

# How to introduce Lean Startup process into a medium-sized IT vendor, namely Futurice?

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## Abstract

Following Anderson and Tushman (1990), companies are facing exceptional competition in today's era of ferment. Pressured by an innovation impetus, companies seek new means of doing and producing. Start-ups are seen as a model of innovation due to their potential disruptive power and are increasingly turned to as identifying promising means and processes, as presented by the Lean Startup.

Though a highly popular topic in research, there is little empirical evidence that holds water in a more critical scrutiny of the applicability of Lean Startup principles, their benefits and compatibility with other, effective means to deal with the context of complexity, however fall short when facing extreme uncertainty, where high levels of design need to be incorporated.

In this thesis I explore ways to introduce Lean Startup into an agile medium-sized IT vendor, namely Futurice acting as an empirical environment. Utilising co-creative methods I map the culture, define customer relationships and present project cases, in order to identify opportunities and limitations of adopting Lean Startup thinking within the specific setting of Futurice. As a solution I present three actionable steps, that are the Lean Startup Poster, an artefact to educate and enable communication, the Lean Startup Roadmap, a set of actionable steps, and the Lean Startup Testbed Proposal, an artefact-based design heuristic to vertically and horizontally integrate Lean Startup as a process into Futurice.

**Keywords:** *Lean Startup, agile, lean, software development, Futurice*

# Abbreviations

<b>CI</b>	<i>Corporate identity</i>
<b>DD</b>	<i>Dominant design</i>
<b>DTC</b>	<i>Discontinuous technological change</i>
<b>EBIT</b>	<i>Earnings before taxes and interest</i>
<b>HCD</b>	<i>Human-centered design</i>
<b>HCI</b>	<i>Human-computer interaction</i>
<b>ICT</b>	<i>Information and communication technology</i>
<b>iOS</b>	<i>Mobile operating system developed and distributed by Apple Inc.</i>
<b>IT</b>	<i>Information technology</i>
<b>IxD</b>	<i>Interaction design</i>
<b>LCM</b>	<i>Lifecycle Management</i>
<b>MDP</b>	<i>Minimum desirable product</i>
<b>MVP</b>	<i>Minimum viable product</i>
<b>PM</b>	<i>Project manager</i>
<b>PO</b>	<i>Project / Product owner</i>
<b>R&amp;D</b>	<i>Research and development</i>
<b>ROI</b>	<i>Return on investment</i>
<b>SD</b>	<i>Service design</i>
<b>UCD</b>	<i>User-centred design</i>
<b>UI</b>	<i>User interface</i>
<b>UX</b>	<i>User experience</i>
<b>WP7</b>	<i>Windows Phone 7</i>



# Glossary

## **Lean Startup**

*is a company in its early stages of operation, that adheres to principles of 'Entrepreneurs are everywhere', 'Entrepreneurship is management', 'Validated Learning', 'Innovation Accounting' and 'Build-Measure-Learn' (working definition).*

## **Entrepreneurship**

*is the act of being an entrepreneur or "one who undertakes innovations, finance and business acumen in an effort to transform innovations into economic goods". This may result in new organizations or may be part of revitalizing mature organizations in response to a perceived opportunity. The most obvious form of entrepreneurship is that of starting new businesses (referred as Startup Company); however, in recent years, the term has been extended to include social and political forms of entrepreneurial activity. When entrepreneurship is describing activities within a firm or large organization it is referred to as intra-preneurship and may include corporate venturing, when large entities spin-off organizations (Wikipedia, 2012).*

## **GOOB**

*= getting out of the building. A concept coined by Steve Gary Blank, as part of the customer development process, as outlined in his 2009 publication 4 steps to epiphany.*

## **Startup company or startup**

*a human institution designed to create new products and services under conditions of extreme uncertainty (Ries, 2011).*

## **MVP**

*= minimum viable product. A strategy used for fast and quantitative market testing of a product or product feature, popularized by Eric Ries for web applications. The minimum viable product is that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort (Ries, 2011).*



