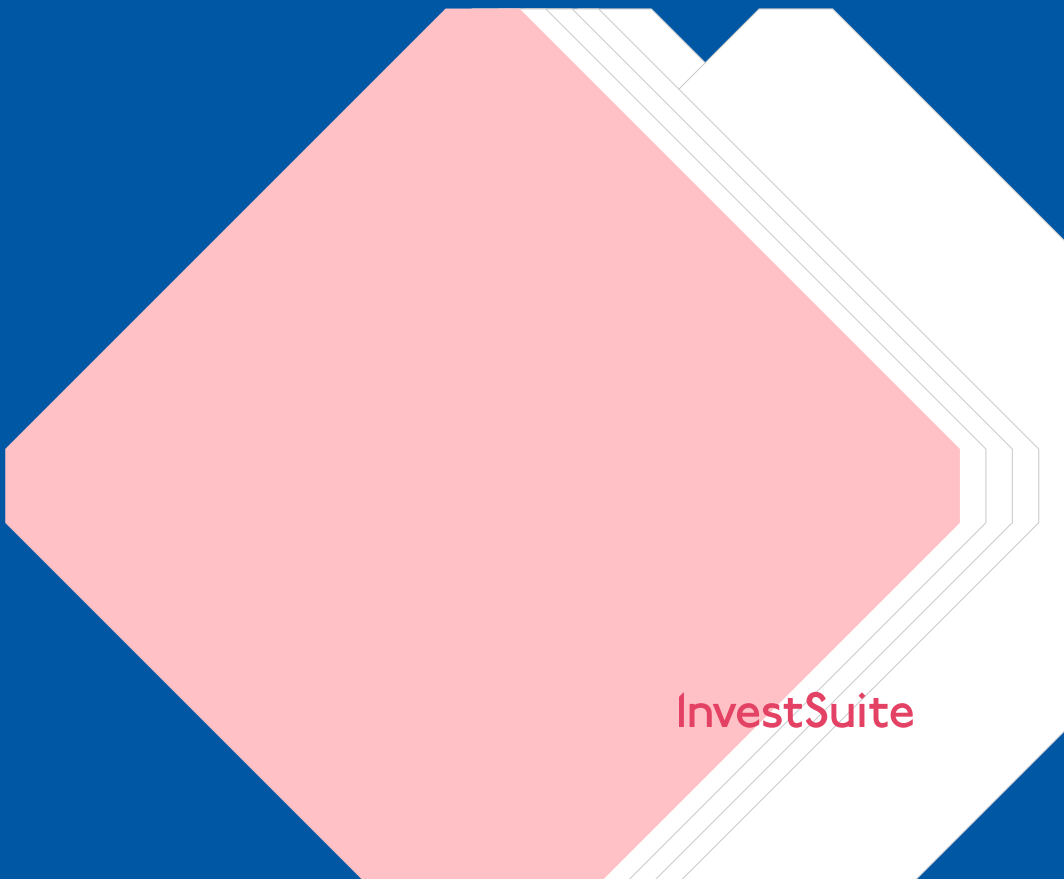
Reflections on Innovation, Creativity and Entrepreneurialism.

PERSPECTIVE 2



InvestSuite

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PERSPECTIVE 2

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1. INTRODUCTION

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‘The important thing is to create. Nothing else matters.’

Pablo Picasso

Ideas don’t come out of thin air. Geniuses don’t take it easy. As early as 1908, the great French polymath Henri Poincaré identified four stages that may lead to new ideas, rather than relying on ideas simply appearing as a sudden illumination.

Many innovation lessons offered by experts seem to centre around ‘processes’, ‘innovation models’ and ‘concepts’. These are all needed and can be very helpful. However, I would like to provide a little counterbalance and focus more on the ‘human side’ of things. After all, processes don’t ‘invent’ or ‘launch new businesses’ – people do. Consider the title of Oxford economist E. F. Schumacher’s work *A Study of Economics as if People Mattered*. In this context, I quote Ken Kocienda, an ex-software engineer and designer at Apple, who describes the product development ingredients at Apple in his book *Inside Apple’s Design Process:* ‘At Apple we applied several principles and concepts but it took *committed people* to breathe life into these concepts and transform them into culture’.

A few years ago, while working at Belgian broker KBC Securities, I was interviewed by students from the Catholic University of Leuven (Belgium) about the company’s ‘innovation approach’. I imagine they were a little disappointed when I answered that we did not have anything close to a documented innovation process. We did, however, have a strong culture of entrepreneurship and innovation, as well as a goal of ‘developing cool,

innovative stuff that clients would love'. Nevertheless, their enquiry did trigger within me a constant cycle of reflection about the topic. What makes an individual or an organisation 'innovative', 'creative' and 'entrepreneurial'?

René Redzepi, a renowned Danish chef, undertook a year-long project about what creativity actually means, considering questions such as: What is innovation? How does it work in real life? Is there a recipe? Can we emulate 'proven' creative thinkers? He wrote his findings down in the form of a diary that he kept throughout that year in an attempt to discover the creative process for his restaurant, Noma.

I must admit that I am not entirely convinced by what many articles in business magazines and books seem to suggest. By and large, their recommendations come across with too much of a 'cookbook recipe' approach, with surprisingly little focus on the human beings involved. Take, for instance, a recent article about innovation in the *MIT Sloan Management Review* (Winter 2020) entitled 'How Vigilant Companies can Gain an Edge in Turbulent Times'. The authors conclude that 'vigilant companies' take four steps. They:

a. strategically scope the environment, often beyond their comfort zones;
b. formulate guiding questions that guide the organisation's scarce resources to the places most likely to spawn opportunities and threats;
c. conduct targeted analysis to better understand the sources and meanings of any weak signals they pick up; and
d. track the most intriguing signals, amplifying and clarifying them sufficiently to act decisively when the fog clears.

While the article is thoughtful and deeply researched, it feels reminiscent of a scene in a science-fiction movie or of people working in a NASA research centre trying to pick up signals from life beyond earth and preparing themselves in case of the event of aliens deciding to attack. Perhaps a creative way of describing disruptive start-ups? Whereas these steps are objectively potentially helpful, some will wonder if this is really how things work in practice. Is this really how innovations are conceived or how an entrepreneurial culture is instilled or revived in a company? From reading through countless corporate biographies and studies and experiencing

real-life examples, a different answer seems to emerge. Whenever we read about or witness 'innovation' or entrepreneurialism, it is seldom about a process, let alone a four-step approach that a particular organisation has followed. Invariably it is about the founders, the leaders, the teams, the mavericks in an organisation. Where are they in this four-step plan?

Innovation is comprised of many components and ingredients, including (innovative) processes, culture or DNA, creativity, resources, prototyping, etc. The aim here is not to present a complete overview, and definitely NOT an 'x-step approach', but rather a collection of the perspectives and reflections of leading thinkers, alongside some food for thought.

We will touch upon what makes individuals creative and innovative, as well as shining some light on what makes corporations innovative and creative.

Expect to learn a little more about:

- the definitions and concepts of innovation and creativity;
- the four stages of creativity;
- the search for the creative process at Noma, one of the world's best restaurants;
- the power of small teams and small units;
- the need for 'change in structure' rather than a 'change in culture';
- the intriguing importance of art, reading and 'curiosity' in general; and
- how things were done in the 'old days'.

2. THE IMPORTANCE OF INNOVATION AND CREATIVITY

Innovation is key to survival. Only 12% of the companies listed in the *Fortune 500* in 1995 still existed in 2018. **Richard N. Foster, a former McKinsey director,** highlights in his theory of creative destruction that the average tenure of S&P 500 companies in the US fell from 61 years in 1958 to 18 years by 2012.

'If large companies do not find ways to foster a culture of entrepreneurship they will risk being trapped in a diminishing-returns business model', says John Hagel, co-chairman of Deloitte's Edge.

In his book *Talent is Overrated,* Geoff Colvin states that 'in the digital age, any product that can be compared digitally will be compared, and any directly comparable product will be commoditized'. As a consequence, Colvin argues – like many others – that innovation and creativity are highly sought-after skills in organisations.

'In a world of forces that push towards commoditization of everything, creating something new and different is the only way to go. Innovation is not only about business models, let alone products, but goes much deeper. 'Companies must innovate along new dimensions.'

Geoff Colvin

In its latest report, 'European Private Banking: An inescapable call for action', **McKinsey** highlights the structural issues that many private banks are facing and that are resulting in high cost/income ratios and decreased profitability. The report states:

> **Overall, these headwinds resulted in a rather challenging year and highlighted the need for fundamental transformation. Tactical measures like selective digitization of the service model or introduction of new investment themes (for example, ESG investing — Environmental, Social, and Governance) may not be enough. Private banks will need to reconfigure their business model to operate in a market with flattening asset growth and ever-decreasing margins.**

McKinsey proposes, amongst other measures, to 'double down on creating digitally enabled exceptional client experience and *consider new service value proposition models* to drive growth'.

Research indicates that large companies who are the first to introduce new products and services to the market experience higher revenue growth (McKinsey Global Institute, October 2019). Cost cutting (often combined with mergers and acquisitions [M&A]) is a valuable way to increase profitability temporarily, but it is difficult to combine an innovation-driven strategy with a cost-cutting strategy in the long term. From a corporate psychology perspective, this boils down to the reality that organisations have to choose priorities and define and develop their desired dominating culture. A cost-cutting culture differs significantly from an innovation-driven culture in terms of 'tone', 'type of people that you attract', 'priority setting', etc.

‘We were always negative about [the stock] AB InBev. The brewery has no sustainable business model. It never knew successes based upon organic growth. The cost reduction efforts are impressive, but you cannot grow through cost savings. In particular not in the beer industry.’

Terry Smith, fund manager, in an interview with De Tijd, 25 March 2020

Stanford economist **Nicholas Bloom** wrote a paper in 2019 revealing an alarming rate of declining research productivity in a broad range of sectors. Although research effort (essentially, how much money is spent on research and how many researchers there are) has risen substantially, research productivity has been decreasing rapidly. The innovation research agency Nesta, for instance, reports that biomedical R&D productivity has steadily fallen over the past 50 years, despite enormous levels of public and private investment in the sector. This has resulted in a rate of return of only 3.2% for Big Pharma.

‘Across a broad range of case studies, we find that ideas – and the exponential growth behind them – are getting harder and harder to find.’

Nesta Research

The points discussed above lead me to agree with Peter Drucker, the legendary management guru, who stated: 'At the heart of every organization lies innovation'.

Doubling down on innovation can (and perhaps should) be done at any moment in the life cycle of a company, not as a last resort. The current article was written during the Coronavirus crisis. While many organisations thus have other more immediate matters to address in the short term, others will be doubling down and attempting to keep the wheels turning. The second type of organisation may well gain a six-to-twelve-month advantage over others who choose a different course. Prada offers an insightful example in its hiring of Belgian celebrity designer Raf Simons to work alongside Miuccia Prada, who has been the company's chief designer for decades. The appointment of a new designer at a fashion house often signals that the company is losing touch with its customer base, which needs to be restored. In Prada's case, however, the situation is different. Despite a 12% rise in ready-to-wear sales in the first half of 2019, the fashion house took the unprecedented step of appointing two star designers to 'reaffirm innovation as a quintessential facet of Prada's identity' (*Financial Times [FT]*, 28 March 2020).

Doubling down on innovation is not a given. Economists Frederik Erixon and Björn Weigel argue in their book The Innovation Illusion (2016) that the 'managerial Western economy', although somehow rejuvenated, shelters excessive bureaucracy and numbs characteristics of a vibrant and innovative economy, eccentricity, ingenuity, and entrepreneurship. They argued that the Western (European) economy is not in a good shape and many factors that determine the scope for innovation have actually weakened over the past decades. They do not claim to be doom thinkers, but believe that for a new era of rapid innovation, capitalism needs intensive care.

3. DIFFERENT LEVELS OF CREATIVITY AND INNOVATION

What is creativity? What is innovation?

Paul Torrence, an American creativity researcher, has described creativity as **'a natural human process that is motivated by a strong need'.** This implies an important element that we will come back to later: everybody can make the **decision** to become (more) creative. It boils down to a decision one willingly has to make as an individual.

Creativity seems to circle around three elements, according to Marcus de Sautoy, a professor of mathematics at the University of Oxford. It consists of the drive to come up with:

1. **something new;**
2. **something that is surprising; and**
3. **something that has value.**

According to **Alain de Botton,** philosopher and founder of the School of Life, there are only two real types of innovation:

a. **incremental; and**
b. **radical.**

The latter, in his opinion, is extremely rare.

Building upon the previous views, **Matthew Syed** adds another twist with respect to the types of innovation in his book *Rebel Ideas:*

a. **incremental innovation; and**
b. **recombinant innovation.**

Recombinant innovation is the result of combining multiple ideas that were previously unrelated, each originating from different fields, and fusing them together. It is often dramatic because it creates bridges between different domains.

The concept of 'combinations' or 'combinatorial and associative thinking' is an interesting one. It appears that people who are credited as being 'creative thinkers' excel in identifying associations.

