Failure in Innovation: Is There Such a Thing?

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Setting the Scene

Failure. In the context of innovation this is an interesting concept, one that has different connotations and different implications to most other contexts. Indeed, whereas in most contexts failure is something bad, to be avoided at all cost, in the context of innovation failure is considered to be not only a necessary evil but often a precondition for success and a whole host of books has been written on this topic, many of them in recent years (e.g. Danner & Coopersmith, 2015; Heath, 2009; Maxwell, 2007; Tarkenton & Woren, 2015; Weinzimmer & McConoughey, 2012). As Charles Kettering, an American inventor, engineer, businessman, holder of 186 patents, founder of Delco, and head of research at General Motors from 1920 to 1947, suggested in the earlier decades of the last century: *"99 percent of success is built on failure."* More recently, Elon Musk, CEO of SpaceX and Tesla Motors, echoed the sentiment declaring that: *"If things are not failing you are not innovating enough."* So, failure in innovation is seen to be essential to achieving success in innovation—or as Thomas Watson, founder of IBM once put it: *"The way to succeed is to double your failure rate."*

If that is so, all should be well in the world of innovation as there are indications that failures rates lie between 75% to even 90%, depending on which study you look at:

- Ernst and Young (2011) reported that out of every 100 new consumer products that come to market, the failure rate is typically between 80% and 90%. Whereby failure is defined as not realising the anticipated benefits agreed before launch.
- A Nielsen report (Hall & Wengel, 2014) is quoted saying that three in four Fast Moving Consumer Goods launches fail within a year.

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- Of every seven new product/service projects, about four enter development, 1.5 are launched, and only one succeeds (Edgett, 2011).

Yet not all is well. A study by Accenture (Lacy & Hayward, 2016) indicates that innovation remains the top two strategic priority. A PriceWaterhouseCoopers study (Percival, Shelton, & Andrews, 2013) of 246 CEOs couldn't be clearer: innovation today is a key driver of organic growth for all companies regardless of sector or geography. A study conducted by The Conference Board Global in 2015 indicates that innovation is also one of the top three challenges CEOs are facing. Accenture declare in their 2015 report that: *"US executives are unrealistic in believing they have the capabilities they need to achieve their bold innovation goals. The truth is that most struggle to generate the returns they seek from their innovation investments."* (Alon & Elron, 2015, p. 3).

Failure rates in innovation remain high AND satisfaction with innovation performance does not really seem to improve. Maybe innovation does not fail enough? Or perhaps it is the wrong kind of failure? Perhaps it is fear of failure, not failure itself, that needs to be looked at? Fear is widely acknowledged to be the greatest obstacles to innovation (e.g. Accountempts, 2012; BPI Network, 2015).[1]

Of course, one answer to failure could be: let's not innovate. No innovation, no fear, no failure. While this might sound safe and therefore tempting, it is not an option in the twenty-first century. As Klaus Schwab, founder and executive chairman of the World Economic Forum, describes in an interview with The Guardian in 2016: *"The changes are so profound that, from the perspective of human history, there has never been a time of greater promise or potential peril. My concern, however, is that decision-makers are too often caught in traditional, linear (and non-disruptive) thinking or too absorbed by immediate concerns to think strategically about the forces of disruption and innovation shaping our future."* Linear thinking, entirely sufficient in the twentieth century, no longer works in a context that is characterised by volatility, uncertainty, complexity and ambiguity (VUCA). Such a context requires adaptability, experimentation, and a willingness to "embrace the path of change to create value" which is my definition of innovation. To speak with the words of Jim Whitehurst, CEO at Red Hat and previously COO of Delta Air Lines, *"Today, a culture of innovation is a strong indicator of an*

