TRANSFORMING

LEGACY

ORGANIZATIONS

TURN YOUR ESTABLISHED

BUSINESS INTO AN

INNOVATION CHAMPION

TO WIN THE FUTURE

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INTRODUCTION

We live in the age of the entrepreneurs. New startups seem to appear out of nowhere and challenge not only established companies, but entire industries. Where unicorns were once mythical creatures, the word unicorn now refers to the startups that have a value of at least one billion dollars, and, at the time of writing this, there are more than 260 of them worldwide.[1] In 2018 alone, 53 unicorns were added to the list. You have probably never heard of the most valuable one. It's called ByteDance and it comes from China; it is a kind of a mix between Google and Facebook, and it is valued at $75 billion.[2] The fastest unicorn, the software company Uptake, took only 236 days to reach billion-dollar status from their first invested dollar.[3] And the Nordic countries, where I come from, actually make up the largest unicorn region in the world, after Silicon Valley, in large part thanks to Stockholm which represents success stories like Spotify, Klarna, and King.[4]

Not long ago, young people dreamed of becoming doctors and lawyers. Today, an increasing number of youths are dreaming of becoming entrepreneurs and creating companies that can change the world – just like the new heroes Elon Musk (Tesla), Larry Page (Google) or Jeff Bezos (Amazon). The whole unicorn wave is so great that it has moved into the mass market. So if you have children between the ages of 8–10 who want teddy bears, suits and clothes from H&M with unicorns on them, their preferences are examples of how the startup wave has spread into our everyday life. The established organizations, those of a certain size and age (sometimes called legacy organizations) are becoming stressed about entrepreneurs' success and can be quoted as saying that their greatest fear is not their closest major competitors; rather, they fear the startups which, although they live in metaphorical garages and have hardly taken off, have an innovation power that established organizations could only dream of possessing.

But no matter how good things go for the innovative startups, how many new success stories we hear, and how much space they take up in the media, there's both good and bad news in terms of established companies' innovation power. The bad news is that innovation is much more difficult in established organizations than it is in startups. The most important job for a startup is to focus on its (probably one) product, and to subsequently scale-up. The established organizations have to

entertain many more considerations with their complicated product portfolios and business structures. The good news, however, is that nobody is more likely to succeed in their innovation efforts than established organizations. Because, unlike startups, established organizations have all the resources. They have money, customers, data, employees, suppliers, partners, and infrastructure, which put them in a far better position to transform new ideas into concrete value-creating, successful services. Startups have very few of these tools.

Of all startups, 70% fail within approximately 20 months of their first venture round[5] and there is an overall greater risk of being hit by lightning (about 1: 700,000) than there is of creating a unicorn. So when the big, established players are terrified of entrepreneurs, it's because they have not figured out how they can beat the startup in its own game: innovation.

This book's thesis is that established organizations have every opportunity to become the victors of the future. But to achieve this, they need to create a future-proof innovation design or, in other words, to put the right strategies in place and to develop the necessary processes to drive internal and external organizational innovation. The method for this is not to copy startups, because innovation in a startup is completely different from innovation in an established organization. However, if you look carefully at what the big, established players are doing right in

terms of innovation, you can identify a number of patterns that point towards what the right innovation design looks like, i.e. the design that can create value across industries. In the following, I will be clarifying these patterns.

I have identified the most important of these patterns in the work and research I've done over the past 20 years in both established businesses and startups across the globe, in hundreds of case analyses from world leading companies, in global market analyses, in basic research on innovation, culture, and change processes, as well as through interviews with key figures from a number of leading international companies. In my research, I have not met one singular established organization that has figured it all out, and which could therefore serve as an example from which to simply copy best practices. Some of the companies that get the closest to this level are organizations like Amazon, Google, and Apple, which are sometimes erroneously referred to as startups, even though each of these companies has been around for more than 20 years – Apple has even been around for 40. They are characterized by having reinvented themselves several times, a crucial characteristic of the established organizations that we return to. But there is also much to learn from companies with an even longer history: the Danish water pump manufacturer Grundfos, the North American Fortune 40 DIY chain Lowe's, the leading logistics company Maersk, the US production giant GE, and Japan's no. 1 airline ANA.

