to bring down the cost of electric cars. At the age of 41 Elon announced he wants to build a sub US $30K unit and sell power trains and components to other auto makers so they can also produce electric cars. Elon says he may get out of the electric car business when he feels that the Tesla mission is fulfilled – that being at some point when all cars are electric. That is still 20 years away he feels, because of the huge sunken infrastructure in fossil fuels. Tesla’s mission is to "fundamentally change the way the world uses energy" by "fostering a clean energy ecosystem and helping wean the world off fossil fuels using backup energy storage for renewable energy." Tesla is actively working on an expanded supercharger network and greater deliver of cars and increased financing options. He believes Tesla is a huge catalyst for change.

An indication of his still emergent Level VI capability in his early forties could be;

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10 This would be a study I would be very interested in doing; profiling these companies from a Requisite Perspective to look at structure, leadership and capability.

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Delivering the biggest advances, the space, automotive and energy – Elon has taken over industries given up on as old and then through understanding what is not happening that needs to, has reshaped them into something exciting. His growth in this level of capability is characterised by big ideas and big products. His ideas are not consumer based, they do not touch millions or billions like a Facebook or iPhone, but they had the potential to fire the imagination. A Mars landing may be bigger than the moon landing was in 1969. The world is more connected up now and this offers the potential to influence and shape value systems, a process he already has firmly underway.

* In 2012 Dragon berthed with the International Space Station, a world first and Tesla began delivery of the Model S, at the same time unveiling Model X. Only Steve Jobs has been able to deliver two major events in two different industries in the same year (New Apple product and Pixar movie). This success has let to competitors such as George Bezo’s space company Blue Origin making progress and Virgin Galactic announcing increased performance on its satellite launcher.

* In 2015 he was compared to Henry Ford.

* Introducing new concepts which he has “given away” to others who may have the time, energy and resources to develop them.

* Elon continues to integrate the different businesses where possible – not only in design and manufacturing; for example engineers form SpaceX and Tesla worked on the conceptual foundation and design for Elon’s Hyperloop, an idea Musk announced in 2013 as a fifth mode of transport but wants other to develop. He has made the white paper available to genuine players and a company is now undertaking this.

Comparatively, Richard Branson at the same age and entering the same level of work saw an explosion in his business activities, including Virgin Galactic (realised the cost of putting a tourist into space was so high it was just waiting for a competitor), Virgin Blue, Railways, Virgin Mobile – with business growing in Europe, Australia, US, UK. Mhammed Yunus (Nobel Peace Prize Winner) saw his Grameen Bank formed and during this same level of capability, helped the model be replicated in 59 countries, bursting into the world with its own language and symbols, like James Lovelock’s Gaia.

Elon’s vision of the future provides enough impetus and challenge to keep him fully occupied for the full course of his Working Journey. In a 2015 interview Elon said in response to the question of how he personally managed three companies he replied “I don’t recommend, I don’t run solar city, a day a month thing. SpaceX and Tesla is every day, every night, every weekend. … I did not expect to be big, thought we would fail. If you rank opportunities, space and cars is a graveyard. We came close to dying at end of 2008. There are important problems that needed to be solved – sustainable and renewable energy, electric cars, space. There was no great plan, but the expectation was there™

In 2012 post a conference on Philanthropy (during a very poorly handled interview with The Economist) he said he had learnt a lot, but would not divulge information on what he may be planning. The Musk Foundation has existed since 2002 and is not unsurprisingly focussed on research and advocacy of renewable energy, human space exploration, science and engineering education and paediatrics. This may be an area of increased focus in the coming years.
Transition to Work Level VII in his early fifties.

The capability associated with this level of capability is prescience and is about revealing the future to others. It represents the ability to re-interpret the present so as create a new language and values which will encompass many areas of human activity & knowledge. The capability of people in flow with this level of complexity is summarised by the term PREVIEWING or world-wide SERIAL PROCESSING.

This Level of Work and its associated human capability is about making the future real, about having the capability to provide a “preview” of what is coming at us and having the corporate prescience to invest in that future. It is prescience.

The key differentiators for Elon in this level of work – and which may separate SpaceX from Blue Origin and other similar competitors is how it engages with its stakeholders, be they governments, companies, futurist and the ordinary person. If Elon holds true to his spacefaring (and Mars) vision this provides a key value add and opportunity to reach out to and touch the exploration fascinating of humanity.