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[1]Interestingly, my PhD (1994–1998) was motivated by the insight that, despite all the insights into factors underlying success and failure in new product development, as it was called at the time, success rates did not really seem to improve! Trigger was the booklet "The new product" by D. Karger published in 1960 in which the drivers for success and failure were almost identical those identified in 'latest research' in the early 1990s. The conclusion I reached based on three case studies from different contexts was, that a key facilitator of failure are our habits, and the assumptions we make when embarking on new projects. We tend to ignore the differences and complexities of projects, using accustomed tools, approaches, processes, and generally the people who have worked on the last five projects to succeed with something that has not done before, and may require an entirely different setup.
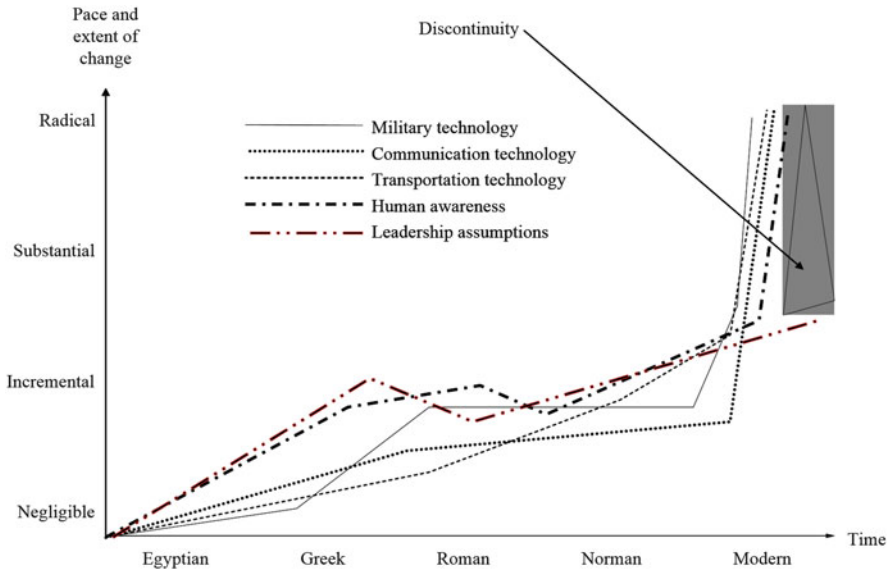
Fig. 1 Accelerating rate of change (Obolensky, 2015)

organisation's ability to weather the kinds of constant disruption nearly every industry seems to be experiencing" (Whitehurst, 2016).

Hence, the particular conditions of the twenty-first century—which I will elaborate upon in the next section—make innovation an absolute necessity for any organisation that wants to survive. Logic declares that innovation does not happen without failure. This means that organisations that want to survive in today's context need to learn to love failure, and find a way to minimise fear.

I the next section I will present arguments that support the claim about the unprecedented nature of the twenty-first century which will lead to the conclusion that innovation is indeed a key necessity. This will be followed by an excursion into the topic of fear, before delving into why I believe that, even if there is no such thing as failure when innovating, there still is failure in the context of innovation. The chapter will conclude with some thought on how to minimise failure of innovation, while acknowledging that it will remain a necessary part of it.

Want to Succeed in the Twenty-First Century? Innovate!

The twenty-first century is like nothing we have experienced before. Business are struggling to find their way in a world that is characterised by volatility, uncertainty, complexity and ambiguity, VUCA for short. Five C's drive this challenging context:

- **C**hange is gathering pace—the rate at which new things are being introduced has increased dramatically since the turn of the millennium (see Fig. 1).

- **C**onnectivity is unlimited—meaning that time and space have lost their relevance. A report by Business Insider from (Camhi, 2015) anticipates that by 2020 34 billion devices will be connected to the internet, up from 10 billion in 2015. It is worth keeping in mind that the world's population by 2020 is anticipated to be 7–8 billion.
- **C**onvergence is happening everywhere—boundaries are not shifting but blurring and disappearing altogether. Think about your smart phone which was introduced a mere 10 years ago, in 2007. How many devices you would have needed 10 years ago to match its functionality. How much or little are your personal and professional lives separated? Do you answer emails in the evening and during holidays? When you buy a new smartphone, are you using a product or a service? When you go to the supermarket, do you buy your food, or also your banking and insurance products? Hierarchies are flattening, the boss in one team might be a supporting member in another.
- **C**onsumers are changing—they are better informed, more demanding, and more fickle than ever before. Accenture described one aspect of such new consumers in their 2013 report as: *"Consumers make choices not only to improve their material welfare. They increasingly do so to improve their physical and mental well-being."* (Nunes, Yardley, & Spelman, 2013, p. 3). Interestingly, Accenture's Global Outlook Study 2016 is titled, "Why green is the new gold", indicating that sustainability is playing an increasing role in purchasing decisions today.
- **C**hallenges to humanity are unprecedented—be it access to fresh water or sustainable sources of energy, feeding and housing a population of soon to be 10 billion, or a loss in biodiversity and natural resources. Overcoming challenges has always been part of human history, yet never on this scale, on so many fronts, affecting so many people, and with a good chance of creating havoc to the planet with irreversible consequences unless we plan to address them.