***Validated Learning***

*is learning, that can be validated scientifically, by running experiments that allows one to test each element of their vision (Ries, 2011).*

***Innovation Accounting***

*is a strategy to measure progress, how to setup milestones, how to prioritise work: a new kind of accounting, specific to startups (Ries, 2011).*

***Build-Measure-Learn Loop***

*is the fundamental activity of a startup is to turn ideas into products, measure how customers respond, and then learn whether to pivot or persevere. Any startup should be geared to accelerate that loop (Ries, 2009).*

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Big companies are not the same as startups, and never will be. But that doesn't mean that they can't be innovative and fast-moving like startups. They just have to do it differently.

1

# 1. Introduction

## 1.1 Background – Answering challenges in an era of ferment

Over the last few decades, information technology has significantly grown in power from a high entrance barrier domain to a “highly accessible and scalable force”<sup>1</sup>, reaching a level of maturity that has started fuelling and transforming global economy by empowering new businesses and challenging existing models and ways of doing business. Hence, as argued by various scholars we are living in an era of ferment (Anderson & Tushman, 1990) in which intense technical variation and selection are predominant and in which disruption and technological discontinuities appear through inertial communities of practitioners and organizations as competence-destroying or competence-enhancing activities (Anderson & Tushman, 1991). This has brought about an innovation impetus for not only large and medium-sized companies but also small ones: potentially posing a threat and an opportunity, respectively. As for any disruption in ICT, its deep embedment into various other industries and sectors<sup>2</sup> is in turn affecting those increasingly, setting competitive challenges for a wide range of actors, resulting in fierce competition among them.

Scholars and practitioners alike have concluded that the old models of productions for companies are lapsed (Ries, 2011; Christensen, 1997), seeking for new models of production when incremental innovation is not sufficient anymore (Christensen, 1997) when facing high degrees of uncertainty, with constant turbulence and disruption. Many software corporations have been embracing Agile, a group of software development methods based on iterative and incremental development, that have been acknowledged to show a lack of providing sufficient user-oriented value (Ries, 2011). Whilst agile methods provide excellent tools and framework for constant learning (Poppendieck & Poppendieck, 2003; Schwaber & Beedle, 2001) and some iterative design on lower levels of the system, as defined by Hyysalo who distinguishes between five different levels of design ranging from detail to social (Hyysalo, 2010), they lack the ability to successfully integrate higher levels of the system, the more radical levels of the design

<sup>1</sup> Startup genome, [www.startupgenome.com](http://www.startupgenome.com)

<sup>2</sup> For instance mobile technology is fundamentally disrupting a range of sectors as diverse as elections, health care and education. Times Magazine, Vol. 180, No. 9, 2012



ability, to challenge and iterate beyond the product or service scope as such, by incorporating understanding strategic and economic adjustments (for instance business plan, pricing, etc.) as consequences of design decisions and efforts (Ries, 2011).

## 1.2 Seeking answers by turning to start-ups' – new models of 'doing' are needed

In order to find ways to deal with uncertainty, scholars and practitioners increasingly turn attention towards start ups, whose definition has been broadened to incorporate any human institution creating value (Ries, 2011). The ecosystems of entrepreneurs, startups and new ways of doing promises fruitful insights, as many practitioners seem convinced, in order for established companies to stay competitive and to keep up with ever-faster incoming waves of disruption is to think and behave like a start up, like Steve Jobs said in his interview at the 2010 D8 Conference with Mossberg: “we are organized like a startup” (Jobbs, 2010).

The basic premise to quickly learn from what we do (with less waste) and discard what doesn't work faster and more cheaply has made entrepreneurship, agile and lean buzzwords of today's world: a highly dynamic era, in which technological advance is in the reach of global majority as it requires low initial investment, various tools having been created and published as freeware to help learn coding and set up own ventures, and thus presenting highly accessible and scalable solutions. The benefits of four centuries of technological and organisational change are at last reaching a previously excluded global majority (Auerswald, 2012), that will eventually lead to a global prosperity (Kauffmann Foundation, 2010) and increased global competition, challenging and transforming the notion of economy. With the effect of driving innovation worldwide and transforming how people work and build products and services, challenging established companies to act and think different. These paradigm shifts highlight the role of design and multidisciplinary efforts to face fierce global competition and focus on essential questions, whilst providing means to answer those in the context of high uncertainty, following the levels of complexity outlined by Snowden and Boone (2007).