He is already reaching out with Tesla’s vision. Who knows what other innovations may yet emerge? Whatever does, this work level is about embedding and preparing, influencing, shaping and taking “the many” on the journey of what is already happening. The philanthropy issues might be closely involved with the requisite education to build support and momentum.

A more mundane description of this work level is that of embedding new businesses and models into mass markets globally. Luc Hoebeke, a Belgian engineer and practitioner of these complexity based models, contends that those with the capability to transition beyond Work Level VII enter a space where work as we know it does not exist, but that the nature of its activities becomes spiritual, the home of Jacque’s Extraordinary and Legendary Mortals. One may well argue that The Elders is such a collegial grouping in theory at least. I know from my analysis that Nelson Mandela, Jimmy Carter and Muhammad Yunus all possess the cognitive power to move into this Spiritual Domain. So does Richard Branson.

People who are comfortable with this level of capability are able to see what is or might be needed on a global scale as their “focus” encapsulates the diverse contexts within which their business are operating. It is no coincidence that these two Work Levels, belong to what has been so aptly named the “Values Domain”xiii. Branson after meeting Mandela had been so captivated by his wisdom, inspirational leadership and natural entrepreneurial ability that he formed a deep relationship with the man and the country. Virgin Active was born amongst a host of other initiatives.

An opportunity arose for Branson to broker a meeting of President Mandela and the Dalai Lama. The meeting of these two great minds resulted in the development of an idea to bring together a group of wise global elders to use their wisdom and capability to address pressing global issues. The Elders could do things the UN could notxii.

Branson also realised the need to pull all the social responsibility work that the Virgin Group (200 affiliated companies, employing some 50,000 people in 29 countries) was doing under one umbrella. He created Virgin Unite as his non-profit Foundation. It objectives were to tackle social and environmental problems through an entrepreneurial approach; by creating a new way for business and the social sector to work together. Bill Gates who like Elon, formed an early very clear vision (“a

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11 Richard hopes the body will still exist in a hundred years’ time and says “The Elders are, in essence, a group of immensely influential world figures acting like entrepreneurs who use their moral courage, wisdom and independent leadership to tackle huge intractable problems. The beauty of the elders is that they are at a time in their careers where they have no other agenda but that of humanity”
It is a very small group who are able to move beyond this level of work and they seem to share a consensus that capitalism is the only thing we have that works but it needs to be modified so that it does not neglect those who need help and assistance and only serve a select group. Gates called it “creative capitalism”, Muhammad Yunus calls it “social business”, Branson calls it social responsibility – others call it social entrepreneurs. The bottom line is that it needs to take into account all the people of the planet and its resources. Richard also referred to it as “Gaia Capitalism” a term he felt has a special kind of ring to it.

Elon says we need Plan B.

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Figure 2: Growth Curve of Elon Musk
EPILOGUE

Another Transition at 60…. soaring into the Spiritual Domain.

Elon has used his capability to blaze an entrepreneurial trail as a 21st century industrialist. As he said “I just like computers, never expected to have a company – rather than say I want to create a company, be an entrepreneur or money, rather what is a useful thing to do, then get people to help you… money is the result, if you create something you love, and that you think others will love, then it’s easier to sacrifice the time. But my life took a different direction – saw people not solving the space game or the electric car game. Thought I would lose my money but worth the try”

In 2030/31 or thereabout Elon will being his next transition. This is the top end of the Growth Modes and work as we know does not exist there. Let’s watch space and this space...

I hope this Working Journey Analysis has offered a different perspective on his Journey to date

Andrew Olivier
October 2015.
ANNEXURE
This short annexure is an aide to the main narrative.

Current Actual Capability
Being effective at work means we need to have a number of factors aligned. The requisite view of being effective in a work level is governed by the following equation:

\[ \text{CAC} = f \cdot \text{CP} + V + \text{Wi}(\text{EQ}) + \frac{K/S}{E} \cdot (-T) = \text{CAC} \]

A person’s **Current Actual Capability** (CAC) (the level of work where we actually operate successfully) is a function of **Cognitive Power** (CP) of the individual. It is defined as “the potential strength of cognitive processes in a person and is therefore the maximum level of task complexity that someone can handle at any given point in his or her development” (derived from different methods, one being this historical analysis which is less accurate), **Values** (V) - the work for which we have a passion, **Wisdom** (Wi - also known as EQ), **Knowledge, Skills and Experience** (K/S/E) and **Temperament** (-T) - this is personality and in a requisite led enterprise should not be an issue, unless psychological problems exist with the individual, hence -T. T is governed by Requisite Structure (levels of work and Requisite Leadership – what a managerial leader must know, do and be). There is a whole body of work on Requisite Leadership that I have not dealt with in this report.  