These five Cs also result in a sixth: **c**omplexity, whereby it is important to differentiate between "complicated" and "complex" systems. Looking at Fig. 2 the system on the left is complicated, the system on the right is complex. It is not just semantics. A complicated system we can understand if we study it, analyse it, and take it apart. What is more, based on its past behaviour we can predict and influence how it will behave in future. In contrast, however long we study and analyse a complex system, however much insight we gain into its past behaviour, we will not be able to predict how it will behave in future. Digital connectivity has transformed a complicated system into a complex one, facilitating unlimited and unpredictable connections of people and things, in real-time.

The latter is not without significance. If the slower pace and slower flow of information, ideas and implementation of the past made a sequential approach acceptable, the VUCA context we are facing now has not only reduced the timespan organisations can survive without innovating dramatically, it has also made concurrency a necessity (see Fig. 3).
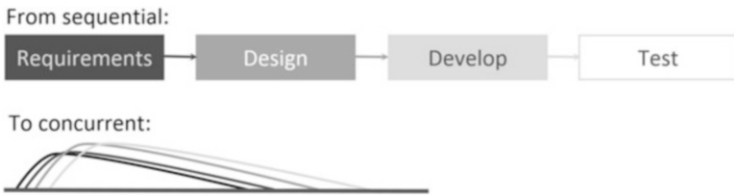
Fig. 2 Complicated versus complex

Fig. 3 From sequentiality to concurrency

The only way for an organisation to survive, let alone thrive, in such a context is to innovate. Not only around their products and services, even more so around their business models, organisational structures, leadership styles and the way they interact with the outside world.

A Word on Fear

In principal, the imperative to innovate is understood in most organisations. In principal, the fact that innovation cannot come without (some) failure is also understood.[2] So, is there a problem? If there were satisfaction with innovation performance, there would not be. If failure in innovation would truly translate into learning, there would not be. If we would see the kind and level of innovation the world needs right now, there would not be. Yet there is dissatisfaction, there is not enough learning, and we do not have (enough) of the kind of innovation that makes our world more successful and sustainable.

Enter: fear. As pointed out at the outset, this emotion[3] is considered to be the greatest obstacle to innovation, and there is a lot of potential for fear in the context of innovation, to name but the most obvious:

- Fear of damaging one's reputation/loss of face when asking 'silly' questions—yet it is often the seemingly silly question that unearths deep-set assumptions and habits that are no longer appropriate; to find meaningful questions/challenges is even more difficult than finding meaningful answers. This is expressed in the Einstein quote that *"The mere formulation of a problem is far more often essential than its solution, which may be merely a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle requires creative imagination and marks real advantages in science."*
- Fear of being ridiculed/loss of prestige when I have a crazy idea—yet Einstein pointed out that: *"If an idea is not crazy at the outset there is no hope for it."*
- Fear of redundancy/loss of position as a consequence of the innovation—to innovate is to change the status quo. The more radical the innovation the greater the change and the likelihood that it might affect me. Yet Buckminster Fuller said: *"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."*

Hilary and Vyas (2016) identified six signs of organisation running on fear: (1) An absence of frank and open dialogue, (2) a resistance to participate, for fear of being ridiculed, overlooked or "shot down", (3) only notional alignment ("lip-service") on action plans, (4) a partial or total reluctance to pass any bad news upwards, (5) a culture of "going through the motions" without any real engagement, and (6) a focus on salient but unlikely catastrophic outcomes.

Such fear is generally not expressed and acknowledged; showing such emotions in the workplace is generally not encouraged, not least: we are all rational beings,

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[2]See also Kunert and Staar (2018) and Kunert and von der Weth (2018).