It is impossible to write about innovation without paying tribute to the late **Clayton Christensen,** an American management thinker and Harvard professor, who wrote the infamous book *The Innovator's Dilemma* (1997). He defines disruptive innovation as follows:

> **'Disruptive innovation describes a process by which a product or service powered by a technology enabler initially takes root in simple applications at the low end of a market – typically by being less expensive and more accessible and then relentlessly moves upmarket, eventually displacing established competitors. Disruptive innovations are not breakthrough innovations or "ambitious upstarts" that dramatically alter how business is done but, rather, consist of products and services that are simple, accessible, and affordable. These products and services often appear modest at their outset but over time have the potential to transform an industry.'**

Clayton, or 'Clay', Christensen, died on 23rd January 2020. Whether you agree with him or not, *The Innovator's Dilemma* was undoubtedly a seminal work for countless people involved in 'business'. Although this is often misunderstood, Christensen did not look down on 'big corporates'. On the contrary, he even wrote that they were 'too good in what they do', but that, by being so diligent in their current business, big corporates focus, almost by default, mainly on what they are currently doing.

In an interview with *MIT Sloan Management Review* (Disruption 2020) before his death, he explained his views on innovation and disruption have changed in the last decades:

> **'The mechanics of disruption are the same as ever, but recent technological and business model innovations present unique opportunities and challenges for both incumbents and entrants. For example, the hotel industry hadn't been disrupted for decades, only to be completely caught off guard by the likes of Airbnb. The internet, combined with near-ubiquitous mobile access, is continually creating very creative entry points for companies to**

target non-consumers with more affordable offerings. So, I don't believe that the threat of displacement is necessarily greater, but certainly the fact that digital platforms can emerge and expand is something that I just hadn't conceived of early in our research and deserves further study. Certainly, there are anomalies waiting to be discovered, and further research into digital-focused firms will yield profound insight into the boundaries of disruptive innovation theory. But I believe that the fundamental questions we've been asking for decades now apply just as much in a digital context as they do in an analog one. Who are your best customers? What is your organization capable or incapable of doing? What "jobs" are you trying to help customers get done in their lives? In what circumstances should you integrate, and in what circumstances should you modularize your firm's and product's architecture? Who are the non- consumers, and what is limiting their access? These strategic questions are universal.'

As the article continues, Christensen describes disruption as a process that takes some time, as new entrants slowly progress from the fringe to the mainstream of an incumbent's business. The most significant change since he first laid out his theory is that digital competitors can now move with unprecedented speed. A second departure from the theory of disruption is concerned with the relationship between traditional, core businesses and innovative new ones. In his original formulation, the core part of the business had fairly predictable (if slowly declining) revenue numbers, customers whose needs could be identified and rewards for replicating the existing model at scale. Innovative new businesses, on the other hand, tend to operate with a high ratio of assumptions relative to knowledge, leading to practices such as discovery-driven planning, test-and-learn approaches and rapid experimentation.

Just like there are different levels of innovation, there are different levels of creativity. **Margaret Bonen** is a cognitive scientist with intriguing views on creativity. Her field of interest and expertise covers philosophy, artificial intelligence (AI), psychology and cognitive science. In the current age, with machine learning and AI increasingly on the forefront and the search for general AI ongoing, her theories offer an insightful perspective on the one possible area where the human race is still holding its ground against 'the machines'. But for how long can this last?

She identifies three types of creativity: (a) exploratory creativity; (b) combinatorial creativity; and (c) transformational creativity. She highlights the latter as being extremely rare. Exploratory creativity is about pushing the edge, but by using what is already known and present – definitely something that machine learning/AI is capable of already. The second type is a notch harder. **Marcus de Sautoy** calls the combinatorial type 'a very powerful tool in the realm of mathematical creativity' in his book *The Creativity Code*. This type of creativity can also be achieved by machine learning/AI. Meanwhile, De Sautoy refers to the third form, transformational creativity, as more mysterious and elusive. Examples include art generated by the likes of Picasso (cubism), as well as Joyce and modernism.

The significant challenge of machine learning reaching this highest level of creativity is echoed by one of Europe's leading neuroscientists, Stanislas Dehaene, in his most entertaining book *How We Learn: The New Science of Education and the Brain*. Even the most advanced existing algorithms, such as Alpha Go Zero, are extremely narrow and cannot be used for other purposes. Although this algorithm represents an amazing achievement, if one changes the hyperparameters (e.g. by enlarging the number of fields), it will run into problems immediately. Dehaene lists six elements that are still lacking in AI:

1. **Learning abstract concepts**
2. **Data-efficient learning**
3. **Social learning**
4. **One-trial learning**
5. **Systematicity and the language of thought**
6. ***Composition.***

Composition concerns the ability to use (compose) previously learned skills, i.e. to recombine those skills to solve new problems. This is beyond current machine learning models. In contrast to even *deep learning* models (largely a type of black box), the human brain renders knowledge explicit so that it can be reused and recombined. This is difficult to reproduce in a machine. This process was mentioned as far back as the 17th century, by the great philosopher **Descartes** in his *Discourse on the Method*. Dehaene describes a special characteristic of human beings (or more specifically our brains): the relentless search for abstract rules. This can be an extraordinarily powerful learning strategy since the most abstract laws are precisely those that apply

to the greatest number of observations. Narrowly focused deep learning approaches cannot do this, which is why there is a global race to develop general AI.

Arthur Miller is an Emeritus Professor of History and Philosophy of Science at University College London and the author of *The Artist in the Machine*. He offers an intriguing viewpoint regarding creativity, echoing some of the previously mentioned thinkers and writers. He terms his insights the **seven hallmarks of creativity:**

1. **The need for introspection**
2. **Know your strengths**
3. **Focus, persevere and don't be afraid to make mistakes**
4. **Collaborate and compete**
5. **Beg, borrow, or steal great ideas**
6. **Thrive on ambiguity**
7. **The need for experience and suffering.**

Most of these are self-explanatory, but the words that seem to jump out are 'beg & steal'. Bjarke Ingels, the wunderkind of Danish architecture, says that creativity requires no mystical explanation: 'everything is already there and the art is discovering it'. Rebel artist Andreas Golder is even more blunt in an interview with Stadil and Tanggaard *(In the Shower with Picasso):* 'when you talk about creativity, it is actually about stealing'.

Scandinavian authors **Christian Stadil and Lene Tanggaard** argue that the three (sic) traditional models of creativity are the following:

- **Thinking as wildly and differently as possible;**
- **Innovation as a sort of societal engine; and**
- **A mystical energy that can lead to innovation if released properly.**

Their point of view is that it is obviously not enough to think wildly and be hugely energetic, and that creativity is not an anonymous societal engine. Rather, it is specific people doing new things. **Rather than thinking outside the box, the authors believe that creativity is about moving on the edges of the box.** This is building upon the notion that very (very) few innovations stand on their own; rather, they are the fruit of many people working on similar things and/or building, using, stealing and copying elements of other previous innovations.

In this short overview of possible definitions of creativity, that presented by Sir John Hegarty cannot be left out. Hegarty is a founding partner of the legendary agency Bartle Bogle Hegarty (BBH), which is one of the world's most renowned advertising agencies. Hegarty himself has been honoured with multiple prizes, including being the first recipient of the Lion of St Mark award at the Cannes Lions International Festival of Creativity. His take on creativity is that there are no rules, hence the title of his book on the subject, *Hegarty on Creativity: There are No Rules*. In his experience, very few people have a clear idea of what creativity is or what it means to be creative:

'Being aware, sensitive, passionate, concerned, committed, and above all inventive just might help you be a better creative person. There are many ways of defining creativity but the one I like best is the 'expression of self'. It is a definition that captures my belief that we are all creative – though naturally some are better at it than others.'

Sir John Hegarty

4. THE FOUR STAGES OF CREATIVE THINKING

Do you often think about ideas, work or even 'inventing' something while walking, running or leisurely strolling around in a city? Thoughts come and go. You may jot down a few notes in a Moleskine notebook or even draw some sketches. Days, weeks, even years may pass by. You read, absorb, talk with people you find inspiring. Gradually you build, sometimes consciously, but often even unconsciously, mental models and ideas. You gather knowledge, insights and some experience. Until finally, at some point in time... there **it** is.

Henri Poincaré gave lectures in the early 20th century about the 'process of innovation'. He identified four stages, described in *The Art of Thought* (1926) by psychologist Graham Wallas along the following lines:

CONSCIOUS THOUGHT

In this phase, one feeds the brain. Reads. Absorbs. Creative thinkers build up their expertise over many years, accumulating a wide range of information and data. They have the capabilities and skills, even the 'talent', of sifting through this material and making sense out of it.

UNCONSCIOUS THOUGHT

Arthur Miller states in his book *The Artist and the Machine* that scientists, mathematicians and entrepreneurs may hit a wall in their conscious thinking phase, but that they retain a deep desire to solve the problem at hand. Thus, they continue the thinking process unconsciously. Some may take a bath, take long walks or go on holiday to let these emerging ideas and thoughts go in all directions.

ILLUMINATION

The 'aha!' moment. Finally! But it does not come out of thin air. The previous phases may have lasted for countless hours, days, weeks, or even years.

VERIFICATION

An important and often underestimated step. The aha! moment needs to be checked and verified, and then put into action.

Another illustration of the myth of sudden 'eureka!' moments without the other stages is nicely described by Ken Kocienda, ex-Apple software engineer and designer, in his book *Creative Selection: Inside Apple's Design Process during the Golden Age of Steve Jobs:*

'The way we built our creative methods was as a by-product of the work as we were doing it. As all of us (at Apple) pitched in to make our products, we developed our approach to create great software. We never waited for brilliant flashes of insight that might solve problems in one swoop, and we had very few actual Eureka! moments.'

5. TRAITS AND CHARACTERISTICS OF HIGHLY INNOVATIVE PEOPLE

Wouldn't it be wonderful if we could all understand and learn what makes people innovative and creative? Learn how the truly great innovators do it, then study and copy their approach, behaviour and even personality?

In her book *Quirky,* Melissa Schilling provides an intriguing insight into the characteristics and behaviours of truly great creative people and renowned innovators like Tesla, Jobs, Marie Curie, etc. Pre-eminent people who have made great contributions to mankind. The author deliberately only chooses a few examples in order to conduct in-depth analysis. While it may be very insightful, is this helpful? Are we going to wake up the next day and really try to become like Jobs? For instance, one common characteristic identified between Jobs and Dean Kamen (the inventor of the Segway alongside many other innovative creations) is that both could be considered 'quirky'. Schilling highlights that, among other shared characteristics, they both: (a) dropped out of college; (b) lacked extensive training in the field to which they would contribute; (c) wore the same clothes every day; (d) showed a remarkable sense of separateness; and (e) had very peculiar houses. This information is likely not very helpful for someone who is trying to become 'creative'. More insightful – and backed up by numerous other books and articles – are the following elements:

1. **A deep wish to achieve something, preferably the impossible; to change something – a higher purpose;**
2. **A deep passion for what they do;**
3. **Extreme working hours (more is more, not less); and**
4. **Extreme curiousness and openness.**

Let's compare this recent work with some earlier findings. In his 1996 book *Creativity, Flow and the Psychology of Discovery and Invention,* Czech–American professor **Mihaly Csikszentmihaly** aims to describe the characteristics of 'creative people'. He interviewed almost 100 people, who share (among other traits):

1. **A great degree of energy and being prepared to work very hard;**
2. **Great cognitive capabilities;**
3. **Divergent thinking skills;**
4. **Excellent imaginations and senses for fantasy; and**
5. **The ability to be both passionate and objective.**

Some people argue that 'passion' is overrated and may label it as being a 'cliché' in the context of innovation and entrepreneurialism. Personally, I believe it is underrated. Reading countless biographies and research, as well as my own experience, have convinced me of the vital nature of drive and passion.

Schilling poses some interesting questions for reflection:

- **Do these (highly innovative and creative) people have gifts hardwired into their biological system that 'mere mortals' (most of us) could not hope to imitate?**
- **Or are they primarily empowered by their context (family, education, etc.)?**
- **Are they significantly more intelligent?**
- **Are they luckier?**
- **Are they crazier?**

Her research seems to indicate that the answers range from 'probably' to 'yes'. Lately, a great deal of emerging research has been using new techniques for imaging brain activity. Although it is too early for definitive conclusions, Schilling identifies some main threads linked to 'genius':

a. **Primary process thinking and remote association;**
b. **Working memory and executive control;**
c. **The personality trait 'openness to experience'; and**
d. **Emerging evidence on neurotransmitters and their effects on traits such as latent inhibition and psychopathologies often associated with creative genius.**

Highly creative people excel at making associations. 'Primary process thinking' is the more scientific term to describe this. This concept existed even in early psychological research, and it can facilitate combining ideas and concepts that are not typically related. This links to the second level of creativity described by Margaret Boonen –combinatorial creativity. There is another interesting twist to this concept. According to Sigmund Freud, this type of thinking often occurs just before sleep, while dozing or during daydreams. Hence, perhaps, the (often daily) habit of many great thinkers and geniuses like Kant, Einstein and Nietzsche of 'going for a walk'.