Temperament (T) is important in the Journey of high Growth Mode individuals. When you have oodles of T, a really high Growth Mode (CP) and a purpose, (the V); you the ingredients to make “something” happen, good or bad, progressive or not. With Branson, these factors all come together. His public T is about fun and adventure and not only does he value it, his personality thrives on it and turns him into a showman. This natural flair and a sense of adventure have built up his personal currency, imprinting his and his company logo and brand on the British public. Virgin is in a way, his platform to perform on. His private T, which we don’t hear much about, may be very different.

Elon’s T is one tenacity, determination and a steelly resolve to achieve his vision. His T comes across as being extremely focussed, on understanding, solutions and outcomes. He is reported as being blunt, highly demanding and seemingly unconcerned about the well-being of other individuals in the pursuit of his vision.

A colleague, Atilio Penna, has done studies on the different skills and competencies needed by entrepreneurs as their business moves form one level to another. The acquisition of relevant “meta-skills” is a vital part in supporting our ability to actualise as we cognitively grow, but without the **Cognitive Power**, skills and knowledge cannot be appropriately applied.

Thus while skills and knowledge are critical, the actual constraints to which any individual entrepreneur can grow their enterprise seems based on the highest level of work in which an individual is comfortable to operate. This ceiling is determined by the cognitive capability (CP) of the entrepreneur or CEO. The maximum level of entrepreneurial growth is determined by his or her highest level of processing power. Adizes refers to this as “The Founders Trap” in his corporate life cycles.

For Elon, his CP gives him the capability to keep on growing his business and thus the potential to achieve his long term visions. When these factors all come together you have focused effective energy and that determines current actual capability to get “stuff done effectively”.

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12 Requisite Leadership has been tested and evolved over more then half a century. It is a scientific approach to management that is about clear roles, accountabilities, using talent pools effectively and focuses on performance and how to lead effectively. Used for decades by US Army, BlueScope Steel, Boeing, Rio Tinto etc. Also emerges organically, such as in Findhorn Ecovillage.

Our cognitive growth is both measurable and predictive. According to our research people grow cognitively at different rates and that some people may find satisfaction with one type of work for very long periods of life while other may be on a more rapid track and want different and greater work challenges at fairly regular and predictable intervals.

Brief Overview of the Work Complexity Model - Context for Our Work Journey

There are three main domains of work as illustrated in Figure 2. Within the three Domains are Seven Work Levels, each with a Time Span for measuring outcomes and a Unique Value Add. Work is defined as the exercise of individual judgment in making decisions and acting on them within limits in order to achieve a productive purpose within a given time frame. The Work Complexity model is comprised of seven levels, which are fractals with even and odd work recursive but at higher levels of complexity.

- Each work level has a unique value add that is not the same as any other level.
- Each work level has a time span, the amount of time before the level can judge the outcome of the most complex task/decisions can be ascertained by the level above (Jaques, 1989). At Work level VII, it may be up to fifty years before the real impact of the decisions can be felt.
- Each work level is based on increasing complexity. We define work as the use of discretion and judgement (backed by knowledge, skills and wisdom and values) in making decisions in achieve a productive goal within prescribed limits.

Figure 3: Domains and Work Levels
Table 1 Levels of Work Complexity: Work Levels I - VI