[3]Wikipedia defines fear as "a feeling induced by perceived danger or threat that occurs in certain types of organisms, which causes a change in metabolic and organ functions and ultimately a change in behaviour, such as fleeing, hiding, or freezing from perceived traumatic events."
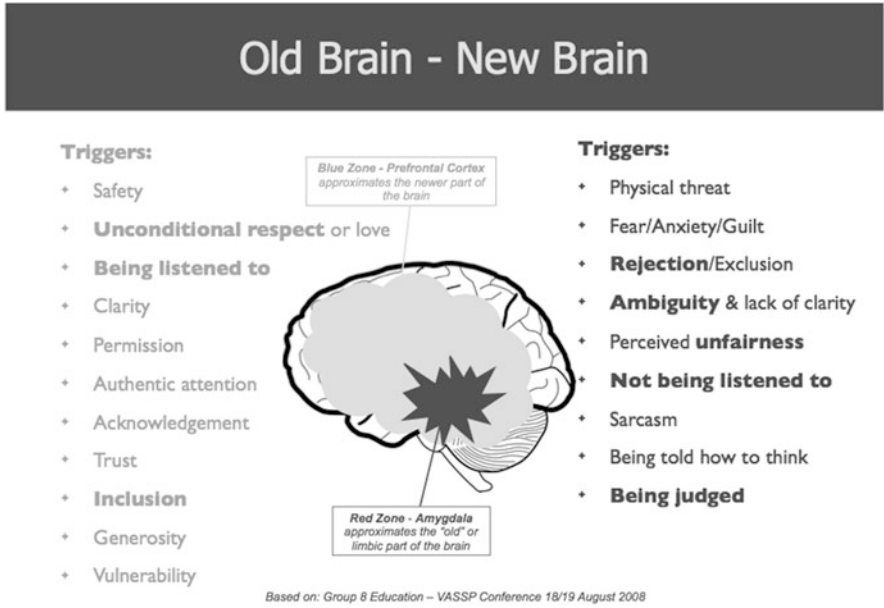
Fig. 4 Old brain—new brain

right? Instead those experiencing fear often resort to micro-management and becoming more dictatorial, as this gives them the impression of being in control, which in turn helps to suppress fear.

In order to explain the role of fear in the context of innovation I will make a (simplified, probably even simplistic) excursion into neuroscience. For our purpose, we simply divide our brain into two parts: the "old" or limbic part of the brain, called amygdala, which I will refer to as the "red zone", and the "new" part of our brain, the prefrontal cortex, which I will refer to as the "blue zone" (see Fig. 4). It is important to know that the amount of energy available to our brain is fixed, and that energy is available to either the red zone or the blue; it cannot be in both parts at the same time.

Whether the energy is in the blue or the red part of our brain depends on what we experience at that moment. We are "in the red zone" when we feel physically threatened, experience fear, anxiety or guilt if we perceive a lack of clarity, being judged or treated unfairly, feeling rejection or exclusion, or are not listened to and just told how to think. All of this triggers the "fight or flight" reaction, where the body releases stress hormones, increases our heart rate, and increases blood flow to the skeletal muscles. The red zone is focused on "self", it is the seat of anger, fear, and depression; it is about impulses and desires; it is where "low-order learning" takes place. This means it is about memorising rather than applying knowledge, and importantly for innovation, if we are "in the red" we cannot reflect or consider alternatives: we are resisting change and fall back on what we know to work.

Interestingly, very often the mere suggestion of a change—and what is innovation but change—triggers the red zone. Why is that? We seem to have an education system that conveys a world view where there is but one right answer. Unless we get that one right answer we fail, we feel stupid, we might be laughed at. It might well be that when we are starting our educational journey and learning reading, writing and maths there truly is often only one right answer, for example, not much arguing with the fact that six times six is 36. How to spell a word seems to be the same—though those familiar with American and British English know that how you spell a word can depend on the national context, and the meaning of a word can chance in embarrassing ways. When an American says "I am pissed" he is in a very different emotional state to a Briton saying that he is pissed. Bottom line is, a "right or wrong" mentality is ingrained very early on. The deeply embedded search for the 'one right answer' causes problems in the context of innovation. If we believe there to be 'one right way', and someone suggests a change, does that not mean that we must have been wrong all along? How many of us become defensive when someone suggests to change how we do things or just asks us why we do them the way we do? No wonder we feel threatened by innovation, and our energy moves into the red zone, into the very place from where it is almost impossible to innovate.[4]

If we consider the key characteristics of the twenty-first century (volatile, uncertain, complex, ambiguous) it is not surprising that fear in organisations has emerged as a topic. Moving on to the blue zone, not surprising it is triggered by more or less by conditions to what gets us 'into the red'. We are in the blue zone when we feel safe, respected, trusted, loved, being listened to, getting authentic attention, being acknowledged and included, having clarity and permission, experiencing generosity, and where others show vulnerability. The blue zone is about reflection, managing our impulsive desires, it is the seat of affiliation, generosity and good will, and the home of imagination and creativity. When we are "in the blue", high-order learning takes place, the kind of learning where we apply knowledge in different contexts, and combine things to create something new. Given that much innovation happens by connecting previously unconnected bodies of knowledge, blue is definitely the zone to be in for innovation.