Tesla not only showed evidence of 'self-efficacy' and 'separateness', but also a unique combination of:

a. **Exceptional intellectual capability;**
b. **Extraordinary working memory; and**
c. **Signs of neurotransmitter irregularities that gave rise to**
    a. **Symptoms of mania**
    b. **Obsessive-compulsive disorder**
    c. **Oversensitive to sensory stimuli.**

Another striking fact is that Tesla worked extreme hours and slept for barely two hours per night, if he slept at all. Of course, if we wish to become creative and innovative, we should not simply stop sleeping! However, there seem to be elements of those people at 'genius' level, some of them biological, which cannot be imitated. Luckily, that is not necessary. Another characteristic that Tesla shared with geniuses like Isaac Newton and Freud (after his forties) – but that we also would not necessarily recommend following if one wishes to become an innovator – was that 'innovators should not marry'. Tesla has been quoted as having said that 'an inventor should not marry because he has so intense a nature with so much in it of wild quality that in giving himself to a woman he loves, that he would give everything and as such take everything away from his chosen field'.

However, Tesla is also a striking reminder that being a ground-breaking inventor, being a genius, does not equate to being an entrepreneur. Schilling rightly refers to the fact that 'many more strategic and materialistic people' tried to lay claim on Tesla's discoveries and take credit for them. Thus, he never received the funding to become the sensation that Elon Musk has become in recent times. Later in this discussion, we will consider what else this takes.

What about pure intellectual brainpower? A person can of course be very creative without being a genius, and vice versa. Nevertheless, Schilling argues that there is a connection; the two are not entirely independent.

Exceptional intelligence helps us to absorb much more information, make many more associations and leverage previous experiences and innovations.

Schillinger concludes that the convergence of traits like intelligence, self-efficacy, pursuing a higher purpose, resilience, motives and unconventionality increases the chance of breakthrough innovations.

In sports, it is well known that it is not possibly to drastically increase your lung capacity or the split between fast and slow muscles (as such, the famous 10,000-hours rule may fail miserably). Nature gave you what it gave you. However, you can influence it, and you can definitely achieve remarkable things by training and working hard. The same applies here. While one can easily – albeit through many hours of training – impress people by doing complex calculations in your head, you cannot drastically change your biological, inherent IQ. People like Jobs, Musk, Einstein and Tesla exhibit exceptionally high IQs, catapulting them into the upper percentiles. In addition, most of us do not choose a life completely devoted to work. However, those who wish to follow a more creative path and nurture the 'innovator within us' can try to make up for this through:

- **Passion and drive;**
- **Challenging norms and the status quo;**
- **Daring to do something new;**
- **Being extremely curious;**
- **Opening up;**
- **Ensuring personal reflection time;**
- **Identifying and pursuing one's higher purpose;**
- **Leveraging the IQ one has been given by nature;**
- **Positioning oneself in an environment where creativity and innovation is nurtured; and**
- **Buying and starting to use a notebook (yes, really!).**

I deliberately use the word 'try' here because, for instance, 'opening up' is obviously linked to 'openness to experience', one of the 'big five' personality traits (neuroticism – agreeableness – extraversion – conscientiousness – openness to experience). It concerns a person's active imagination, their sense of aesthetics (appreciation of art, craftsmanship and literature), preference for variety, and their intellectual curiosity.

Why not ask the following questions to help find your next head of innovation?

a. **How often do you go to museums?**
b. **Do you enjoy reading? What do you read?**
c. **When did you last read a poem?**
d. **Do you often wonder about people and things happening around you? Does it give you ideas?**
e. **What do you like to talk about in general?**
f. **What types of people do you seek out?**

Let's finish this section with a quote from psychologist Robert Sternberg from the book *In the Shower with Picasso:* 'in order to be more creative, you have to *decide* first to become more creative'.

6. SEVEN ELEMENTS UNDERPINNING THE CREATIVE PROCESS AT APPLE

The previous sections have discussed individuals. Let's switch to companies.

The many biographies about Steve Jobs provide – with variable levels of success – an interesting insight into the work and life of the great man himself. The poorer ones imply that a replication of Jobs' leadership skills and approach would lead to some kind of imaginary success. The better ones show an image of an amazing person who also has significant flaws, like most of us. However, very few books actually give attention to the key ingredients of Apple's success, instead focusing exclusively on Steve Jobs, Tim Cook and John Ive.

Ken Kocienda's book offers a glimpse of the trenches and specifies seven 'elements' that offer guidance regarding what can differentiate a creative company and make it stand out compared to its peers.

The author is right in cautioning against a 'seven-step process': he does list 'seven elements', but presents them as guidelines for everyday behaviour:

1. **Inspiration**
2. **Collaboration**
3. **Craft**
4. **Diligence**
5. **Decisiveness**
6. **Taste**
7. **Empathy**

7. THE CREATIVE PROCESS AND PAIN AT NOMA

One thread throughout this discussion is the encouragement to look 'elsewhere' for inspiration. Following my own advice, I was intrigued by a new book by René Redzepi, the renowned chef of the world class restaurant Noma. In his latest book, - *Noma, a work in progress, 2018* -, he describes how he came close to burning out and took a month off. When he returned, he decided to write a diary to try to explore his own creative process at Noma.

He is clearly 'pained' by the thought of this time. His diary focuses on documenting things that take place on a day-to-day basis, the things he and his team do, discover, get frustrated about, etc. We can recall the four stages proposed by Poincaré and compare them to the very real experience that Redzepi noted in his diary entry for 28th February. Note that, at the time, he and his team were seeking something new, something creative, day after day, week after week. They were experimenting heavily with a concept they labelled 'The Dried Kitchen':

> **'As part of the investigation into a dried arsenal, we have also been working with porridges made from whole kernels and grains. This is when it happened: when the dish came together. The right thought *suddenly* occurred. An epiphany as if from nowhere, the answer and the solution to the problem. Is it intuition or just good luck? When it works, like it did today, it is as if there is a second brain somewhere in your gut, a hard-drive talking to your subconscious, feeding it when the moment is right. Imagine if we could cook this moment up and drink it like a magic potion. Like Asterix and Obelix.'**
>
> *René Redzepi, A Work in Progress: A Journal, 28th February entry.*

At the end of a twelve-month period Redzepi reflects back. During that year they managed to finish 120 new recipes and rejected hundreds more. Noma also experienced a very difficult financial episode. But they found 'product–market fit' once again. Food that people deeply enjoyed. Food that was born out of a continuous search for new things, to be creative, to prepare food that is authentic in the sense that it connects to nature and ingredients which can be sourced in the North, but which is also open to influences from the South, like spices.

On re-reading the above lines, two thoughts crossed my mind:

1. How very much in tune René Redzepi's experience is with the four stages Poincaré describes; and
2. How much this sounds like a start-up founder describing the problem–solution issue and the pain and joy they experience in finding and solving the problem.

After a year, Redzepi reflects back on the 'creativity discovery' exercise of keeping a diary and trying to document what really went on in practice and in his mind during his quest for innovative cooking and discovering the creative process behind it. I should note that, although I purchase a lot of books from Amazon, their recommendation algorithm failed to discover this gem. I actually found it during a visit to the Design Museum in Copenhagen – a fitting place for such a book. What did he conclude at the end of this 12-month process?

'Was there a red line? Where does creativity come from and how can we get more of it? Is it given by birth? Does it magically appear from the clouds? Reflecting under the Thai sun during a well-deserved holiday, Redzepi tries to describe the secret of [their] creativity. Reading his diary, it becomes clear to me that there are many elements to it. Starting with an extreme passion for authentic cooking and finding innovative ways to please their guests and themselves. To reflect upon what works and what does not. Taking time off to find again the drive and energy. Becoming better during the process in many smaller and bigger things. Redzepi highlights for instance they became better in trusting their impulses and handling better failures. About much-improved teamwork he wrote: "The cooks no longer act as little soldiers, uncritically ready to

obey any command. This has made everybody stronger and more confident. High-five claps echo during the building during the morning meetings"*.'*

Rene Redzepi

What is the 'red line'? Redzepi himself mentions the following *(A Work in Progress: A Journal,* 28th February entry).

1. **The very long hours. 'We worked our asses off.' As I stated in the opening lines of this perspective: 'geniuses don't take it easy'.**
2. **'We had "divine moments". Sometimes the gods were with us.'**
3. **Turning ideas into experiments and action. 'After all, what are great ideas without anybody to nurture, twist, turn and perfect them.' This recalls Poincaré's fourth stage.**
4. **The weather effect! Indeed, this is an unexpected point. 'The weather effect on our creativity is profound and hard to describe. During spring we are like young foals, running around like crazy. Our thoughts flow freely and the seeds of our best ideas are planted. We unleash our intuition. During summer we nurture these ideas. Autumn offer some of our best moments. During the winter, things percolate and come to full fruition.'**
5. **His final reflection is on a greatly encouraging point: playfulness.**

My own reading of Redzepi's diaries definitely suggests another element that is so obviously present that I am a bit surprised he doesn't list it himself: testing and trying, again and again and again. Day in, day out; spontaneously and planned. Perhaps something which is a smoother and more natural approach for his kind of top-notch cooking, but clearly a relevant point for businesses to learn from. Try! Test! Make prototypes, give them to customers.

8. ART AND SCIENCE

Another interesting aspect of this discussion is the relationship between art and science, and how mastering both, or at least having an open mind to both, can lead to great(er) results. In her book *Art Thinking,* writer and artist **Amy Whitaker** describes how we can all learn from the way artists think: 'if you are making a work of art in any field, you are not going from point A to point B. You are inventing point B'. She suggests combining the mindset of art and the tools of business to protect space for open-ended exploration and to manage risk on your way to success. Her work has drawn praise from of the greatest business writers of current times, **Walter Isaacson,** author of *The Innovators, Leonardo Da Vinci and Steve Jobs,* amongst other works: 'In an age of engineering, it also helps to think like an artist... Amy Whitaker explores how to apply art thinking to our businesses and our lives'.

> **'The reason that Apple is able to create products like the iPad is because we always tried to be at the intersection of technology and liberal arts, to be able to get the best of both, to make extremely advanced products from a technology point of view, but also to have them intuitive, easy to use, fun to use, so that really fit the users. The users don't have to come to them, they come to the user.'**
>
> *Steve Jobs, quoted by Ken Kocienda in Inside Apple's Design Process During the Golden Age of Steve Jobs.*

John Maeda, design partner at legendary Silicon Valley Venture Capitalist Kleiner Perkins, describes Whitaker's book as a great way to empower business leaders with the agility and openness of an artist's thinking process.

This concept of finding inspiration for creativity and innovation in art and design, and the importance of a balance between the right and left brain, is interestingly also supported by people like **Scott Harley,** a leading venture capitalist. He has even written a book about it; *The Fuzzy and the Techie.*

Continuing on this 'path of art and innovation', I was struck by the observation of Walter Isaacson that the true creativity of the digital era has originated with those who managed to combine art and science. According to Isaacson, these influential men and women believe that 'beauty matters'.

Only work with good people. That is the straightforward advice from Alan Moore, who has written a *beautiful* little book, *Do/Design – Why Beauty is key to everything.* He challenges us with some simple questions: do I want a beautiful meal or a dreary one? To live a beautiful life or an average one?

'We all learn the very hard way, but trust your instinct. Do not work with people who don't want beautiful, who want to cut corners to increase profitability. Who, more dangerously, bring neither elegance nor grace to their work or work environment, but the opposite.'

Alan Moore

The world's first programmer, Ada Lovelace, was the daughter of the poet Lord Byron. She inherited the vivid and poetic soul of her father, while her mother, who had a passion for mathematics and was called the Princess of Parallelograms by her husband, forced her towards the 'hard sciences' to balance her thoughts. The result was Ada's attraction to a 'poetic science', coupling her fantasies with the charm of numbers. She appreciated both art and science. While her famous father defended the 'luddites' who destroyed machines and opposed industrial progress, his daughter was fascinated by Charles Babbage and his wonderful machines like the difference engine and the analytical engine.

Looking further back, undoubtedly the person who most personified this 'merger of right and left brain' creativity was Leonardo Da Vinci.

'Beauty without vanity
Strength without insolence
Courage without ferocity.'

John Hobhouse

A few paragraphs ago, I raised the topic of 'combinatorial thinking'. Strikingly, Ada Lovelace wrote an essay on that exact topic in the 19th century – 'The Talent of Combining', about Babbage's machines. Like many inventors, he 'took' ideas and concepts from other inventors and entrepreneurs from many different fields.

9. THE FORMULATION OF THE PROBLEM

'It is my duty to make something that solves an important problem. It is all about the problem', stated MIT professor Kripa Varanasi in an interview in early 2020 with John Thornhill, the *FT's* innovation editor. Varanasi is not only a professor, but also a serial entrepreneur. One of his latest ventures is LiquiGlide, which promises to end the days of slapping the bottom of a ketchup bottle to extract the last of the tomato ketchup still inside.

During his decades-long study of geniuses, Miller identified two 'marks of genius':

1. **The essence of creativity: finding the problem; and**
2. **Spotting connections.**

Picasso's 'problem', for instance, was to reduce nature to geometrical forms. Steve Reich wanted to produce new sounds with the minimal use of musical instruments, while Erik Satie wanted to liberate French music from the Germanic compositional style, writes Miller.

'The formulation of a problem is often more essential than its solution. The latter may be a matter of mathematical skill.'

Albert Einstein

In the start-up world, finding 'product–market fit' is the holy grail. It is the moment when customers are prepared to use and, even better, to pay for your solution. Arguably, customers will only engage in doing so if your product or solution addresses a 'problem', or a 'pain point' they are facing. Identifying and formulating this problem is key. What use is there for a product or solution that does not address an unmet need or problem? Design thinking – a concept unknown to most executives even five years ago – centres around problem identification and finding solutions.