Before we look into what these companies are doing well, and what other large and less-established organizations could learn from, we need to define a few things. What do I really mean when I write 'innovation' and 'innovation design'? Innovation is the act of creating something new and having it materialize. It could, for example, involve creating direct market-oriented products or services, but it could also be the creation of new internal processes or production methods. Innovation is not limited to market-oriented initiatives, and therefore innovation is not something that is only relevant to product development teams; rather, it is relevant to the entire organization.

However, simply thinking fresh and having ideas is not enough. The ideas should be realizable. That is to say, they must result in specific products, services, business models, or processes. Too many times, you see organizations which set up so-called innovation initiatives, but do not follow through, which results in the experience that you, most likely, know well: you get many great ideas, but have a hard time turning them into concrete value. The ideas do not materialize because the organization lacks a well-functioning innovation design. According to the *Oxford Dictionary*, design is defined as 'the art or the action of inventing and creating a plan or sketch of something before executing on it'.[6] And innovation design is exactly that: A plan for how to shape your innovations, so that you don't leave its success to chance. With an innovation design, you actually have

a plan, a design, for how to go from idea to development to rollout. Established organizations are often world champions in planning when it comes to traditional product development, but when it comes to innovation in a modern age, they need new rules of engagement. As will be evident in the book, many organizations commit the mistake of engaging in innovation as if it were a homogeneous thing that should be approached in the same way every time, regardless of its purpose. But innovation in established organizations must actually be divided into three different tracks: optimizing, augmenting, and mutating innovation. All three are important. There is no one singular type of innovation that is better than others. And to complicate matters further, organizations must execute all three types of innovation at the same time.

The first track is optimizing innovation. This type of innovation is the majority of what established organizations already do today. And they must continue doing so. Optimizing innovation is, simply put, the extra blade on the razor. When Gillette launches a new razor that has not just three, but four blades, thus ensuring an even better, closer, and more comfortable shave, only to announce one or two years later that they are now launching a razor that has not only four, but five blades – so you get an even better, closer, and more comfortable shave – that is optimizing innovation. This is where the established player reigns. No startup with so much as a modicum of sense

would even try to beat the established company in that type of innovation. Continuous optimization of current things, both on the operational aspect and customer aspect, is good and important. In the short term. It pays the rent. But it's far from being enough if you want to continue being a leader even just 3–5 years from now, because there are limits to how many blades a razor needs, and each additional blade generates a bit less value than the previous one.

Therefore, the established players must also focus on the second track: augmenting innovation. If you look at the digital transformation projects that more and more organizations are initiating, they can typically be characterized as augmenting innovation. In the first instance, it is about upgrading the organizations and their core services and processes from analogue to digital. Or, if you're born digital, you've probably had to work on augmentation to become 'mobile first'. Perhaps you have even entered the next augmenting phase, which involves implementing artificial intelligence at the heart of your organization. To become 'AI first'. These problems that need solving are not small matters. They require great technological advancements. And it's difficult. But the technology component may, in fact, be a minor part of the task. When it comes to augmenting innovation, the biggest challenge is probably culture. Because it is only if the established organizations manage to transform their cultures from status quo cultures, i.e. cultures where there is a

preference to maintain things as they are, into cultures full of incremental innovators who thrive in constant change (within certain limits) that they will have a shot at success.

To achieve success with augmenting innovation and to create the right culture, an organization needs to thoroughly understand its immune systems. That is to say, it knows the barriers that inhibit its innovative power in the form of the individual, organizational, and societal immune systems, which can either impede or support innovation. Augmenting innovation is crucial if you want success in the medium term.

After optimizing and augmenting innovation, an established organization needs to relate to the long term and innovate in the track that creates the potential for mutating innovation. The business that maintains, or exceeds, its level of success 10, 20, 30 years from now will have mutated and will look significantly different than it does today. It will have changed form. Whatever is currently the core of the company making up the majority of the top and bottom lines will not remain the same in the long run. Mutating innovation requires a bold focus on experimenting with that which is not currently understood. You have to work in a different way than when you're designing for augmenting innovation, because there is a big difference in whether you innovate to upgrade the core, as is done with augmenting innovation, or you're challenging the core as you do with mutating innovation.