There is another driver of fear in organisations. How many people in your organisation consider themselves to be highly creative and innovative? How many people are truly comfortable with the uncertainty, risk and ambiguity that comes with innovation? In most organisations it is not many. How do you think these people feel when challenged by their boss to be more creative and innovative? Where will the energy in the brains be, in the red or in the blue zone? The bottom line is, as long as we are fearful it will be difficult to innovate, and the fear is about something much more complex than just failure. If we want to innovate, which is a necessity in the twenty-first century, we need to find a way to acknowledge, and address the fear. Looking at failures in creating a context for innovation might be more helpful than looking at innovation failures.

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[4]See also Kunert and Staar (2018).

Failure? But Not As We Know It!

That not all innovation can succeed, hence that innovation will not come without failure, is a fact. However, in the context of innovating and innovation there are failures that, if addressed appropriately, could reduce the rate of innovation failure. If this seems illogical let me explain. Here some failures in the context of innovation that can and should be addressed:

- Failure to provide direction
- Failure to establish a shared definition
- Failure to ensure required resources are available
- Failure to experiment and push beyond the immediately obvious
- Failure to invite everyone
- Failure to ensure diversity
- Failure to mitigate risk

Failure to Provide Direction

Innovation is not the end in itself, it is a means to an end. This means that it is not enough to just call for more innovation or declare innovation to be one of the company values. Where innovation is to take us—the end—needs to be defined and made explicit. Otherwise people spend time developing ideas that are irrelevant and are then frustrated when their ideas are being rejected.[5] There are three aspects to this.

First, providing an engaging and inspirational vision, such as 'putting man on the moon', is a powerful tool to stimulate innovation, without having to mention the i-word. The best vision describes the end result, and leaves the path of how to get there open. This way there is room for experimentation and exploration as well as an opportunity for each individual to judge whether what they do contributes to getting the organisation where it wants to be.

Second, not all innovation is created equal. The focus should not be on how innovative something is but how much value it creates—and not only financial value but value across the triple bottom line. If you believe focusing on the bottom line is enough, consider the results of the 2016 Millennial study by Deloitte (2016) which found that for six in ten millennials, 'a sense of purpose' influences the decision whether or not to take a job. It goes further: almost 50% of survey participants declined work assignments that were contradicting their personal values.

Third, another aspect that needs to be made explicit is what level and what type of innovation is desired. Is it incremental innovation, radical innovation or even

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[5]If you want to get an impression what innovation without direction looks like I recommend watching the 'race of people without a sense of direction' from the Silly Olympics by Monty Python.

transformational innovation? Is it innovation around products, services, processes, business models, how we work and collaborate?

A failure to provide direction will lead to the waste of resources, confusion and frustration as well as the loss of employee enthusiasm and engagement.

Case Study

A multinational medical organisation decided to accelerate the pace on their innovation journey. As a first step they thought about what they really wanted to stand for, as an organisation, which led to the creation of a new mission statement: Helping people regain their lives. A young and assertive project manager was then asked to check all projects in the company's development portfolio against that new mission. Her recommendation: out of 89 kill all but 16. This was reduced even further, first to 11, then four—until at last only two remained. That kind of action requires serious courage and supporting action that prevents the researchers who had been working on the projects to feel rejected. Here a couple of things they did:

- The R&D Director set a positive tone by saying: *"I'd rather they (the R&D people) do not anything at all than destroy value."*
- They send the R&D team out to visit customers (something that had not happened before) and attend training courses.
- The leaders of projects that got killed actually moved on to better projects; they also got a note from senior management basically saying, 'thank you for not wasting company resources'.
- Bonuses we paid based on senior management's understanding that bonuses are not given for a positive decision, e.g. a go-ahead decision, but for the right decisions. Killing projects that do not create value that it is the right decision.

Failure to Establish a Shared Definition

Following on from the first point, in addition to providing direction it is necessary to develop definitions of what different types and levels of innovation look like to ensure everyone in the organisation (and beyond if involved in the innovation process) has a shared understanding of what is expected. This is important as what is considered to be incremental and what radical varies, both from the perspective of the individual (depending on their comfort with risk and uncertainty), and whether it is viewed from the perspective of the organisation, or the customer/user. There is no 'absolute' definition of different levels of innovation, what matters is that the definition of different types and levels of innovation is shared amongst those who innovate together, and relevant and meaningful in the context of the particular organisation in question. To ensure shared understanding it is best to illustrate different types and levels through real life examples, ideally from within the

organisation. A failure to define what is meant by different types and levels of innovation most likely leads to frustration and conflict.