10. MYTHS

Great innovations are often said to be created by one genius working in his laboratory or garage. The 'garage' is the ultimate symbol of Silicon Valley's innovators. But is that warranted? Of course not. Innovations are seldom the creation of one brilliant individual, even if the popular media loves to assign greatness to a single individual or 'star CEO'. This is not to imply there are no stars or geniuses. However, most innovations in the digital era are the result of cooperation between smart people, often crossing disciplinary boundaries, taking ideas from somewhere, 're-combining' them, etc. The importance of teamwork when it comes to innovations is one of the core themes of Walter Isaacson's seminal work *The Innovators*. He rightly points out that, when you search for 'the man who invented' on Amazon, an enormous amount of results are returned. Interestingly, the number of results he quotes in his book for 2014 is 1,860. By the end of 2019, that number had more than doubled. He also notes that there is a scarcity of books about the importance of teamwork and 'joint creativity' related to innovations.

'You did not invent Twitter', said Evan Williams, serial entrepreneur and founder of Blogger, when Jack Dorsey tried to lay claim to many bragging rights. 'I did not invent Twitter either; nor did Biz Stone. People don't invent things on the internet. They just apply and combine ideas that already exist.'

The greatest innovators in a wide range of fields all have at least one characteristic in common, argues Colvin: they spend many years in intensive preparation before making any kind of creative breakthrough. Creative achievement never comes suddenly. This is very much in tune with **Marcus de Sautoy,** who discuses in his book the *Creativity Code* how 'we have a bad habit for romanticizing creative genius'. He further refers to **Brian Eno,** who coined the term 'scenius' instead of genius.

People, investors and Silicon Valley all like stories. Particularly legendary stories about how start-ups are founded because of an epiphany by the founder. It makes sense, it appeals, and it is great marketing material. By now, everyone has heard or read about how Airbnb was founded: the founders could not afford their San Francisco place, and the rest is history.

Steve Jobs did not invent the iPhone while taking a shower. Actually, he was not involved at in the initial idea generation phase or, perhaps surprisingly, even when the idea evolved into the very first prototypes. However, he played a crucial role in later stages, vetting and adjusting everything in his famous demo sessions. And perhaps more importantly, he created the 'context and culture' to make it possible to develop products like the iPhone and the iPod.

The era of gurus seems to be ending, at least for the moment. Legendary investment gurus like Bill Gross, the founder of Pacific Investment Management Co. (Pimco) (one of the world's largest fund managers), and Neil Woodford in the UK, have lost most if not all of their glance in recent years. Even Warren Buffet seems to have lost his magic touch. Algorithms and teams of scientists have taken over. In the fashion world, there are still star designers, but their approach is becoming much more collaborative. Christian Dior always worked with a large ensemble of experts in every part of the value chain, and people like Belgian designer Raf Simons are known for shunning the limelight. Dior and Simons work with others like Belgian stylist Olivier Rizzo and French DJ Michel Gaubert on fashion show music. As Gaubert stated in an interview with the *FT* (28th March 2020): "Nowadays you cannot just be a "cavalier seule"'.

Ideas seldom come out of thin air. Innovations are very seldom standalone events. Take the iPhone: even the name existed before Apple came up with it, and virtually every component, including the touch screen, was conceived elsewhere. **Marc Randolph,** co-founder and first CEO of Netflix, talks in his book *That Will Never Happen* about how Netflix was reportedly created as a result of Reed Hastings complaining about how he had run up a $40 late fee on a copy of Apollo 13 from Blockbuster. What if there were no late fees? And the idea of Netflix was born. Beautiful. But that is not the real story. The idea of Netflix had nothing to do with late fees – 'In fact, in the beginning we even charged them', says Randolph. But, more importantly, 'the idea for Netflix did not appear in a moment of divine inspiration, it did not come at all to us in a flash, perfect and useful and obviously right'.

Randolph goes on to observe that epiphanies are rare: 'The truth is that for every good idea there are a thousand bad ones'. The simple truth behind Netflix is that Marc Randolph wanted two things: (a) to start a company; and (b) to sell something over the internet. He had 'a zillion' other ideas before the

now-famous video-streaming juggernaut. One that he believed in very much (Reed Hastings somewhat less so) was… selling personalised shampoo online! That kind of surprising idea turned eventually into Netflix.

Popular 'innovation initiatives' in companies include idea boxes, design sprints, breakouts, 'out-of-the-box' sessions, etc. While all of these have their value in terms of team building, creating a positive and energising spirit and contributing to (incremental) improvements, it is unlikely that more transformative ideas or innovations are conceived in this way. In their very informative and eye-opening book *The Moment of Clarity,* **Christian Madsbjerg and Mikkel Rasmussen** argue that 'thinking-out-of-the-box' sessions and default thinking (based upon confirmation biases and linear thinking) are really two sides of the same coin. Both have serious flaws. These types of session or initiative are based on the thinking that ideas can come to anyone at any time. The authors point out that this type of thinking values content generation over content quality. They continue: "The coin atomizes the complexity of human behavior into discrete parts, neglecting the importance of holism and context. It is the coin that people continue to get wrong'.

11. COMPONENTS AND ELEMENTS OF AN ENTREPRENEURIAL AND INNOVATION-DRIVEN ORGANISATION

Few people need convincing that, in any organisation, innovation, creativity and entrepreneurialism are key. However, this perspective is **not a case against management and structure.** Let's take the example of Google. Most of us consider Google to be a shining example of an innovative and entrepreneurially driven company. When the firm was only a few years old, it eliminated 'management'. The founders – inspired by their academic experiences at Stanford – thought that engineers just wanted to code and collaborate without a need for being managed. At some point in time, the late, legendary 'coach' Bill Campbell started advising Google's leaders. He quickly became involved in a discussion with Larry Page about the need for management, as described in *Trillion Dollar Coach* by Eric Schmidt and Jonathan Rosenberg. Campbell challenged Page to ask the engineers themselves about it, and it turned out that they preferred being managed. They wanted managers from whom they could learn, and who were there to make decisions. The authors also quote a counterintuitive study showing that strong middle management accounts for 22% of variance in revenue in the video game industry, while a game's creative design accounts for only 7%. Campbell advised the best and brightest of Silicon Valley and beyond. He argued that good management practices are as important as R&D and IT investment and the skill levels of individual employees. An intriguing quote from him in the book is as follows: 'Steve (Jobs) couldn't be a good leader until he became a great manager. He was not a great leader during his first tenure at Apple. But when he came back he was detailed in everything. How he ran sales, finance, operations'.

According to **Charlene Li,** founder and senior fellow at Altimeter (a Prophet company), and author of the excellent book *The Disruption Mindset,* many organisations are approaching digital transformation and disruption backwards. They often hope that new innovations will disrupt the market and drive growth in customers and revenues. However, according to Li, 'in reality,

disruption doesn't create growth; growth creates disruption'. Based on years of research, including interviews with some of the most prominent global organisations, she believes that many innovation efforts fail because we use current customers as the basis for new ideas, as opposed to considering the customers of the future. Li states that 'disruptive transformation is so difficult because it upsets the status quo and shifts power relationships'.

Li also believes that many organisations do not fully understand what disruptive transformation is (or isn't). For instance:

- **Disruptive transformation is inspired by 'future customers' as opposed to the customers you have today;**
- **Disruptive transformation requires leaders with an 'openness-to-change' mindset that empowers others;**
- **Disruptive transformation needs a movement away from the comfort of the status quo;**
- **Disruptive transformation is not the same as innovation. As opposed to being an orderly process based on current customers and a desired return on investment, disruptive transformation infers more risk and less well-defined parameters;**
- **Disruptive transformation is often not about new technologies, but about new applications of current technologies;**
- **Disruptive transformation is not always fast and definitely not predictable; and**
- **Disruptive transformation is not just for start-ups. It requires getting out of the way and changing from one state (today) to another (tomorrow) throughout the organisation, including the products, strategy, leadership and culture.**

A GENUINELY INNOVATION-DRIVEN, ENTREPRENEURIAL CEO

MIT Sloan Management Review published an interesting report about innovation and disruption, 'Disruption 2020'. By now, the arc of disruption is well established: we know how disrupters enter the market, and we know how incumbents typically bungle their responses to such seemingly insignificant competition. Numerous books and articles have attempted to solve the dilemma of disruption, including Christensen's own *The Innovator's Solution* (2003, co-authored with Michael Raynor), where the authors suggest that leaders who understand how disruption transpires can inoculate themselves against threats and seize opportunities.

However, despite the existence of so much insight and advice, the dilemma persists: 63% of companies are currently experiencing disruption, and 44% are highly susceptible to it, according to research by Accenture. Furthermore, in a thorough analysis of more than 1,500 publicly listed companies, growth strategy consultancy Innosight found that only 52 of them, about 3% of the sample set, had made material progress in strategically transforming their organisations.

The article's conclusion is that this is a leadership challenge:

'Why are companies still so vulnerable to disruptive threats? Our view is that it isn't about not having the right playbook. The problem is that well-intentioned leaders often delude themselves by downplaying disruptive threats or overestimating the difficulty of response. In simple terms, leaders lie to themselves. This means that dealing with disruption is not just an innovation challenge; it is a leadership challenge.'

It further asserts that leaders tell themselves four lies:

1. **'We are safe' – there is no disruption on the horizon;**
2. **'It is too risky' – it's better to stay on the current course and not to invest;**
3. **'My shareholders won't let me' – paradoxically, McKinsey's research shows that companies taking a long view outperform those that fail to do so; and**
4. **'My people aren't up to the task' - a convenient lie that puts the burden of inaction on others.**

Demis Hassabis is the co-founder and CEO of DeepMind, the Alphabet company best known for its AlphaGo algorithm that beat **Lee Sodol,** the world champion, at Go, one of the most difficult games ever invented. He is firm in his assessment of large companies' radical innovation potential. He relates it quite directly to those at the top level:

> **'If you look at the CEOs of most of the big pharma companies, they are not scientists, they come from finance, or the marketing department. What does that say about the organization? It means that what they are going to do is to try and squeeze more and more out of what has already been invented, cut costs or market better, not really invent new things – which is much more risky. That is not the nature of blue sky thinking… that is not how you do it if you are trying to land the rocket on the moon.'**

'In order for a bank, or any organization, to change, it is absolutely vital that senior management is on board', stated ING's Chief Innovation Officer **Benoit Legrand** in an interview with PLUM (a *FT*-owned professional wealth management magazine). He continues: 'We have innovation boot camps and so on, but the reality of life is that unless innovation is a top priority of the CEO, it will not be a priority for the senior leaders and it won't trickle down'. An interesting and very actionable point (for CEOs and senior managers) is the question asked by ING's CEO to its senior team: 'What actions have you undertaken to make ING the best bank in the next five to ten years?'.

Carlos Ghosn, the legendary CEO of Nissan, who is now experiencing his own fall from grace, will (even without his legal issues) not be remembered as an innovator. His nickname was Carlos Le Cost-Killer. While he realised

one of the most remarkable business turnarounds in history, issues had been piling up since long before his arrest. Apart from tensions with the French government and an increasing number of issues with dealers, the *FT* ('Spectrum', 9th November 2019) reported on the absence of truly inspiring new cars in Nissan's pipeline. Ghosn was obsessed by 'scale' and creating an 'industrial behemoth'. 'He never said it, but he wanted to be the biggest in the world', said a former aid in an interview with the *FT*. Few people associate Nissan–Renault with innovation, design and customer centricity; rather, they link it with cost cutting, performance targets, numerical targets, tough work and extremely long working hours. None of these terms are inspiring, although they were crucial in saving Nissan from bankruptcy. But where would a young and innovative designer or engineer dream of working?

Often, the leading tech- and innovation-driven companies have CEOs that either: (a) are tech savvy themselves and set the agenda; or (b) realise its potential and drive a tech and innovation culture in their companies. This is a completely different scenario compared to CEOs or leadership teams that are sceptical or only supportive because it is the politically correct thing to say at a particular moment. Charles Schwab was not a technologist, but he pushed time after time for the use of advanced technology. This was because he understood its importance from a cost perspective as well as the benefits it may bring to his customers, such online trading at a very low cost at any time of the day.

According to Alain Sylvain, founder and CEO of Sylvain Labs, in *Monocle'*s Entrepreneurial Series:

> **'We are drunk on entrepreneurialism. Entrepreneurs give us the feeling that we too can do anything we set our minds on. They symbolize vision, agility, hustle… Values that society holds dear. They challenge the status quo. They are inspiring. That is the reason so many big businesses try to emulate that start-up feel, either through office design or company culture… But with big companies come red tape. Rapid growth means that responsiveness and agility diminish. Big business becomes safer and the much vaunted qualities of entrepreneurs vanish. But it is possible to restore that mindset and it is crucial to do so.'**

He suggests that companies should: (a) fund unusual partners like start-ups, customers or even competitors; (b) prioritise invention from the inside out via incubators, in-house labs, entrepreneurs in residence and CVCs; (c) and not rely on past successes.