<table>
<thead>
<tr>
<th>Work Level</th>
<th>Essential Tasks / Unique Value Add of each Work Level</th>
<th>Time Span (maximum elapsed time before outcome of most complex task apparent to level above)</th>
<th>Example of Roles; Org Structures</th>
<th>Human Cognitive Capability Processes (CP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I (Work theme Quality)</td>
<td>Accomplish Direct Tasks / Hands on Skills Quality in what is done</td>
<td>3 Months</td>
<td>From unskilled to fully skilled. E.g. Electrician, Call Centre consultant, Retail Assistant, CAD engineer, Shopkeeper, troops.</td>
<td>Declarative Processing - (Touch and feel) – direct outcomes, judgement in how best.</td>
</tr>
</tbody>
</table>
| Level II (Work theme Service) | Supervise Direct Work or Do Specialist Work  
Ensure pride, purpose and commitment to quality. | 1 Years | Captain (company);  
Two tier business.  
Doctor, lawyer, scientist, accountant,  
Front Line Manager with VARI; | Cumulative Processing  
- (“accumulating”) decisions based on history, precedent,  
tradition, trends, variances – specialist knowledge. |
| Level III (Work Theme Practice) | Direct a program, Blending Components to meet Specified Goals / Objectives.  
Constructing, connecting and fine tuning systems, making most of resources. | 2 Years | WO, Major, Colonel (Battalion)  
Three tier organisational structure. Functional Dept. or company or independent company.  
Senior Manager, senior consultant/specialist | Serial Processing  
- (“connecting”) – Outcomes given, pathway up to individual,  
options to achieving it. Linear process of linking it up efficiently |
| Level IV (Work theme Strategic Development) | Coordinate and Resource Multiple Programs  
Integrating, modelling new futures, new services, products, positioning the organisation | 5 Years | Brigadier-General, US One Star; General Manager, Vice-President. Principal Specialist; Dean of Faculty; Director General | Parallel Processing  
- (“modelling”) – holding in mind different processes and connections between – envisaged outcome. |
| Level V (Work Theme Strategic Intent) | Direct a Unified Work System to its internal and external environments and Set Policy Accountability for sustainability of a unified work system | 10 Years | Major General, US Two Star General / CEO or MD autonomous Business Unit ; complex national or state based organisation with multiple product lines and channels, R&D facility, national brand; Vice Chancellor. | New Order of Info Processing.  
Declarative Processing  
- (“Weaving”) sensed intangibles (e.g. culture and values, markets, industry trends, foreign policy, currency markets) become key parts of judgement making.  
Interconnectedness of events across a broad spectrum creates options.  
Shaping industries may occur at this level by individuals with high potential. |
| Level VI (Corporate Prescience) | Coordinate Multiple Unified Work Systems in the Global Environment Reading international | 20 Years | Lieutenant General, US Three Star General, Group Executive of international company, CEO Multi-national, | 4th Order of Info Processing.  
Cumulative Processing.  
- - (“revealing”) intangibles characterised by thoughts, words and ideas that refer to other |
| **Level VII (Corporate Prescience)** | **Direct Multiple Unified Systems in the Global Environment** | **50 Years** | **General, US Four Star General. CEO International; International Though Leader** | **4th Order of Info Processing.**

*Serial Processing.*

(“previewing”) - It represents the ability to re-interpret the present so as create a new language and values which will encompass many areas of human activity & knowledge. The capability of people in flow with this level of complexity is summarised by the term PRESCIENCE or world-wide SERIAL PROCESSING.

This Level of Work and its associated human capability is about making the future real, about having the capability to provide a “preview” of what is coming at us and having the corporate prescience to invest in that future.

contexts to support / alert Level V strategic business units

thoughts and ideas rather than to things, but can always be connected directly to large-scale particulars and trends or patterns made known. They are made tangible to wide audiences with the idea of informing, warning or identifying a wave of opportunity, often predictive.
References and Footnotes

3. Studies on predictable validity indicates 72 – 93% accuracy on longitudinal studies.
4. It is indeed a loss that Requisite leadership Enterprise’s basic managerial leadership principles are not used globally to assist young high potentials to get the basic tools of the trade in order to lead people and to understand the generic patterns of the life and death of company organisms and how to deal with the problems of each phase. This is the equivalent of Management 101 and is as essential to know as financial, marketing and negotiating skills.
6. Ibid. page 170.
7. Elon Musk - Work ethics, Principles, Attitude, Failure - Pearls of Advice. 30 November 2014. https://www.youtube.com/watch?v=NU7W7q2R0A
9. Ibid. page 211
11. Interview Baidu CEO Robin Li interviews 2015. https://www.youtube.com/watch?v=NG0ZjUfOBUs
15. In Richards’s case the T factor is important – T in our equation for current actual level of effective capability stands for Temperament or personality. Normally if you are employed in a formal hierarchy with managerial leaders the T factor should not be part of what constitutes an effective leader. T can be a problem in fact with the range of personalities you encounter in a workplace that can make life a misery and cost the organisation dearly. You want managerial leaders to be stable and consistent in word and deed. Charismatic personalities or moody brilliance can be useful but what one wants in for business effectiveness is competent and effective managerial leaders with the K/S/E to be good at doing their job.