However, as Ron Ashkenas noted in HBR Jan 2011 publication: “big companies are not the same as startups, and never will be. But that doesn’t mean that they can’t be innovative and fast-moving like startups. They just have to do it differently.” (Ashkenas, 2011). It becomes evident, that the question at hand is: how?

### 1.3 The Lean Startup and its applicability as a possible solution

Against counter-intuitive belief, scholars and practitioners argue that entrepreneurship, despite its chaotic, disruptive and innovative nature (due to high uncertainty context), requires a managerial discipline to harness potential opportunities (Blank, 2009; Ries, 2011). The Lean Startup is an international movement and increasingly popular methodology, promising to transform how new products are built and launched. It is based on a range of principles and is first and foremost aimed at entrepreneurs and start-ups. However, the five main guiding principles of the Lean Startup also claims being applicable to much wider contexts, ultimately aims to provide an answer to the question of how we can learn more quickly what works, and at the same time discard more quickly what doesn’t (Ries, 2011). Several prominent small and big high-tech companies have begun to publicly employ the Lean Startup philosophy, including Intuit, DropBox, Wealthfront, Votizen, Aardvark, Grockit and GE (General Electric). The Lean Startup principles are also taught in classes at Harvard Business School as it has incorporated Ries’ ideas into its entrepreneurship curriculum (Greenwald, 2012) and are moving into the public sector as implemented in municipal governments through Code for America, a non-profit organisation building a network of cities, citizens, community groups and startups to re-imagine governments for the 21st century.

At the heart of the Lean Start up methodology is a set of principles facilitating the realization of the need to create experiences and desirable products that people actually want, which – due to its fast pace changing nature as present in an era of ferment – is the subject to constant testing and iteration. The basic promise of the Lean Startup is achieve at great speed,

desirable outcomes, minimise waste and emergent strategy despite high degrees of uncertainty. Due to the in vivid discussions amongst various tangent communities, amongst scholars and practitioners, it thus is necessary to deconstruct the Lean Startup concept, identify its underlying principles and benefits and investigate its methodologies and tools. This conceptual deconstruction will enable a thorough analysis of the Lean Startup concept and allow for an investigation assessing its adaptability into a non-startup setting, as provided by the empirical case company of Futurice.

#### 1.4 Empirical case study: Futurice

For this thesis, I choose the specific context of Futurice Oy as an empirical case study. Futurice is a Finnish medium-sized software company that works with agile methods. The company has spearheaded the “philosophy” of having business, design and development competencies under one roof, acknowledging the potential of deep professional integration to create better products (Futurice, 2012). As a fast growing, agile IT vendor, the Lean Startup holds highly attractive promises due to its natural cultural fit, and the potential to deliver highly desirable products and services at rapid speed (Ries, 2011).

The Lean Startup holds the promise to provide principles, structure, methods, tools, and ideas for an accelerated and holistic product development process, that yields highly desirable product and service outcomes with less waste. In order for Futurice to take leadership and position itself as a credible company in selling and teaching processes and new models of working, Lean Startup is a new process that needs to be seriously investigated.

Though the outcome will be Futurice-specific, gaining an understanding is not only highly relevant work for this company but also others, who aim to be atop of how software development and seek to apply the Lean Startup process into their own contexts. Furthermore, they are constantly seeking new products and service innovations for IT vendoring and consulting. This is especially true for companies that don't rely on off shoring but need to argue why having local highly skilled professionals is more beneficial.

There is some negativity in deconstruction. I wouldn't deny this. You have to criticise, to ask questions, to challenge and sometimes to oppose. What I have said is that in the final instance, deconstruction is not negative although negativity is no doubt at work. Now, in order to criticise, to negate, to deny, you have first to say "yes".