The book is divided into three parts, each exploring how to tackle this task. The first part, 'Sharpen the Axe', focuses on how best to prepare for innovation as an established organization. There are a number of questions you should ask yourself. Questions that you have probably asked yourself before, but that you should revisit with fresh eyes. Because the answers to questions about which industry one is in, who one's competitors are, what drives the customers, and what the purpose of it all really is, are not as obvious as they once were. But it is crucial that you conduct your analyses and thoroughly explore those questions so that you can implement the right strategy, create the right innovation design, and put the right initiatives in motion.

The second part of the book focuses on the immune systems, the mechanisms, that protect the organizations and which operate around the clock to keep them healthy and stable, just as the body's immune system operates to keep the body healthy and stable. In a rapidly changing world, many of these defence mechanisms are no longer appropriate and therefore risk weakening organizations' innovation power. When talking about organizations' immune systems, there is a clear tendency to simply point out people's unwillingness to change. But this answer is too simplistic and sloppy. As we will see, there is not only an individual, but also organizational and societal immune systems that all organizations must understand and design their innovation efforts by.

In part three, we ultimately dive into the three different innovation tracks that organizations must master. We won't spend much time on optimizing innovation here, because the established organizations are already masters at this, and it is the area which works on the short-term horizon. However, we will be heavily examining augmenting innovation and exploring which tools are available for successfully upgrading the core of the organization and, not least, how to use cultural hacks to develop its culture in the desired direction, as a strong innovation culture is crucial to its success. Finally, we focus on the most experimental part where organizations work with mutating innovation and challenge their own core to explore which organization they should become in the long term.

When diving into a field and exploring it more closely, it is always revealed to have depths and nuances so numerous that the art of limitation becomes crucial. Each of the chapters in this book deserves a book of its own. And elements in each of the book chapters have had books written about themselves in different ways. But time is precious. It is perhaps our most precious resource, because once you have given your time to an activity, you cannot get it back. Therefore, the intention here has been to write an easy-to-read book that provides a relatively quick overview of how established organizations should

pursue innovation to create their future success. I personally love thin books. Books that I can read quickly, and which enable me to get an overview and draw value that relates to my specific needs. Then I can decide which elements of the book deserve my continued attention and which ones I will delve deeper into. Some of the focus areas of the book will, of course, be known to some readers. That's good. You can read through those parts more easily. Some of the sections will contain new material, at which point there is good reason to read the text more thoroughly. Some of the new material may even give so much food for thought that the reader wishes to explore further literature to obtain an even deeper understanding. Therefore, I have included an extensive bibliography with the background material that inspired me and helped create the foundation for this book.

Innovation is one of the things that established organizations talk most about, but also one of the things that they have the hardest time succeeding with. I hope this book will help to show how legacy organizations can innovate to become the champions of the future.

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December 2018
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NOTES

1. www.cbinsights.com/research/unicorn-startup-market-map.
2. https://exponentialview.us15.list-manage.com/track/click?u=eee7b8043 119f98544067854b&id=8654d2b47f&e=e88e438a60.
3. https://officechai.com/startups/fastest-unicorn-startups.
4. www.weforum.org/agenda/2017/10/why-does-sweden-produce-so-many-startups.
5. CB insights Feb 27 2018.
6. https://en.oxforddictionaries.com/definition/design.