Whether in a CEO or a senior manager, what you want to avoid is an 'imposter boss'. I cannot resist quoting Ken Kocienda here, recalling his time at Apple as a software developer under Steve Jobs:

> **'We didn't have an imbalance between influence and involvement, where a senior leader might try to mimic the commanding role of Steve Jobs without the corresponding level of personal engagement. Detached high level managers making all the key decisions is such a widespread affliction that is has its own internet meme: the Seagull Manager. It describes a top executive who is rarely around, but flies in occasionally and unexpectedly from who knows where, lands on your beach, squawks noisily, flaps its wings all over the place, launches itself back in the air, circles overhead, drops a big poop on everyone, and then flies away, leaving the rest of the team to clean up the mess, figure out what it all meant, and wonder what to do about the inevitable follow up visit.**

I will make no further comment on this point.

CULTURE

Can you change the culture of an organisation?

Undoubtedly, 'culture' is of key importance to any organisation. Renowned Silicon Valley venture capitalist Ben Horowitz devoted his second book to the topic. *Horowitz* explores how leaders of prison gangs, the leader who freed Haiti from slavery and Mongol ruler Djenghis Khan applied (whether consciously or not) very explicit cultures. It is surprising for those who only know of this steppe people as rude invaders to read about their approaches towards innovation and integration of other cultures and tribes they conquered. An interesting read, by the way, for M&A teams in corporate strategy departments and investment banks.

In summary, it appears that it is very hard, if not extremely so, to 'change' a culture. It takes many years at the least, and often fails.

Therefore, it is more accurate to postulate the following:

1. **A company or organisation should be extremely serious and thoughtful about 'creating' a culture from the outset. Ensuring that the *right people are on the bus,* but equally important to *keep the wrong people off the bus;* and**
2. **It is easier and better to try to change the *'structure'* than the *'culture'* (see discussion below regarding Safi Bahcall's explanation of why we should learn about 'structure' and how we can change structure to allow 'loonshots').**

In his book on writing ethnography, *Tales of the Field,* leading ethnographer John Van Maalen defines 'culture' as 'something knowledge members of a given group are thought to more or less share, knowledge of the sort that is said to inform, embed, shape, and account for the routine and not so routine activities of the members'. Importantly, 'a culture is expressed only by the actions and words of its members'.

Another interesting definition is given by Ronald Fry, a professor of organisational behaviour at the Weatherhead School of Management in Cleveland: 'culture is the story we tell about ourselves as **the** story we have chosen for now'.

Let's say that you are young, driven person. You want to create. To build. You want to see the fruits of your work used by customers. You want to get more people answering 'yes' to your proposals than 'no'. Not in five years, but 'now'. You want to be surrounded by like-minded souls, albeit with different skills. As a techie, you want to work on exciting projects and be challenged to keep up with the latest technology.

You may have gone to work for a 'big name' company, an established player, but soon become fed up with your slow progress, the political games and not seeing how the fruits of your work are actually contributing to the bottom line. You're not hearing any encouraging signs from top management. The talk is all about cost cutting and KPIs that you don't really understand. You don't hear a compelling vision. You don't hear about the need to innovate and bring great products to the marketplace.

What could help a company to hire and retain this type of person?

1. **A clear and believable message from the top: is this company about growth or costs**
2. **Allowing mavericks to operate**
3. **Having the courage to set up small teams as start-ups and let them grow**
4. **Allowing failures**
5. **Rewarding the 'good guys'**
6. **An ability to attract top designers and engineers**
7. **Embracing technology**
8. **Using 'product and innovation language' over project language**
9. **Using growth language over cost language**
10. **A culture of experimenting and testing**
11. **A culture of design sprints and design thinking**
12. **Abandoning 'management by procurement'**
13. **Abandoning 'management by cost accounting and cost allocation'**

According to Varun Narang, who is in charge of product technology at Hotstar, 'it boils down to hiring smart people who want to work on difficult, interesting problems that affect millions of people and be stimulated every day. They want to work in bullshit-free environments'.

CULTURE OR *STRUCTURE:* ABOUT MOLECULES, PHASE TRANSITION, DYNAMIC EQUILIBRIUM AND ORGANISATIONS

Most of us do not easily associate organisations with molecules, let alone with physical phases (solid – fluid – gas). You need to be a scientist–entrepreneur to come up with this analogy. And that is exactly what Safi Bahcall explains in his book *Loonshots*. Not satisfied with the hundreds of books and articles about 'culture' without solid scientific underpinnings, Bahcall approaches the issue from a different angle. During an entertaining podcast with a16z (Andreesen Horrowitz), he starts by explaining how, at zero degrees Celsius, water 'suddenly' transforms into ice.

His point is that a material cannot exist in two phases at the same time, except on the edge of phase transformation, when there is a coexistence of two phases known as phase separation. The phases break apart, but they

stay connected. However, there is a control parameter. In the case of the transformation of water into ice, for instance, the control parameter is temperature.

His main thesis is that companies, executives and management gurus are too focused on **culture.** Instead, they should focus on **structure.**

By changing the control variables, you can change structure. He describes four design or control parameters:

a. **Equity stakes**
b. **Return on politics**
c. **Project–skill fit**
d. **Management span of control**

Equity stakes are all about the renumeration package of employees. Return on politics is the very intriguing concept that it may well be more rewarding to spend your time on politics and make yourself 'visible' than actually producing something useful, because the latter is less rewarded compared to 'working your way up'.

Project–skill fit is ensuring that the right people are up to the task, and vice versa – that they are motivated by what they do. It is about ensuring that people's particular strengths are identified and allowed to blossom on the most fitting projects.

Both the comparison with the physical transformation process of 'matter' and the concept of four design/control parameters are refreshing to me. My own experiences of working in various corporates, alongside an extensive literature study of how organisations work, indicate that it is indeed very difficult for a company to be in different 'physical states' at once, and a successful change from one 'state' to another requires a change in the control parameters.

WIN SUPPORT

Anyone who has tried to introduce small or large innovations or digital transformation initiatives at our companies has experienced how frustrating these efforts can sometimes be. In the insightful book *Innovation Capital* (2019), the co-authors argue that successful innovators have mastered the art of winning support to turn their ideas into reality.

They recognise the importance of innovation processes such as those comprising the lean start-up approach, design thinking, Google Sprints and customer engagements. They also emphasise the required cultural aspect, and of course the need for resources. But many existing books, papers and blogs have already addressed these elements. They go further by identifying an often overlooked and underestimated component, which sometimes becomes buried under 'change management', thus depriving it of the attention it deserves. They tackle what they call 'the innovator's paradox': the more radical or innovative your idea is, the greater a challenge you will face to turn it into reality. Their argument is that doing so does not boil down only to luck, unexpected support, being able to deliver an effective pitch, charisma or leadership, but depends upon **innovation capital: an entire set of skills tied to leadership, influence, social capital and relationship management. It comes from who you are (human capital), who you know (social capital) and what you are known for (reputation capital). This set of attributes then gets multiplied by a factor called impression amplifiers. People are not born with this 'skill', but it is necessary and can be learned.**

Human capital is composed of: (a) forward thinking skills; (b) creative problem-solving skills; and (c) persuasion. **Social skills** is related to networking, but with a twist: your ability to excel in networking through weak social ties to obtain the resources you require. Innovation capital leaders focus on: (a) innovators and entrepreneurs; (b) organisation leaders; (c) financial benefactors; (d) influencers; and (e) customers. **Reputational capital** concerns what you have achieved. Being a successful founder is the most valuable attribute, but there are also other paths available, such as building a reputation for innovative and strategic thinking in your company and developing 'scrappiness' – an ability to get things done with limited resources.

This concept essentially explains why successful entrepreneurs can raise an order of magnitude more in VC funding when they engage in a new venture.

The importance of innovation capital can be understood by considering the faith of a brilliant mind like Tesla versus the hardworking, but less intellectually gifted, Edison. Tesla was ousted from his first company, and he failed to secure funding for his second one. But his inventions ultimately became the heart of the Tesla cars we know today.

DEAL WITH 'THOU SHALL FAIL'

One of the most incredible movies I have ever seen is called *The Kon-Tiki Expeditions*. Being unaware of the story behind it, I was initially not very interested in watching what I thought was a fantasy adventure film. But as I read about the script, an amazing story unfolded. In 1947, Thor Heyerdahl and five companions crossed the Pacific Ocean on a wooden raft in an unbelievable bid to prove his theory that the Polynesians undertook the same feat on a similar craft over 1,000 years ago.

Dealing with being told 'no' is a common requirement for intra- and entrepreneurs. Within a large company, there will always be people who are resistant to change, and entrepreneurs experience countless rejections from investors and VCs. The title of this subsection could also have been 'perseverance': entire books have been written about the immense importance of perseverance in relation to intra- and entrepreneurship. Only a handful of large companies have suitable cultures and systems implemented to allow making decisions to undertake something new at various levels in the organisation (within set limits).

Google and Netflix may be suitable examples. Let's come back to an example raised above about William Pearson, a young Schwab techie, who understood the power of the internet early on and even built a mocked-up version, but couldn't get his supervisor interested, whatever he tried. He encountered one cultural element that makes this type of venture difficult: as reported by John Kador, 360° feedback favours team players, not mavericks with ground-breaking ideas. As a consequence, many people stop trying to be mavericks. To cut a long story short, Pearson eventually managed to get hold of Executive Vice President Tom Seip, who was known to be anti-bureaucracy. He was stunned by what he saw and ensured that the founder himself became involved. From that point onwards, 'e.schwab' received the attention it needed.

Once upon a time, brick-and-mortar video stores were king. Late fees were ubiquitous, video-streaming unheard of, and widespread DVD adoption seemed about as imminent as flying cars.' This quote refers to the inspiring story of how Netflix went from 'idea to unicorn' and changed 'television' for ever. It comes from *That will never Work!,* a book about the birth of Netflix by the company's co-founder and first CEO, Marc Randolph

EMBRACE THE OUTSIDE

Marc Benioff, founder of SalesForce.com, reflects upon a new book about innovation, *Innovation Capital:* 'this book shines a unique spotlight on a fundamental building block for achieving success in any entrepreneurial endeavor – cultivating a network of amazing mentors, advocates, and benefactors to help turn your ideas into reality'.

A core component of human capital is forward thinking. In order to hone this 'teachable skill', the authors recommend a few very down-to-earth but worthwhile techniques: (a) read a lot!; (b) bombard yourself with customer and technology trends; and (c) travel a lot, both physically and mentally. Bill Gates introduced a 'Think Week' for himself – a week devoted to being away and reading books, technical proposals, trends, blogs, etc. 'The Internet Tidal Wave' from 1995 is an example of the type of creative output Gates produced at the end of his Think Weeks. Indra Nooyi, CEO of PepsiCo, updates her MegaTrends every two years.

ING's chief innovation officer, Benoit Legrand, concurs. He stated in an interview with PLUM (April/May 2019) that forming partnerships with external providers like fintechs is absolutely central to the ING model.

NURTURE SERENDIPITY

When it comes to serendipity, some of us may spontaneously think about Peter Chelsom's 2001 movie starring Kate Beckinsale and Jeremy Piven, possibly stirring up some romantic memories. But the actual concept of serendipity does play a significant role in many aspects of our personal and business lives. Unexpected encounters may lead to one thing, which may then lead to the next and the next.

When Bolero's head of development, Matthew Van Niekerk, started reading about blockchain back in the beginning of 2015, he could never have imagined how a single article about a new technology he never heard of before would drastically alter his life. Although it was quite unrelated to the job at hand, he did raise the topic with the board of the investment bank and request to attend a conference about it in London. There, he met Patrick Byrne, the charismatic CEO of Utah-based Overstock.com. At that time, Patrick was already a controversial figure in US finance circles, but he had a passion for disruption, and he saw in blockchain an ideal technology. Overstock set up a VC fund dedicated to blockchain investments. The two got on and Patrick was invited to speak at a digital conference organised by KBC Securities. Matthew became increasingly interested in blockchain and finally set up his own company. Settlemint is now a fast-growing Belgian-based fintech. Patrick's story ended differently. He was labelled by *Forbes* magazine as the 'Mad King' and was forced to resign from Overstock due to his alleged involvement in US politics.

Swedish creative studio **Bernadotte & Kylberg** is owned by the Swedish prince **Carl Philip Bernadotte** and Oscar Kylberg. Kylberg attended Stockholm-based design school Forsberg and also the Rhode Island School of Design (which also counts the founders of Airbnb among its alumni). In an interview with the *FT*'s Weekend Edition, he stated: 'We are ideas people in the first place and the designers. We are influenced by everything around us – whether it is through discussion, something we have read or that we have seen by simply walking around'.

If you stay in your own safe, confined space, physically and mentally, little or no magic will happen.

CONSIDER ANTHROPOLOGY

What has struck me in evaluating countless inspiring and successful examples is the presence (or hiring) of anthropologists, psychologists, writers, philosophers and designers. This is a complete shift from even five years ago, let alone ten, with certain exceptions, such as Apple and Intel. It is true that many UK financial services firms have always hired liberal arts graduates from Oxford and Cambridge, but most of us would agree that this used to be for different reasons. Now, we're looking at a completely different ball game.

Yes, you need plenty of top developers and quants and engineers. But great products like Uber, iPhones, Airbnb, etc. are actually conceived by, or at least with considerable input from, 'fuzzies'. The founders of Airbnb almost did not get funding because of their academic degrees in design and arts. And I'm sure that we all admire Sir Jon Ive and Steve Jobs himself.