2

## 2. Research question

### 2.1 Research phenomenon & problems:

#### Deconstructing Lean Startup to assess its adaptability and scalability

This thesis is situated within the qualitative research through design in order to develop insights exceeding the current state of art concerning literature, theories and frameworks on the conversion of entrepreneurial practice, agile, lean and design practices. Though little empirical work has been done on the Lean Startup methodology as pioneered by Eric Ries, various companies across industries and public institutions and governments are eager to introduce Lean Startup methods into their processes. This thesis aims to provide insights by empirically investigating its benefits and shortcomings. In order to access the value for the specific setting of Futurice, the concept of the Lean Startup needs to be deconstructed to understand how its underlying principles can facilitate the creation of functional, desirable products and services that support a viable business around them. Driven by the need for constant innovation, the rise of startups is pressuring established industry. Software itself presents a fast-moving field, driven by rapid and constant technological advancements, resulting in an imperative to learn fast, work smarter and build more meaningful customer relationships, which is the reason for choosing the empirical case study of Futurice.

### 2.2 Why does this matter?

Notwithstanding the growing acknowledgement in research and practice that startups relate to complex systems and transformative interventions, few reflect on how these relate to actual tools and framework, or link and adapt to existing organisational settings. With this thesis I am to cover this gap by discussing some of the theories I have identified as relevant in this context, before mapping a specific company's culture and setting, reporting on three case studies presented as design inquiries into this organisation, laying the foundation for an informed discourse on its deconstruction and applicability to Futurice.

In this thesis, a design driven focus is pursued, as in the wake of the Lean Startup methodology,

the promise for UX people to provide the necessary tools to adhere to the outlined principles is given. This will result in a highly relevant study, due to its potentially broad applicability, though specific to the studied case company. However, due to the common search and acceptance of best practices within the industry, such as illustrated by the adoption of agile methods in software development, this study yields the potential to apply to an industry wide audience.

Especially in regards to Futurice, a former tech startup and highly successful organically growing IT vendor, the Lean Startup methodology looks extremely attractive. This is not only due to commonly found roots and philosophies, but is also inevitable due to its highly cultural fit, commonly found principles and values such as learning and iteration as well as a central focus on improving customer relationship and creating meaningful, pleasurable and desirable outcomes. Furthermore, Lean Startup thinking potentially provides Futurice – as a rapidly growing IT vendor – a way to not only differentiate themselves from their direct and indirect competitors<sup>1</sup> but also to build better products to prevail and be better equipped in the current era of ferment (Anderson & Tushman, 1990), by tackling the inherent uncertainty and thus helping to design suitable, tailored-to-the-market products and service.

### 2.3 Defining the knowledge gap

As the literature review points out, little empirical research has been done on the topic of Lean Startup methodology, this research work aims at closing that chasm. The Lean Startup principles, originating in the startup world of the US west coast, developed in the context of web-based startups and proposing to manage high degrees of uncertainty, have not been empirically investigated concerning their scalability and applicability in a different context, specifically that of a Finnish medium-sized IT vendor.

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<sup>1</sup> Services are intangible activities customized to the individual request of known clients. (..) Clients generally value the benefits of services more highly than the goods required to provide them (Gilmore & Pine II, 1999). Customer Satisfaction is one of Futurice's core values as will be explored in later chapters.

Furthermore, little empirical research has been done around the topics of Lean Startup principles and how it fits in with other common practices and principles that are more managerial, such as agile and lean or design-driven, such as UX and Service Design. Hence, this research work aims at investigating enablers and inhibitors when introducing Lean Startup principles, identifying those specific to the empirical case study. By investigating and assessing the applicability of the underlying principles of the Lean Startup, potential benefits of adoption for the empirical case study are illuminated. In an attempt to strategically introduce Lean Startup principles into the empirical case study, managerial implications are explicitly listed, generating a highly context-specific outcome.