Failure to Ensure Required Resources Are Available

The call for innovation often seems to come with the unspoken request to do it on top of the day job, without any additional resources, ideally without changing anything. This is not likely to happen. This seems confirmed by insights from the 2015 MindMatters study of innovation worker that revealed that four of five people who took the survey (81%) said their firms do not have the resources needed to fully pursue the innovations and new ideas capable of keeping their companies ahead in the competitive global marketplace. If the call for innovation is serious, this needs to be reflected in making resources available, from appropriate skill-sets, to time, to finances. Failure to provide appropriate and adequate resources leads to frustration, delays, and inferior results which increases chances for failure.

Failure to Experiment and Push Beyond the Immediately Obvious

Linked to the issue of resource availability, yet also a question of mindset, is a failure to experiment. That we often focus on finding answers before we have verified that the question we are asking actually matters is one challenge. Another challenge is our tendency to run with the first answer or approach that seems feasible. In a subtle way, our belief that there is one right answer comes into play: if we have an answer that works, surely that is the right one. We have one (the) answer, why keep looking for another one? Yet it is often when we have exhausted the repertoire of immediate and therefore often obvious answers that true innovation can happen. To start again when you would normally give up is what leads to real innovation. Failure to experiment limits chances to create exciting, radically different innovation and is more likely to lead to failure.

Failure to Capture Learning

One important aspect of experimentation, as well as failure, is to ensure that the different experiments and their results are recorded so we and other can benefit from the insights that these experiments (or failure) have generated at a later time. Instead of identifying learning many organisations focus on identifying whom to blame instead. As Edmondson (2011) points out: *"When I ask executives to consider this spectrum and then to estimate how many of the failures in their organisations are truly blameworthy, their answers are usually in single digits—perhaps 2% to 5%. But when I ask how many are treated as blameworthy, they say (after a pause or a laugh) 70% to 90%. The unfortunate consequence is that many failures go unreported and their lessons are lost."* Failure to capture learning from experiments and

failure opens the door for the same mistakes and failures being repeated, and encourages a blame culture.

Failure to Invite Everyone

If we go back a couple of decades, the prevailing option was: the boss knows best, ideas come from a select few, you have to be an expert to contribute. Today we know that nothing could be further from the truth. What has become known as 'open innovation' is the gateway to successful innovation. The fact that most innovation happens by connecting and combining previously unconnected bodies of knowledge has already been mentioned. It is supported by findings of Larry Keeley of the US-based innovation consultancy Doblin, who suggests that 98% of successful innovations, including many we would describe as 'breakthroughs', brought to market over the last 10 years were based on existing knowledge explored and put together in new ways; only the 2% remainder being based on new knowledge (Keeley, Walters, Pikkel, & Quinn, 2013).

> **Case Study**
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> A large US-based conglomerate decided to kick-start they innovation activities by establishing an online idea management system. While there was initially a debate about who should be allowed access, the CEO was please that they decided in the end to give access to everyone, everywhere. The Chief Innovation Officer said in an interview: *"What we learned from the submissions we received is the following: (1) the more people you invite the better the output, and the higher the achievements; (2) when we looked at where the best, most powerful ideas had come from we could not find any link to either a particular geographical area, nor to a particular level within the organisation's hierarchy, nor to one particular function. There were no hot spots for 'good ideas'. The ideas were rather distributed across all dimensions. The 'winners' had only one thing in common: they were all quite exceptional. So we were pleased we asked everyone, otherwise we would have missed out on some fantastic opportunities."*

Most interesting though in this context is that the solutions for difficult challenges hardly ever come from the knowledge domain in which they originate. Experts from within the domain have often preconceived ideas of what is and isn't possible and reject unusual solutions. Yet to quote Einstein again: *"We cannot solve our problems with the same thinking we used when we created them."* Failure to involve everyone leads to suboptimal results, missing out on opportunities, and identifying truly different solutions.