I know very few financial institutions who employ or consult with anthropologists. I believe that this should change if these companies care about customers and their customer journeys, and because significant socio-political changes are shaping our world. One much-reported issue is the importance affluent millennials attach to sustainability and equality. Another is the way that young generations are living their lives on social media apps like Instagram, Facebook, Snapchat and TikTok; how they are immersed in a world of influencers, bloggers and vloggers. How far is this world from the traditional world of commercial banking, let alone private banking? Let's take the world of savings and investments. Massive changes are currently taking place, shaped by the introduction of much more stringent regulatory requirements, the unstoppable rise of passive investing versus active investing, the spectacular downfall of investment gurus like Pimco's founder **Bill Gross,** and more recently the end of Woodford Investment Management and its legendary founder, Neil Russell Woodford.

On top of all this, the world is digitalising. Investments are increasingly moving online, which is an entirely different proposition. People often underestimate the huge differences between payments, lending and savings/investments.

Leading companies like Airbnb, Intel and Netflix often turn to anthropologists. For instance, cultural anthropologist Grant McCracken is often engaged as a consultant by the world's largest companies, including Netflix and Google. Innovation – as we have defined it – is all about something new, exciting and valuable to the customer. In that context, it is vital for understanding this changing world. For instance, one request that McCracken received from Netflix was to investigate 'bingeing'. He discovered that there were misconceptions around how current viewers watch television. His anthropological review revealed that it is not about bingeing but about feasting, and that Netflix viewers are watching high-quality TV programmes in a new kind of way. McCracken concluded that they are intelligent, thoughtful and involved.

An increasing number of forward-thinking financial players are also appointing people like Peter Brooks, Barclays' chief behavioural scientist, in key positions. Many fintechs, which typically have a very keen focus on the end customer, have engaged behavioural experts and anthropologists. For example, Roboadvisor Betterment employs a quantitative and behavioural specialist, and at InvestSuite, we employ a human insights strategist (despite our nature as a purely B2B player). When working with Nordic financial institutions, elements like 'the human perspective', 'behaviour', 'sustainability' and 'nudging' are key considerations.

Corporate culture is determined by human behaviours. It reflects the values shared by people who interact with an organisation, affects the choices people make and impacts the day-to-day operations of the business process. These influences raise firms' awareness of the different habits of a variety of people, including both staff and consumers, thus enabling them to create a more sustainable and positive culture.

The phrase 'this is how we do things around here' is not only a key denominator of behaviour, but when applied to employees' daily habits, it reveals how strong or weak a company's culture is. For example, if an anthropologist observes staff rushing through tasks to meet specific deadlines, the workers' main focus (and therefore the company's) will seem to be on speed of production, not necessarily on quality. There could still be a focus on quality if faster processes involve ways to reduce errors, but it's clear that being focused on one goal might lead to missing out on other things. Try spending some time watching your own staff go through their day to see what matters to them.

What happens inside your company is typically also applied outside the company. In fact, you will often find yourself feeling proud of how your team is 'living the brand'.

Let's take a look at another example. In 2013, Intel's in-house anthropologist, **Dr Genevieve Bell,** was tasked with determining driver behaviour during the company's **collaboration with Jaguar Land Rover.** Following her discovery that drivers were using smart devices despite voice-command systems being available, she advised the two companies to develop a system of car-to-device synchronisation when drivers enter their vehicles.

Ultimately, this led to a better driving experience for Jaguar drivers, and to Intel being hired by Toyota on a similar project shortly thereafter.

The two examples above illustrate how behaviour patterns can provide insight into which habits can benefit a business, and how incorporating positive ones **can improve both the workplace environment** and the customer experience. Behaviour-related insights can also influence other aspects of a business and help owners and executives create the ideal culture both within and outside the company.

MASTER THE SCIENCE OF LEAN SOFTWARE AND DEVOPS

As mentioned above, many innovations, both small and large, in the financial services industry (retail and private banking) centre around 'tech'. In many cases, this boils down to digital or mobile 'innovations'. I have argued previously the immense importance of an obsessive customer focus and the importance of grasping behavioural sciences to better understand customer needs and desires. But at the end of the day, development is also a key consideration. Whilst a first-mover advantage is not always warranted, a 'very-late-or-never-mover' position is not desirable either. **Nicole Forsgren, Jez Humble and Gene Kim** conducted in-depth research into what makes building and scaling high-performing technology organisations. Their findings and framework are the subject of their book *Accelerate*.

In discussions of innovation, you seldom read about the nuts and bolts. It is clear that any organisation that masters the recommendations in Forsgren, Humble and Kim's book, and has the right people in place, operates at a significant advantage. A C-team can dream about digital transformation and leadership, but if the required capabilities and frameworks are not in place from technical, architectural, human, and organisational perspectives, initiatives are bound to fail. Strategists, visionaries, people and execution capabilities go hand in hand. Charles ('Chuck') Schwab had the vision and the passion, but he needed people like William Pearson to make his dreams come true.

Many retail and private banks face immense legacy issues. They have to deal with a myriad of systems, applications and databases. Some have bought external core banking platforms in a timely manner, while others have not. Some are satisfied with these external packages; others less so. Shall we build

a middleware or wrapper around our old systems, or shall we start all over again? These are existential questions. For instance, a large global player has chosen to conduct an overhaul of their 'backend' first. That will set them back for at least two years from a 'front-end' perspective, but they may emerge with more success in the longer term.

While it is beyond the scope of this perspective, it is worthwhile to take a brief look at the 24 capabilities outlined by Forsgren, Humble and Kim as driving improvements in software delivery performance. These 24 can be clustered in five categories: continuous delivery – architecture – product and process – lean management and monitoring – cultural.

Version control	Deployment automation	Continuous integration	Trunk-based development	Test automation	Test data management
Shift left on security	Continuous delivery	Loosely coupled architecture	Empowered teams	Customer feedback	Value stream
Working in small batches	Team experimentation	Change approval processes	Monitoring	Proactive notification	WIP limits
Visualizing work	Westrum organizational unit	Supporting learning	Collaboration amongst teams	Job satisfaction	Transformational leadership

Some of the above items speak for themselves; others less so. However, the authors found sufficient evidence, based upon their reported application of rigorous scientific research methods, to allow them to assert with confidence **'that high IT performance correlates with strong business performance, helping boost productivity, profitability, and market share'.**

MIND 'DOMAIN KNOWLEDGE'

I am often surprised how infrequently 'domain expertise and experience' is considered when talking about innovation. True, some of the world's leading apps appear to have been produced by creative minds with little-to-no domain expertise. But is that really the case? First, many such developers are, by definition, experts in problem identification. Second, taking Airbnb as an example, the company's founders were not hotel experts, but they had very

relevant design expertise, which proved crucial for their success. They also had an expert techie as a third founder. Finally, these teams either learn and/or add domain experts to their company very quickly.

Stadil and Tanggaard go one step further in their book *In the Shower with Picasso,* claiming that creativity requires domain-specific knowledge.

In his book *Why Do So Many Incompetent Men Become Leaders?,* Tomas Chamorro-Premuzic, the chief talent strategist at Manpowergroup, does a wonderful job in bringing science into the equation. Based on meta-analysis (aggregating the results of thousands of studies over many years), he reveals three distinct types of leadership potential that have the highest likelihood of predicting an effective leader:

1. **Intellectual capital**
2. **Social capital**
3. **Psychological capital**

Although the current discussion is focused on innovation and creativity, an effective leader is undoubtedly required to bring out the best in his teams and people, and to foster a culture of innovation and entrepreneurship. Part of being an effective leader is possessing intellectual capital. Chamorro-Premuzic identifies domain-specific expertise, experience and good judgement as the key ingredients of this type of capital. He quotes the German philosopher Martin Heidegger's claim that the main difference between individuals with and without expertise is that the former can quickly ignore the irrelevant aspects of a problem. The scientific evidence shows that, at all levels of seniority, individuals' technical competence and experience predict not only their future job performance, but also – among other things – *higher levels of creativity*.

Madsjberg recalls a hilarious 'brainstorming' event involving 'world-leading innovators and creative people'. At some point, seemingly having had enough of the nonsense involved, a doctor raised his hand and pointed out the obvious: 'Sorry, but none of you have any medical background. Do you really think you can solve the world's health problems by these kinds of games?'.

Colvin highlights that most, if not all, famous inventors and creatives – Picasso, Bach, Gandhi, etc. – needed long and in-depth periods of immersion and training before achieving the things they are famous for:

> **'As for what exactly is going on during those long periods of preparation it looks a lot like the acquisition of domain knowledge that takes place during deliberate practice. It is certainly intensive and deep immersion in the domain, frequently under the direction of a teacher, but even when not, the innovator seems driven to learn as much as possible about the domain to improve and drive herself/himself beyond the limits of the field.'**

Innovation capital is comprised of human capital, social capital and reputational capital. It is possible for an individual to learn and improve upon all three (assuming a certain IQ threshold). Creative capital can be enhanced in various ways. One key element the authors recommend in the book is *become an expert – quickly.* The more knowledge you possess in more areas, the more problems you can solve. Jeff Bezos, for instance, has developed in-depth expertise in software engineering, robotics, information technology, devices and rocket technology. Unfortunately, most people stick to one area.

MIND 'SIZE' AND 'STRUCTURE' – THE POWER OF SMALL TEAMS AND OWNERSHIP

> **A small company of scientists and engineers, acting outside established channels, got hold of the authority and money for developing new things.**

To some, if not most of us, the above could be describing a start-up. In reality, it is a quote from the top levels of the US military around 1940 that describes the group run by MIT legend Vannevar Bush. As far back as the 1920s and 1930s, young scientists and military researchers had discovered, through their experiments with radio waves, the earliest ship and plane detection systems. However, the traditional US military leadership believed more in guns and ships and planes and bayonets. Despite the growing evidence that the Germans were building up a clear technological lead, US military leaders rejected even small funding requests from their own researchers time and time again, until Bush himself pleaded with Theodore Roosevelt to allow

him to set up a separate elite team of engineers and scientists to close the technological gap. In his informative book *Loonshots,* Safi Bahcall, a physicist and biotech entrepreneur, argues that thousands of planes, ships and, most importantly, human lives could have been saved if top military leaders had listened to their own staff and built early warning systems. The Pearl Harbor attack in particular comes to mind.

It was very clear that the radar early warning systems could not be developed 'inhouse' within the organisational set up of the US Army. Bahcall makes a very interesting point in this regard. Rather than trying to *change the culture* (of the Army or a company) – which would be extremely unlikely to be successful in a short period of time – he suggests that it is more realistic to *change the structure of a company* or an organisation. In the case of Bush and the US Army back in the 1940s, the setting up of a small and separate unit resulted in many lives being saved and the achievement of major technological breakthroughs.

> **'The essence of a sound military organization is that it should be tight. But a tight organization does not lead itself to innovations. And loosening it in times of war would be fraught with danger. But there should be close collaboration between the military and some organization, made loose in its structure on purpose.'**
>
> *Vannevar Bush*

According to Bahcall, there are two important elements of phase transitions:

1. **At the heart of every phase transition is a tug of war between two competing forces; and**
2. **Phase transitions are triggered when small shifts in system properties occur.**

The latter point allows us to connect Bahcall's theory about phase transition with dynamic equilibrium: **the phases must break apart while staying connected.**

In one unpleasant encounter with a military officer, Bush recalls thinking that 'unfortunately there are still some officers in existence who were so dense that they did not realize that the art of war was being revolutionized all about them'. Try replacing the words 'military officer' with 'corporate chieftains' and 'the art of war' with 'the art of competing'.

On the other hand, the scientists and engineers in Bush's team were sceptical about ties with the military and the associated interference. This could be similar to a start-up being acquired by an incumbent in the wrong way.

Bush had the skills to 'merge' the different points of view and act as a bridge. He also cautioned his scientists that 'our goals are more than clever ideas. Our goals are to create products that work!'. In modern-day start-up talk, this would equate to achieving product–market fit.

This leads us very neatly into the theory described by the late Clayton Christiansen in his renowned book *The Innovator's Dilemma:* it is almost physically impossible to truly innovate at large companies, let alone from 'within'. Anecdotical empirical evidence is all around us. Large, cost-oriented companies like Kraft Heinz and Interbrew clearly struggle to innovate and realise organic growth. This is also fully in line with Vannavar Bush's experiences in the 1930s and 1940s.

The point of small teams is partly their restricted size, which logically allows higher working speeds. But they are equally – or perhaps even more – about empowering people. This is closely linked to choices regarding centralisation or decentralisation. Both organisational models have pros and cons. The former emphasises the desire to be closer to clients and empower 'local' people, while the latter aims to benefit from cost synergies. Consider the viewpoint of Atlas Copco, one of the world's most respected manufacturing companies. It has deliberately selected a decentralised strategy. *FT* columnist Richard Milne reports that Atlas Copco's headquarters are lean, with most decisions taken within the separate divisions. Its CEO Mats Rahmstrom considers this decentralised structure as one of its competitive edges: 'we decided for more speed and trust than for financial synergies'.

Earlier, I quoted Ken Kocienda, ex-software engineer and designer at Apple: 'At Apple we applied several principles and concepts but it took *committed people* to breathe life into these concepts and transform them into culture'. He adds an interesting element as follows: 'In my experience, this manner of culture formation works best when the groups and teams remain small, when the interpersonal interactions are habitual and rich rather than occasional and fleeting'. It is quite amazing to read in his book that the team that edited the code for the Safari browser project consisted of only ten people before they made the beta announcement, and only 25 people are listed as inventors on the '949 Patent for the iPhone'. These were not software teams made up of hundreds, let alone thousands, of developers. The development teams at Apple are small, which fosters feelings of personal empowerment and a sense of team cohesion.