## 2.4 Research Questions

Following the identified research phenomenon and problems arising from identified knowledge gaps in current literature and theoretical approaches, one main research and three sub-research questions, that this thesis aims at investigating, arise:

### ***Main RQ 1: What is Lean Startup and what are its underlying principles?***

In order to answer this question, I need to deconstruct the concept of Lean Startup, investigate its origins and context from which it arose. Furthermore, this will be accomplished by identifying the various communities it resonates or conflicts with, gathering interpretations of scholars and practitioner of its practical application and broader applicability it may provide. Furthermore, exploring how it has been able to gain the popularity as a world-wide movement# and translating the outlined principles into practice, is key to answering this question.

However, arising from this main research question, sub-questions can be deduced, as Futurice, as a specific empirical setting, needs to be contextualised. Hence, three sub-questions need to be answered alongside with it:



***Sub-RQ 1: What are possible enablers and inhibitors for adopting Lean Startup principles, specifically in regards to Futurice?***

Possible enablers and inhibitors need to be identified in general terms, before specific ones can be identified, specific to the empirical case study of Futurice. In doing so, strategic measures can be discussed in how to overcome inhibitors to facilitate a successful adoption.

***Sub-RQ 2: What potential benefits does the Lean Startup methodology offer a medium sized IT vendor, as shown with Futurice?***

As the Lean Startup methodology is described within the context of startups and entrepreneurs, additionally to investigating and deconstructing the concept of the Lean Startup itself, Futurice as an organisation and its industry setting needs to be investigated in order to map their culture, strategy and values against the potential benefits the Lean Startup principled approach offers. This also requires some analysis of which of the principles are the most relevant to Futurice. Only by doing so, potential benefits for this specific empirical environment can be identified and formulated, as they specifically match strategic needs and goals or pose a solution to identified shortcomings or problems.

Once the benefits of the Lean Startup approach concerning Futurice specifically have been identified, the third sub-research questions deals with summarising findings in a way that will guide the strategic formulation of actionable steps of introducing Lean Startup methodology to Futurice successfully. Hence the following sub-question arises as follows:

***Sub-RQ 3: How can Lean Startup principles be introduced to Futurice and what actionable steps need to be taken?***

In order to successfully introduce the proposed benefits offered by the Lean Startup, this will

be accomplished by investigating case studies and mapping and defining current customer relationships and the contexts, in which Futurice operates in, as a vendor. As Futurice itself essentially is a service provider, selling processes and expertise, a Lean Startup type of process hence would be a new *product* to sell. Answering these issues is vital, as only through understanding the nature and dynamics of current customer relationships, improvement can be achieved.

Based on further discussions and workshops, a strategic and actionable approach has to be formulated in order to successfully introduce Lean Startup methodology as a process into Futurice, the overarching aim of the thesis. I will give informed explicit and actionable suggestions for how this can be done.



The secret to discovery is to  
never believe existing facts.

3

## 3. Methods

As guided by the identified research objectives, I will conduct various ways of investigating and finding answers to the posed main research question as well its derived sub-questions.

***Firstly**, in order to describe and understand the research phenomena and the knowledge gap, a contextual review is being carried out, identifying core literature from the different fields tangent to the Lean Startup and the contexts of complexity and chaos, that will facilitate a deconstruction of the concept.*

Conducting a literature review, I will give insights into innovation studies, organisational managerial literature and strategic research that help frame technological change as a cyclic phenomenon (Anderson & Tushman, 1990) and give insights to grounds on which innovation happens and current competition occurs, that in turn elicit the challenges companies are facing currently. Furthermore, I will identify processes and tools that help tackle and that present answers to the outlined challenges. Identifying and utilising a suitable framework, as found in the *Cynefin* framework (Snowden, Boone, 1999), I will map these processes and tools, including proposing a positioning of Lean Startup within, in order to contextualise and compare them against one another, outlining benefits and shortcomings of each.