Failure to Ensure Diversity

Connecting to the above is something a colleague of mine once said, *"If you have an innovation team of ten who all think alike you have a cost savings opportunity of nine."* In order to innovate we need someone to challenge our assumptions, question why we do the things the way we do, and ask the silly questions we as 'experts' would be too embarrassed to ask. Yet most of us prefer to surround ourselves with likeminded people to whom we do not need to explain why and how we do things, where we have fewer challenges through misunderstandings that arise from associating different meaning with the same words. Working in diversity is not easy and does not happen on its own accord, but investing in making it work is definitely worth the effort. Failure to ensure diversity leads to perpetuating the status quo and risks failure due to group-think.[6]

Failure to Mitigate Risk

Risk and uncertainty are invariably part of innovation,[7] yet there are ways to mitigate risk and limit the scope of potential failure. Risk can be mitigated by up-front experimentation. Risk can be mitigated by committing to a next step in a project rather than the entire project. Risk can be mitigated by collaborating and sharing the risk. Risk can be mitigated by a staged introduction rather than a blanket roll-out of an innovation. Risk can be mitigated by giving up the search for the 'one right answer'. A failure to mitigate risk enhances risk of failure, and the scope of it.

Looking back over the list of failures laid out above you may notice that many of these failures are likely to push individuals' energy in to the red zone, activating fear, or causing us to resort to proven approaches and solution. Given that the above failures are quite common, it is perhaps not surprising that only 5% of workers feel highly motivated to innovate (MindMatters, 2015). These failures reduce potential and impact of innovation, often facilitating the very failure they aim to avoid.

And if you take another look, it might occur to you that most of the above are, in the end, failures of leadership. It is not for nothing that McKinsey noted in their 2007 survey of global business leaders: *"Leadership is the best predictor of innovation performance."* This is echoed in a note by Soken and Barnes (2014), which also confirms some of the other failures above: *"Leadership and management behaviours that engender fear, a lack of focus and communication about*

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[6]Wikipedia defines group-think as *"a psychological phenomenon that occurs within a group of people in which the desire for harmony or conformity in the group results in an irrational or dysfunctional decision-making outcome."*

[7]See also Kunert and von der Weth (2018).

organisational innovation strategy, a paucity of resources (time, money, encouragement) are among the factors that make innovation less likely or less successful."[8]

Tips and Tools for Minimising Failure

So what can leaders do to embrace and minimise failure of and in innovation? First measures are to avoid the failures listed in the section above, in fact, all of them can be turned into recommendations of what to do to minimise failure. Becoming aware that these failures exist, and what their consequences are, is the most important first step. Only when one is aware of something one can start to take corrective action. There are a few more tools I would like to mention here, each will be explained in a bit more detail:

- Consider context
- Collaborate
- Embrace the concept of sunk cost
- Stage commitment
- Prototype
- Celebrate failure

Consider Context

What works well in one context does not necessarily work equally well or in the same way in another; what works well today might not necessarily work well tomorrow. For example, the context in which incremental innovation thrives is very different from a context that supports radical innovation. Different types and levels of innovation thrive in different conditions, with different skill sets, supported by different processes, with different selection and decision criteria, and are most likely to succeed if all is aligned and supporting each other. As most organisations are set up to support incremental innovation it is not surprising that much radical innovation fails or is killed. The Peter Drucker statement that *"There is not only one right organisation. The right organisation is the organisation that fits the task."* (Drucker, 2007) applies equally to the context of projects and innovation.

Collaborate

Diversity, referred to in the section above, refers to those involved in a particular innovation. Collaboration here refers to working across functions, across business units, with customers and suppliers, and even with competitors. Collaboration is one

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[8]See also Moccia (2018).

of the most powerful tools in the innovation armoury. To collaborate means to share risks and costs, it can bring in additional resources and complementary skills (diversity/fresh perspective), it can also ease access into new markets. If diversity already helps counter-balance group-think, an outsider perspective is even more likely to prevent it. Isabelle Royer found in her research that innovation failure was often caused by the organisation's deeply held belief that the project will succeed: *"Hardly the product of managerial incompetence or entrenched bureaucracy, the failures I've examined resulted, ironically, from a fervent and widespread belief among managers in the inevitability of their projects' ultimate success. This sentiment typically originates, naturally enough, with a project's champion; it then spreads throughout the organisation, often to the highest levels, reinforcing itself each step of the way. The result is what I call collective belief, and it can lead an otherwise rational organisation into some very irrational behaviour."* (Royer, 2003).

An interesting side effect of external collaboration can be that it helps to keep radical innovation alive, the kind of innovation that is often the first to be killed when times get tough. It is more difficult to pull out of a partnership deal than kill an internal project quietly. As Ernst & Young found in their 2014 Agile Innovation Study: *"50% [of participants] say failure to collaborate puts them at a disadvantage."* Collaboration is innovation's secret weapon (cf. von Stamm, 2004).