Start-ups aim to scale and become larger companies: that is why they are set up in the first place. The initial benefits of being small and nimble have a tendency to disappear almost by default; hence, special leadership and culture approaches are needed to deal with growth. Take for instance Expedia, the online travel agency that owns businesses such as hotels.com, Trivago and Vrbo, which announced plans in early 2020 to cut 3,000 staff. Its chairman and shareholder, Barry Diller, stated in an interview with the *FT* on 26th February 2020 that there had been a material loss of focus: 'Expedia became sclerotic and bloated and it is all life and no work'. There is a striking difference here from Booking.com, a scale-up which is, in its own right, disrupting the previous disruptor. Booking.com's fixed cost base is half that of Expedia, and it enjoys much healthier margins.

Innovation and creativity cannot be, and are not, limited to small companies. There are likely a number of innovators and creatives in every company, small or large. But do they have the freedom, space and budget to act on it? Sometimes, a company creates this space. Many people would think immediately about 3M, the company behind the famous Post-its, where employees are reportedly allowed to spend time on creating new things. But what of companies who don't provide the context for creatives to do what they would like to do? Or what if their ambitions lay elsewhere? Consider Loren Carpenter, who worked as an engineer at Boeing and was intrigued by fractals. Marcus de Sautoy describes how Carpenter used Boeing's computers during the night to develop a two-minute animation of a fly-through of his

computer-generated fractal landscape. Carpenter presented his work at an annual SIGGRAPH conference in 1980 and impressed Steven Spielberg. He left Boeing to co-found Pixar with Ed Catmull and Alvy Ray Smith.

Google and Facebook are acquisition machines. While they were true innovators when still start-ups themselves, newer success stories like Whatsapp, Instagram and Oculus – all at Facebook – arrived via acquisitions. Google is still overwhelmingly the revenue and profit machine at Alphabet. Biotechs account for the majority of innovations in pharma. The 'digital evolution' of banks in terms of payments and lending came about almost entirely via tech players or start-ups like m_Pesa, Alibaba, Google and Tencent, and the entire digital 'fronting' of financial players was initiated by the evolution of mobile devices and social media.

CASE: On is an amazing example of how small beats large. It was founded by a Swiss ex-triathlon athlete, his manager and the ex-marketing manager of venerable furniture brand Vitra. They launched what is arguably the first real innovation in close to 50 years of sports shoe development: the Cloud Ictech. The large R&D departments at Nike, Puma, Adidas and many other firms were taken by surprise.

But what happens when the initial innovators and entrepreneurs feel that the corporation is taking over? Initially, Whatsapp, Instagram, Oculus and DeepMind enjoyed complete or far-reaching 'independence'. One could argue that 'synergies' were achieved while keeping the DNA of the respective start-ups intact. But of course, a different ending is inevitable. Just like the DNA of entrepreneurs is characterised by a desire to operate independently, the corporate DNA is often (understandably) all about standardisation, alignment and centralisation, precisely to ensure optimal cost structures and adherence to the required standards and ways of doing things. After a promising start, 2019 marked the end of some high-profile partnerships: the founders of Instagram, Oculus and Whatsapp left Facebook, and the

co-founder of DeepMind took a leave of absence in the summer of 2019. DeepMind was founded in 2010 to pursue general AI, and it was acquired in 2014 by Google/Alphabet.

> **CASE: HP Personal Laser Printer. The personal laser printer was invented four decades ago and FT columnist Richard Waters calls it the culmination of one of the most successful corporate 'skunk works' ever undertaken. It was not a central initiative, but rather the result of the innovation drive of a group of engineers. They were 'far' from HQ. It was not merely a product, but even more so a business model innovation, based upon revenues generated by after-sale services like providing ink cartridges. Its profits supported HP for years to come, acting as a true cash cow.**

In his book *Non-Bullshit Innovation,* **David Rowan** undertakes a worldwide journey to discover large corporates who are getting it right and going beyond the setting up of innovators, CVC funds and innovation teams with little effect. Often, the successful cases involve to some degree, alongside the other elements covered elsewhere in this perspective, 'small entities', 'dedicated teams', 'labs', etc. Rowan is 'intrigued by the notion of the small, hybrid empowered team as the gateway to transformative thinking.' He describes the example of Indian-based Star India, owned by 21st Century Fox, which launched a video-streaming service called Hotstar. Hotstar became such a success that is worthwhile exploring further to identify the reasons why this was the case:

1. **Hotstar is run independently with the culture of a start-up;**
2. **It sees itself as a tech company first and is 'data obsessed'; and**
3. **It embraces winning execution strategies and ways of working, like the famous Jeff Bezos 'two-pizza rule'.**

This is, of course, the case for any industry. We'll take another example from the fashion world. Stefano Pilate is a household name in the field of haute couture. He was formerly the creative director at Yves Saint Laurent. In *The Eye: How the World's Most Influential Creative Directors Develop their Vision,* he explains how he feels about setting up on his own: 'When you work for a big company, you have less and less time to do your job effectively. I don't need these filters anymore'.

CASE: Very few online brokerages are set up by incumbent banks. Bolero is an exception. Almost 20 years ago, it was amongst the first players in Europe. It was established as a dedicated service within KBC Securities, the investment banking branch of KBC Bank. The initiative really came from the very entrepreneurially oriented investment bank, and there was no corporate banking initiative behind it. The word start-up did not yet exist in Belgium and the concepts of corporate innovation teams and leaders were yet to emerge. The investment bankers thought that they could leverage their equity research and trading prowess while 'embracing' this new technology of the internet. VMS Keytrade, set up earlier than Bolero by tech entrepreneurs, was the first online broker in Belgium. The Dutch-owned Binkbank (now Saxo) entered the game later, and these three players largely distributed the market amongst themselves. Bolero was reborn in 2013 with the arrival of a new management team and grew from 15,000 customers to almost 100,000 in the course of five years. It was then taken over by its owner, KBC Group, and integrated into the retail bank. One of the Group's board members, however, stated clearly that 'the setup and success of Bolero would never have been possible if it would have been conceived within the retail bank from the outset'.

Small teams led by an energetic and visionary CEO, team leader or founder move quickly, make fast decisions and are 'driven' by a purpose. That purpose may be more or less noble, but one always exists, and the employees can feel it. They are energised by this drive. Big companies can maintain this, as experienced by the likes of Amazon, but – through no fault of their own – they are by definition slower and have more at stake and at risk.

Although this perspective is not about M&A, M&A integration issues or how M&A can complete the innovation roadmap, it is important to point out how poorly managed acquisitions can quickly destroy the rationale of why the target was acquired in the first place. Allowing the owners of acquired companies their entrepreneurial freedom is a pre-requisite (unless the deal is about realising cost synergies or adding a new geographical market). Smart players do exactly that. A good examples is iconic Danish design firm **Muuto,** which was bought by US design company Knoll in 2017. The Danes kept their HQ in Copenhagen and retained their creative independence. Muuto benefited from the acquisition due to Knoll's presence in the US, which acted as a real

catalyst according to marketing director **Line Brockmann Juhl** in an interview with *Monocle* (no. 128, 2019).

One lesson learned here is to consider setting up separate units, and then merging them when the time is right. Another lesson is NOT to set up temporary teams; at least not if the intended innovation is too large and disruptive.

If you are serious about launching a possibly disruptive or genuinely new service, you should set it up as a separate unit and let it function as a real start-up. You could even consider setting up a legal entity, knowing that at some point in time, when the child grows up into a teenager or adult, it may well have to be brought back into the main fold.

USING MINDS TO KEEP THE INNOVATION MACHINE ALIVE

Consistent innovation is the ability of a team to repeatedly add value to the business' states Marty Cagan, a thought leader in technology product management and the author of *Inspired: How to Create Products that Clients Love*. Good ideas should come from everywhere. How can anyone oppose such claims and aspirations? But how do you ensure that, once a company grows larger, it will keep innovating? There is no magic formula. As Cagan points out, 'many organisations lose their ability to innovate at scale, and this is incredibly frustrating to both leaders and the members of the product teams. It is one of the main reasons people often leave large companies for start-ups'.

Insight: Top reasons for loss of innovation (according to Marty Cagan):

1. **Lack of a customer-centric culture.**
2. **Lack of a compelling product vision.**
3. **Lack of a product strategy.**
4. **Lack of strong product managers.**
5. **Lack of stable product teams.**
6. **Lack of engineers in discovery.**
7. **Lack of corporate courage.**
8. **Lack of empowered product teams.**
9. **Lack of a product mindset.**
10. **Lack of time to innovate.**

Managers at large companies are highly skilled at what they do. They steer huge vessels, and sometimes smaller ones, in the right direction. But they seem to have trouble understanding the DNA of creatives, innovators and entrepreneurs. Those types of people are not better or worse than the 'corporate' man or woman, but they possess different characteristics and are driven by different things. Innovators want to innovate. Entrepreneurs want to build and grow things.

This is not limited to 'business'. The drive to create, and the aim for perfection sometimes, can be found in all human undertakings, be it those of artists, craftspeople, tech entrepreneurs, architects or people with any other pursuits. The *FT* from the weekend of 28th/29th September 2019 comments upon Redzepi's diary entries as exhibiting a 'relentless drive to excel, to innovate, to continue to push into the unchartered territory of after-success'. Redzepi himself says the following of his drive to innovate: 'Constantly questioning and altering things has become a drug for me'.

12. REVIVE THE OLD WAYS

MIXING DISCIPLINES

There was a time when a number of people were real polymaths. One obvious example that comes to mind is Leonardo Da Vinci. At some point in history (or rather, across a prolonged period) we turned more and more into specialists. Single-silo or single-topic innovations became dominant. A recent review of filed patents, however, shows clearly that the world has long left 'silo inventions' behind, as they now only make up 12% of all patent applications. This is a sign that a multi-disciplinary approach is re-emerging.

Czech–American professor Mihaly Csikszentmihaly highlights the importance of 'creative places'. He uses Florence as an example, where Roman architectural techniques were rediscovered in the 15th century, with the required money supplied by rich families like the Medicis. The city attracted writers, musicians, painters, craftsmen, sculptors, philosophers and mathematicians and became an amazing place where disciplines mixed and people like Da Vinci thrived. It is aptly referred to as the 'incubator' of the Renaissance. Centuries later, Louis XIV achieved similar results, with Versailles becoming an incubator for the greatest writers, painters, musicians and philosophers of their time.

More and more, great minds are beginning to explore multiple domains again. This fits much better with modern-day innovation requirements. Jeff Bezos is an example of an individual who is continuously broadening his horizons and knowledge. Bill Gates does the same. But we don't have to look that high up in the celebrity food chain for examples.

Years ago, if you wanted to work in banking, a degree in economics or law, for instance, would suffice. Most banking departments employed 'single-degree' graduates and, more often than not, that single degree was either an economics degree, or a degree in social and political sciences or law. Imagine any given banking department with such a single-degree focus in today's industry. Gradually, developers and scientists were brought on board.

Fast forward to today's dealing rooms or innovation departments, and throughout any given organisation you will find almost any degree. Imagine for instance the various skill sets required to develop a cutting-edge investment app: deep asset management expertise, quants, human insight experts, graphical designers, front-end developers, back-end developers, digital marketing experts and risk experts. In recent years, the more forward-thinking players have embraced concepts such as design thinking. However, whilst those ideas and concepts were still being identified, let alone embraced, some Nordic financial institutions (often a few steps ahead) were already working on 'the right level of digital dialogue' and engaging with experts in sociology, anthropology and nudging. Some of the best insights regarding how people think about money do not come from large banks' economic departments, but from human sciences experts like Kahneman or ReD Associates in Copenhagen.

Organising all of this in a sensible way requires having diverse teams – but not arbitrarily diverse ones. In *Rebel Ideas,* **Mathew Syed** argues the enormous power and importance of *collective intelligence* through diversity:

> **'The key is to find people with perspectives that are both *germane and synergistic*. There is no point in putting together a group of 'diverse' people consisting of a skateboarder, a sociologist, a lawyer, an economist, etc. of whatever race or gender to design a hadron collider.'**

We can find inspiration in what took place in coffee bars at the end of the 18th century and during the Belle Epoque. Craftsmen, musicians, philosophers, painters, sculptors, philanthropists, writers, scientists and architects came together to debate and socialise. That type of gathering hardly exists anymore. Or we can consider the efforts of the founder of the **Bauhaus, Walter Gropius,** who deliberately assembled great minds from various different disciplines, including Le Corbusier, in his schools in Weimar and Dessau. Those places of immense and enduring importance should serve as guidance and inspiration. More than ever, given the convergence of so many disciplines, soft and hard sciences should find each other, and forward-looking institutions should recognise this need and engineer ways of taking part in it, and, if they are large enough, to orchestrate it.

Simon Kuper, one of the FT's finest columnists, touches upon this topic in his column 'What we can Learn from People with Beautiful Minds': beautiful

minds (like Nobel Prize or Pulitzer winners) *treat every situation as a learning opportunity; they can clear their minds* and really 'see' the other person they are talking to. They are *specialists, yet they are always trying to master other fields; for example,* **Walter Mischel,** a psychologist who helped to change our understanding of personality, was also a painter and a music critic. They gather insights from many different fields, like **Hannah Arend** did for her acclaimed book *Eichmann in Jeruzalem,* which is a blend of history, philosophy, biography and journalism. Finally, they have the imagination to come up with ideas but also the humility and techniques to test these against data.