***Secondly**, in order to map Futurice as an organisation and to map and explain their customer relationships, offering and service delivery, a range of interviews and workshops are being conducted with Futurice employees.*

Furthermore, in order to assess the means to introduce the, as relevant identified, Lean Startup principles into Futurice, a thorough understanding of its company culture is indispensable. Hence, in order to enrich knowledge and nourish a deep, insightful and holistic understanding, a variety of user-centred and primarily discursive methods are employed and utilised in order to capture and map the complexity. Furthermore, ethnographic insights through having worked in the company for over a year, going through the initial training and introductory process, including training sessions, workshops and interviews on one hand as well as participation in a

wide range of projects, cases, work groups and seminars on the other, yielding both an explicit as well as tacit knowledge base are incorporated. In an effort to advance tacit knowledge into explicit knowledge, a range of additional artefacts, such as sales material, the website, Futurice's brandbook and others, are subject to analysis.

An initial round of interviews was used in order to portray the company, its customers, the types of their relationship and the service offering involved. The initial framework of analysis was introduced as it will be used for the second round of interviews in order to structure the findings and to make explicit suggestions concerning the adaptability of the discussed principles and theories and make them subject of discourse. In addition, previous company cases are being analysed to investigate the various customer relationships Futurice engages in, how projects are being chosen and managed, facilitating the definition of existing customer relationships.

***Thirdly**, in order to explore how and if the principles of the Lean Startup can be applied in order to improve the service offering and customer relationships at Futurice, a second round of interviews is carried out, introducing the initial framework of analysis and refining the developed artefacts, investigating possible actionable steps, through co-creative measures, discursive and proactive iteration.*

As stated above, based on the initial interviews, several visualisations were produced, that then took the central aspect of second round of interviews, engaging in a discursive and pro-active iteration and refinement round, involving various perspectives, experiences, background and opinions in grounding comprehensive actionable suggestions on formulating the strategic introduction of Lean Startup methodologies.

### 3.1 General approach for interviews and workshops

The overarching goal was to evaluate this company from a holistic point of view, to map opinions, facts, artefacts and perspectives into a coherent strategy. Hence, the chosen approach of conducting interviews required a cross-section of opinions, facts, and perspectives in order to generate a multilayered, comprehensive and encompassing understanding. Hence it was identified as a necessity to cover all organisational levels of the company<sup>1</sup>. Additionally to that, workshops and focus group discussions were carried out.

One key challenge was to identify and design the right setting and choosing suitable participants. The choosing of the participants was based on a cross section of skills and knowledge, professional backgrounds and positions within the company. Questions arose concerning the format of the interviews and workshops themselves, the appropriate way of documentation, embracing a component of iterative cycles and a suitable synthesis of various results and artefacts obtained.

### 3.2 Format of the interviews and workshops

According to Hyysalo, there can be structured, themed or open interviews (Hyysalo, 2009). Whilst structured interviews present a rigid set of preselected questions, open interviews are argued to be more akin to discussions about the selected topic. Themed interviews position themselves in between, with preselected questions guiding the interview, though at the same time giving the interviewer the opportunity to ask further questions based on previous answers or comments. As extracting and comparing data from unstructured questions is a lot harder to accomplish, open interviews pose the challenge of being more difficult to be analysed. That is also due to the fact that given answers from various people do not stem from the exact same questions. Hence, for the interviews a themed approach was chosen.

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<sup>1</sup> Relevant data on interviewees, their positions and job titles can be found in the Appendix.



The interviews and workshops were carried out throughout the entire thesis process. As a preparation and a direct result from the conducted literature study, I identified and formulated a set of key questions<sup>2</sup> to both guide and steer the interviews and discussions, however allowing space and time for discursive sidetracks to be explored and followed during. The format of the interviews for both the initial round as well the second round was announced to the interviewee and composed of three main topics in order to allow focus and to ensure time boxing. The interviews were set to last for an hour with approximately 50 minutes reserved to cover the main areas and further 10 minutes to explore thoughts that had risen and feedback to be gathered.