FROM INNOVATION THEATRE TO INNOVATION CULTURE

Have you ever heard of a management team that goes to Silicon Valley to observe the natives in their natural habitats and decode their success strategies? Or maybe you've heard of big organizations that have invited a number of students to a hackathon, where they were going to disrupt the core product over the course of 24 hours, with the help of a large amount of (probably bad) data, pizzas, coffee, and Red Bull. Perhaps you have even encountered companies that have invested in an accelerator programme where they follow a group of startups over

a few months in the hope of reaching the achievements that the core organization itself struggles with. There is nothing wrong as such with the aforesaid initiatives, even though I am describing them with some irony. I use these initiatives myself, and I sometimes find them to be extremely valuable. However, there is a great risk that the initiatives do not create the value that organizations want and need. And there is a great risk that they give organizations a false sense of security. For far too often, experience expeditions, hackathons, and accelerator programmes end up being singular events that do not materialize into anything of real value. They end up becoming innovation theatre rather than creating innovation culture. The companies' innovation efforts wind up not being ambitious enough, and management does not incorporate the initiatives in their corporate strategies because they do not fully understand how huge the implications of accelerating technological development are on their organizations' need to innovate.

Where the world was once local and linear, and we humans got up and went to bed with the sun's rising and falling, moved within a demarcated geographical area, and interacted with a rather limited number of other people, reality looks different today. The world is no longer local and linear. It is global and exponential, thanks to the technological achievements that have largely been sustained by Moore's law.[1] This law, which is not a law of nature but an observation, is named after Gordon

Moore, co-founder of the computer chip manufacturer Intel. More than 50 years ago, he observed that there was a potential for computer power to double roughly every two years by placing more transistors in the microchips that give computers their computing power. The doublings that he pointed out were in fact what are called price and performance doublings, i.e. the amount of attainable processing power per $1000. These doublings have evolved to be exceedingly stable and have been the foundation of the development of computing power for more than 50 years and, thus, also the basis for the digitization we see in our businesses and societies, and the fantastic developments within networks, sensors, artificial intelligence, robotics, 3D printing, digital biology, and a whole host of other technologies. It can be hard to understand how significant the development is and how strong it really is. But here are a few examples that illustrate the pace.

In Alphabet's (Google's parent company) annual Founders' Letter in April 2018, Alphabet co-founder Sergey Brin described just how extreme price and performance development has been since Google's first year. In Google's first year of existence, the Pentium II processor they used to run their search engine had a performance of approximately 100 million so-called floating point operations per second. Today, it has 20 billion. That's an increase by factor of 200,000.[2] But, as he also wrote, even this amazing development would mean nothing if they or others

succeed in quantum computing experiments, which are receiving billion-dollar investments from Google as well as Microsoft, Facebook, Amazon, Alibaba, Tencent, and Softbank, just to name a few, along with major research efforts around the world, and even in Copenhagen, my own backyard, in the last few years. Development is also rapidly accelerating in artificial intelligence. According to the non-profit research institution Open AI, which researches artificial intelligence and was founded by Tesla's CEO Elon Musk and Sam Altman of Y Combinator (the world's most successful accelerator), the amount of compute for executing the biggest artificial intelligence training programs is doubling every 3.5 months (for comparison, Moore's law dictates a price-performance doubling time of about 18 months).[3] Thus, larger and larger datasets can be used to train artificial intelligences, which is crucial for their learning. It is, for example, this method which was used to train Alpha Go, the artificial intelligence that in 2017 beat the world's best Go player in this complicated game.[4]

The food producer Impossible Foods produces plant-based burgers that look like meat, taste like meat and bleed like meat, even though the burgers are 100% plant-based. The burgers behave like meat because the producer has developed a method of simulating the meat experience by adding heme, a component of an oxygen-bearing molecule that is also found in blood, to the plant material, thereby recreating the meat-like experience.

In 2016, Impossible Foods sold their burgers in around 200 American restaurants. In 2018, they began to produce over 500,000 kilograms of plant-based 'meat' mince in their new factory, thus truly preparing themselves to offer their products to the wider market,[5] which is increasingly open to a future where the cow itself gets disrupted, and meat no longer needs to be on the menu, as long as the meat experience is still possible.