THE NEW ECOSYSTEM

In early October 2019, Novartis and Microsoft announced that they were joining forces to apply artificial intelligence to the world's most challenging health care problems. Google and its DeepMind unit are also determined to solve such problems. The *FT* described the deal between Novartis and Microsoft as one of the most expansive partnerships to date between big pharma and big tech.

In tune with the rest of the current paper, a lot boils down to culture and the vision of the firm's senior management. In Novartis's case, Vas Narasimhan wants to turn it into a data science company. He has a clear vision (*FT,* 2nd October 2019): 'My aspiration is to lead in the [data science and AI] space. If we can scale the technology across the value chain of the company, which, I hope, will lead to a significant differentiation over time'. Novartis employs around 800 data scientists and biostatisticians.

Whereas signs of disruption and destruction were heralded in the financial sector a few years ago, a new theme has emerged since then: ecosystems between financial institutions, IT/core banking platform providers and fintechs. While the rationale is clear, the execution is not. However, many initiatives are under way and, while there are not yet many success stories, a slow revolution is beginning under the radar. One sign of 'change' is the setting up of innovation and new business development teams at large core banking platform providers like Avaloq, Asseco and Inversis. Most of these players realise that they cannot do it all themselves. In a very similar manner to what they can offer to the banks, i.e. core banking systems, fintechs can help to fill 'holes' in their own 'suits'.

Balderton Capital, a London-based VC, holds the following belief:

'For a millennium, Europe was the cradle of innovation. Yet today, only a few of its largest enterprises are technology companies. We believe this will change. The continent's long tradition of innovation and substantial engineering talent, along with ten years of ecosystem development, have come together to create an environment where startups can scale to become large companies with global impact.'

CORPORATE INCUBATORS, LABS AND INNOVATION HUBS

The **Bell Labs** offer a perfect example of these places where different disciplines worked side by side. The invention of the transistor was made possible by the brilliant work of three geniuses – Walter Brattain, John Bardeen and William Shockley. Brattain was an empiricus, Bardeen was a quantum theoretician, and Shockley was a solid-state physicist. But at Bell Labs, other people also contributed to the invention and realisation of the transistor. There were industrial chemists, cable experts, product specialists, material science experts, physicists and craftsmen all working side by side, inspiring each other and contributing. The renowned **Xerox PARC** is another example of an innovative and inspiring ecosystem. Steve Jobs got his idea for the iconic Apple Mouse from visiting PARC. It is often overlooked, but researches like Isaacson highlight not only the fact that people from various disciplines worked at the labs, but also that they were 'physically' close to each other. Interaction was possible and even engineered. Could this be called serendipity? Jon Gertner wrote in *The Idea Factory* that the amazing innovations in the labs were possible because of both 'great brilliant men' and the mixing of and cooperation between various disciplines. In contrast, mixing teams and people without the presence of greatness and brilliance will not lead to positive results. One of the heads of the Bell Labs, Mervin Kelly, supported by maverick William Shockley, once said that 'despite the need for leadership, teamwork and organization... the individual is of the uttermost importance. It is in the brain of a single person were truly great and innovative ideas are born'.

A more recent example is the **Mediated Matter Group** (MMG), set up in 2010 by designer and MIT professor Neri Oxman under the support of the **MIT Media Lab.** The latter aims to be a place where art and science meet. The MMG goes a few additional steps beyond this and invites designers, glassblowers, architects, biologists, weavers, mathematicians, etc. to exchange ideas and work together in pushing the boundaries. This all sounds very much like what the Bauhaus movement and the Black Rock Mountain project, for instance, planned and tried to achieve: ground-breaking and mind-bending projects. One example of such a project is natural polymers replacing plastics and being used to print structures that follow patterns of organic growth. This could not have been achieved without all these different disciplines working together. It involved a 'fusion' of robotics, 3D printing, material engineering, synthetic biology and computer science.

In recent years, we have seen start-up ecosystems emerging in nearly every city, small and large, around the world. 'Silicon Valley' moved beyond San Francisco, Boston and London, and can now be seen everywhere. Financial institutions in particular have set up incubators, VC funds and innovation labs. Techniques like design thinking and Google's famous Google Sprints have been embraced and introduced. Tier 1 players like BBVA, Citi Group, Santander, HSBC, ING, Deutsche Bank, Lloyds and Nordea have been active for a long time. BBVA was one of the first to be established, more than a decade ago, but nowadays, many, if not most, banks have the full system in place. Medium-sized players, like KBC and Belfius in Belgium for instance, have well-established start-up incubators, their own VC funds and innovation departments. Chief innovation officers, digital leads, fintech explorers, transformation managers, etc. are relatively new functions in the corporate organisational jargon. Although likely a bit over its peak, trips to Silicon Valley to expose non-digital-native executives were part of the menu. However, private banks and wealth managers are on average lagging behind most banks in terms of digital development and innovation, moving slowly into a transition phase and only gradually exploring these new systems.

Let's point out that we are not talking about the obligatory pet projects of CEOs who would like to 'play the innovation game' by setting up what they perceive as being required these days. At best, these don't do any harm, and at the least they give a signal to the organisation. This can be very important in setting a direction and attracting (at least initially) the right people.

Rather, in this context, we are referring to incubators, labs and hubs that are well thought through and start yielding results. Before delving into some of the success parameters, let's talk about a few interesting examples.

Intercorp is a large financial services conglomerate in Peru. It goes a few steps further in its thinking. Not satisfied with, and even very concerned about, education in Peru, its charismatic leader 'CRP' conceived the concept of setting up its own scalable educational system with the help of Ideo. In terms of its own innovation and entrepreneurial efforts, it has launched the interesting initiative of its own fintechs with the goal of competing directly with the core business. They are located in a separate building, appropriately called 'La casita', insulated from the bank's compliance and bureaucracy. They are allowed to recruit their own staff independently from the bank's HR departments and to move quickly, but have a tight budget. Alongside this, Intercorp has also set up its own lab, LaBentana. David Rowan describes in his book how Intercorp brought in the 'Martians' – people with no banking expertise – to ask the 'right questions'. The team includes designers, anthropologists and, apparently, no actual bankers.

OP is one of the most innovative financial service institutions in Europe. While the usual suspects like BBVA, HSBC and Citigroup are typically quoted as 'innovation and digital leaders', OP arguably goes much further in its 'out-of-the-box thinking'. OP decided to take a radically different approach by going back to its core values and starting from there.

Levi Strauss lost its edge and revenues in the nineties. It then appointed **Chip Bergh,** a former US Army Captain as its CEO. Under his leadership, Levi's R&D hub was moved back from Turkey to California and the company established Eureka, its innovation lab. Bergh encouraged a culture of entrepreneurship: 'When we built Eureka, we realized we had this unique opportunity to change the future of jeans wear'.

When evaluating inspiring innovation or digital transformation journeys – whether those of the usual suspects or of some unexpected and lesser-known names like Alior, OP and Intercorp – the concepts of innovation labs, incubators and in-house start-ups always resurface. The less effective approach is setting up these initiatives because it seems to be the right thing to do. The preferable approach is based upon deep reflection and a deliberate strategy and vision. It includes, but is not limited to:

- **Allowing advanced independence;**
- **Implementing lean start-up principles;**
- **Allowing freedom in hiring;**
- **Implementing start-up 'cash flow' systems like tight budgets and runway management, rather than endless checks;**
- **Allowing the start-up to compete with the core business; and**
- **Hiring (almost invariably) designers, anthropologists, psychologists and philosophers.**

13. ACT. DO SOMETHING; TRY THINGS OUT

It seems appropriate to end this perspective by appealing to ACT.

'Recognizing an opportunity is only part of being an entrepreneur. The key is to act on your business insight and follow through. How many times have you slapped yourself on the forehead and asked why did I not think about that? Entrepreneurs are compelled to act. Otherwise, it is just talk.'

Charles Schwab, Invested.

'The bigger your company and the more people involved, it's axiomatic that it is going to take longer to get there', says Abigail Johnson, current chairperson of Fidelity Investments and the granddaughter of its founder. 'So, you need to get that foresight to try to get in front of it, and that is what led me to become very comfortable taking some chances on stuff.'

(FT, 4th November 2019)

A final quote from Ken Kocienda, ex-software engineer and designer at Apple: 'Our approach was highly execution dependent, as they say in Hollywood, meaning that the quality of the result is mostly in the *quality of doing*. We assembled our tools and we got to work'.

Almost all larger banks, and also many one, have their own innovation teams, incubators and even VC funds by now. Still, the actual implementation of third-party solutions offered by fintechs is very low compared to all the initiatives concerning cooperation between banks and fintechs.

Sarah Hernholm, founder of WIT (Whatever It Takes) argues in the 'Entrepreneurs' series of *Monocle* (issue 01, 2019) that it is important to 'focus on the doing. There is no textbook for becoming an entrepreneur. It is about giving (young) people the space to have

a go. Provide them with opportunities to try our new ideas, create prototypes, take these prototypes to market and use the feedback to do it all over again'.

The head of one of the innovation and partnership hubs of a leading European core banking platform uttered the words: 'why don't they (large banks) just act?'. He was referring to a major fintech event in the summer of 2019 that was all about newly emerging ecosystems comprising financial institutions, IT/core banking platform providers and fintechs. In theory, a marriage made in heaven. A large Swiss bank was actually sponsoring the event. But the head of innovation threw his arms up in despair: 'Even though they are sponsoring the event, they actually don't take action and they still don't work with any fintech. Why?'.

See below some final take-aways for having a creative and innovation organisation, combining the reflections discussed above about creativity and innovation at both individual and organisational levels.

1. **Have a great CEO and senior team, who truly believe in and nurture the concepts of innovation and entrepreneurialism.**
2. **Hire for the right people rather than trying to change the culture.**
3. **Do stuff – Act – Try.**
4. **Create a structure that allows creativity and innovation to flow.**
5. **Realise that innovation and creativity is above all, about people.**

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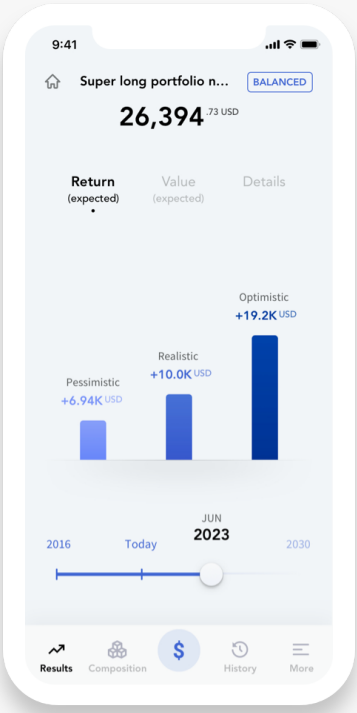

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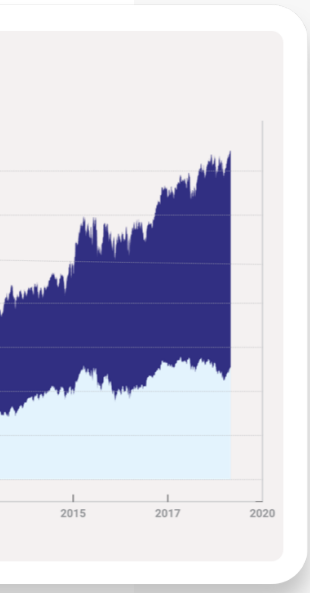

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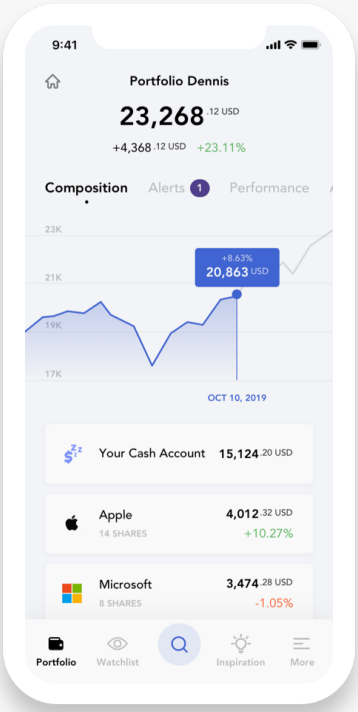

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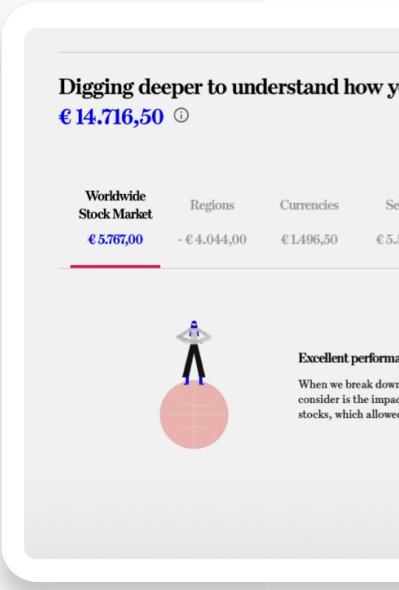

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