Case Study

Back in the early 2000s the innovation manager of a UK-based retail organisation decided to explore and develop the emerging RFID (radio frequency identification) technology to improve stock-keeping and supply chain management. At the time there was quite a bit of controversy around the technology, mostly related to privacy concerns.

In addition to having to counter the public's scepticism and aversion the innovation manager had to fight internal battle to keep the project alive which was quite radical for time and context. His biggest trump card was collaboration and part-funding by the UK government which was interested in progressing the technology. Killing a project that had considerable attention outside the organisation would have been much more difficult than killing a project that was run entirely in-house.

Embrace the Concept of 'Sunk Cost'

The essence of the 'sunk cost' concept is not to throw good money after bad—which is always a tough decision and a difficult one as another quote from Royer (2003) illustrates, *". . . as a project unfolds and investments increase, this faith [that the project will eventually succeed] has to be increasingly tested against the data. Indeed, the challenge for managers in the 'can-do' culture of business is to*

distinguish between belief as a key driver of success—and belief as something that can blind managers to a project's ultimate failure."

Staged Commitment

The principal recommendation here is, the more radical the project the more it is advisable to apply staged funding, an approach that is of course widely spread in venture funding. Not only are there different investment stages such as Series A (for proof of principle), Series B (for early stage growth), and Series C, D etc for later rounds of growth funding, those providing funding at these different stages are often not the same (perhaps there is an interesting lesson to be learned for corporations).

Creating break-points for projects was also the driving principle behind what was originally called the 'phased review process' and originated in the chemical industry in the 1940s and picked up by NASA in the 1960s (Di Biase, 2015). Today such approach is better known under the term 'stage-gate' process.

Case Study

A case example that may be of interest in the context also stems from the aforementioned UK-based medical devices company. As part of their innovation journey they, as most other organisations, introduced a stage-gate process. In most companies the gate meetings are about the team defending what they have done, hoping that senior management will sign them off to go to the next stage. Senior management in this company took a different approach. They felt that, having given the project the green light in the first place, it was their responsibility to provide the team will all the support it needed. The responsibility for the decision of whether to proceed, pause or to discontinue was given to the team whereby a key criterium was: does the project support our mission or not.

Prototype

Indeed, if collaboration is innovation's secret weapon, then prototyping is a plain necessity, not least as prototyping is about creating a reality that does not (yet) exist. By making ideas and concepts tangible they become easier to understand, and it is easier to discuss and debate potential, alternatives, challenges. It helps avoid misunderstandings and facilitates shared understanding. Interestingly, the German word for understanding—begreifen—literally translated means to grab hold of, i.e. being able to touch and therefore understand. Tom Peters famously said: *"On a list of, say, five things would-be-innovators should do, working at creating a full-blown culture of rapid prototyping surely merits inclusion."* (Peters, 1999).

Celebrate Failure

To come full circle in this chapter, in the context of innovation this is an interesting concept, one that has different connotations and different implications to most other contexts. So don't try to brush innovation failures under the carpet. Give them the limelight and put them under the microscope instead! You may even want to go as far as celebrating failure—as it is said that companies such as 3M do and Hewlett Packard did just that. One thing it would certainly do: take the stigma of failing away. One thing we have certainly come to realise is that much of what is considered innovation failure becomes and essential stepping stone to success.[9]

Applying these tools, together with avoiding the failures outlines in the previous section should allow organisations to take a more positive outlook on failure, and by doing so minimise the impact of the real culprit: the underlying fear.

Closing Thoughts

I would like to close with the (hopefully) obvious: innovation failure is not about making stupid mistakes, nor about condoling shoddiness or tolerating carelessness. It is about accepting failure that happens despite all precautions having been taken, that has happened with the full acknowledgement and consideration of the risks involved, that is driven by courageous decisions built on deep insight and understanding.[10] As Edward Dowden, Irish poet, critic and educator (1843–1913) once said: *"Sometimes a noble failure serves the world as faithfully as distinguished success."* So, if you want to thrive in the twenty-first century, understand fear, love (nobel) failure, and innovate.

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[9]For "5 Examples of Failure that Resulted in Innovation" you may want to visit. http://blog.innocentive.com/2013/10/17/5-examples-of-failure-that-resulted-in-innovation

[10]Please note that I have not used 'justified by data' as this will be rather difficult, sometimes impossible, certainly if it is radical innovation.

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Online Resources

On the book website, additional content on failure is provided. Please visit: www.artop.de/en/failure