In 2018, the first self-driving taxis were piloted on specified routes in selected cities in the United States (though still with a human controller for safety, and not without accidents and problems) and overall, the self-driving car manufacturer Waymo has now test-driven more than 16 million kilometres on the road,[6] and drives an additional 16 million virtual kilometres a day in a virtual world, a so-called digital twin that the company created to conduct more thorough testing.[7] Peter Thiel, investor and co-founder of payment solution PayPal and the data company Palantir, is known for the quote 'We were promised flying cars, instead we got 140 characters' (i.e. Twitter) in a critique of how little innovation tech companies have created. But this quote is about to be put to shame, as Dubai is playing with autonomous flying taxis and claims that they will be put into operation shortly. The latest virtual reality glasses from the manufacturer Oculus, launched in May 2018, do not need to be connected to a PC, inserted into a smartphone, or connected to headphones, like other models on the

market. And they already cost only a quarter of what Oculus's own products did in 2017,[8] which means that the price level is about to hit a point where virtual reality glasses could actually become available to a broader target group.

The CRISPR-Cas9 genome editing technology was developed in 2012. It can, simply put, be compared to the cut-and-paste feature in a Word document, with the slight difference that CRISPR-Cas9 cuts and pastes DNA, the building blocks of life. We've been able to edit genes for more than 30 years, but precision, time, and pricing have been huge obstacles, and CRISPR seems to be the technology that radically changes this, thus paving the way for, among other things, rendering the world's biggest killer malaria mosquitoes harmless,[9] improving food resistance to disease and decay,[10] storing data in DNA,[11] bringing extinct animal species like mammoths back into the world,[12] and, not least, curing cancer.[13] Much of this sounds like science fiction, but it's scientific fact[14] and it is in the process of radically changing the world as we know it.

As a modern person, you would need to be walking around with blinkers to be completely unaware of even one of the developments that I have briefly described here. Nevertheless, only a minority of organizations possess sufficiently broad and deep knowledge about these developments, and many do not take them seriously enough. In fact, established organizations tend

to do one of two things. Either they are dismissive of whatever is new and different, because these things are almost by definition difficult to fit into existing strategies. That is to say, that as a food producer, for instance, you look at Impossible Foods, which produces plant-based burgers, and say 'It's niche', 'It will never amount into anything', or 'It has nothing to do with us, we produce meat', while not realizing that consumers are increasingly open to meat alternatives, as long as they don't have to give up the meat experience . Alternatively, organizations recognize, on some level, that they should explore new things, but they don't do it thoroughly, ambitiously, and strategically enough. That's when they take the trip to Silicon Valley, or conduct a hackathon, or join an accelerator programme, all of which can be good and value-creating tools. But if you have not put forward a strategy for the future, these otherwise excellent initiatives end up becoming isolated events, a kind of innovation theatre, where you say and do some of the right things, but do not convert any of them into a strong innovation culture. Let's, therefore, look at the questions that you must ask or re-ask yourself to lay the foundation for the right strategy and the right innovation design.

NOTES

1. www.intel.com/content/www/us/en/history/museum-gordon-moore-law.html.
2. https://abc.xyz/investor/founders-letters/2017/index.html.
3. https://blog.openai.com/ai-and-compute.

4. https://deepmind.com/research/alphago.

5. https://techcrunch.com/2018/04/03/wheres-the-beef-for-impossible-foods-its-in-boosting-burger-sales-and-raising-hundreds-of-millions.

6. https://exponentialview.us15.list-manage.com/track/click?u=eee7b804 3119f98544067854b&id=ec15fe0e61&e=e88e438a60.

7. www.technologyreview.com/s/612251/waymos-cars-drive-10-million-miles-a-day-in-a-perilous-virtual-world.

8. https://arstechnica.com/gaming/2017/07/oculus-cuts-rift-price-for-second-time-this-year-now-399-with-touch/.

9. www.wired.com/story/heres-the-plan-to-end-malaria-with-crispr-edited-mosquitoes.

10. www.nature.com/news/gene-edited-crispr-mushroom-escapes-us-regulation-1.19754.

11. www.newscientist.com/article/2140576-video-stored-in-live-bacterial-genome-using-crispr-gene-editing.

12. www.livescience.com/62569-mammoth-elephant-hybrid-help-climate.html.

13. www.sciencedirect.com/science/article/pii/S1044579X17302742.

14. Jennifer Doudna Samuel Sternberg, A Crack in Creation: Gene Editing and the Unthinkable Power to Control Evolution, 2018.