Utilising the – thematically in three main parts – structured key questions, enabled to systematically cover through literature review identified surfacing issues in regards to innovation, technological change, competition challenges, entrepreneurship, company organisation and culture and nature of projects, amongst many others. Furthermore, all conducted interviews were recorded, drawings and notes made from each and brought into the next. Following this iterative approach, enabled the use of visualisation and notes as additional ways for documentation, alongside accurately obtained transcripts through recordings. Following the themed interview approach made it in turn subject to modifications, keeping the interviews themselves lean and agile throughout.

Additionally, short workshops of no more than two hours, helped to summarise the findings obtained and to engage in co-creative methods to further discuss ideas as well as to extract actionable steps and action points. Similarly, workshops were arranged throughout the process, and followed a themed approach, leaning on the themed interview approach.

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<sup>2</sup> Key questions such as: “How would you describe the company culture within Futurice?”, “What are the company’s current goals and strategies?”, “What potential benefit do you see from adopting the Lean Startup process?”.

### 3.3 Possible shortcomings

As a result of having worked at Futurice myself for about a year# and a half, my perspective as a researcher is tinted through my own self as an employee of Futurice.

Furthermore, though my personal background and education includes a solid business as well as technical understanding, in Futurice I am mostly perceived as primarily a UX designer, due to the position I am holding inside the team, project group and professional title I am holding. Additionally to that, there are sociocultural factors, such as my nationality and me being a female, that might have had an influence on the outcomes of this research.

Through the chosen approach however, I am opting for a qualitative research approach, that in turn aims at generating insights through discourse and co-creative means. Hence, rather than focusing on scientific rigour, I chose a more lean and agile approach to conduct this research. Criticism may arise due to another approach being argued as superior, however, given the scope of this thesis and the specific setting of an empirical research case, more high-fidelity outcomes were opted for.

It needs to be emphasised, that his thesis presents a practitioner's thesis, not the thesis of an academic scholar. The research questions addressed are highly relevant in practice. My chosen practitioner's approach will hopefully contribute also to the academic discussions and perspectives on these matters. With the domain of this study being a mixture of theory and practice – though clearly and firmly anchored in the practical context – it aims at building a bridge to more theoretical approaches.

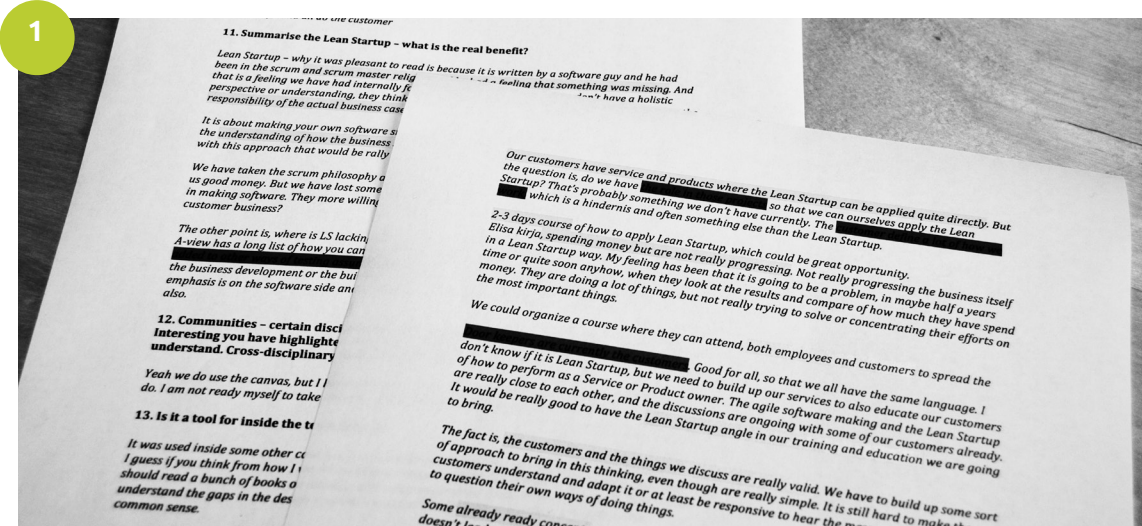
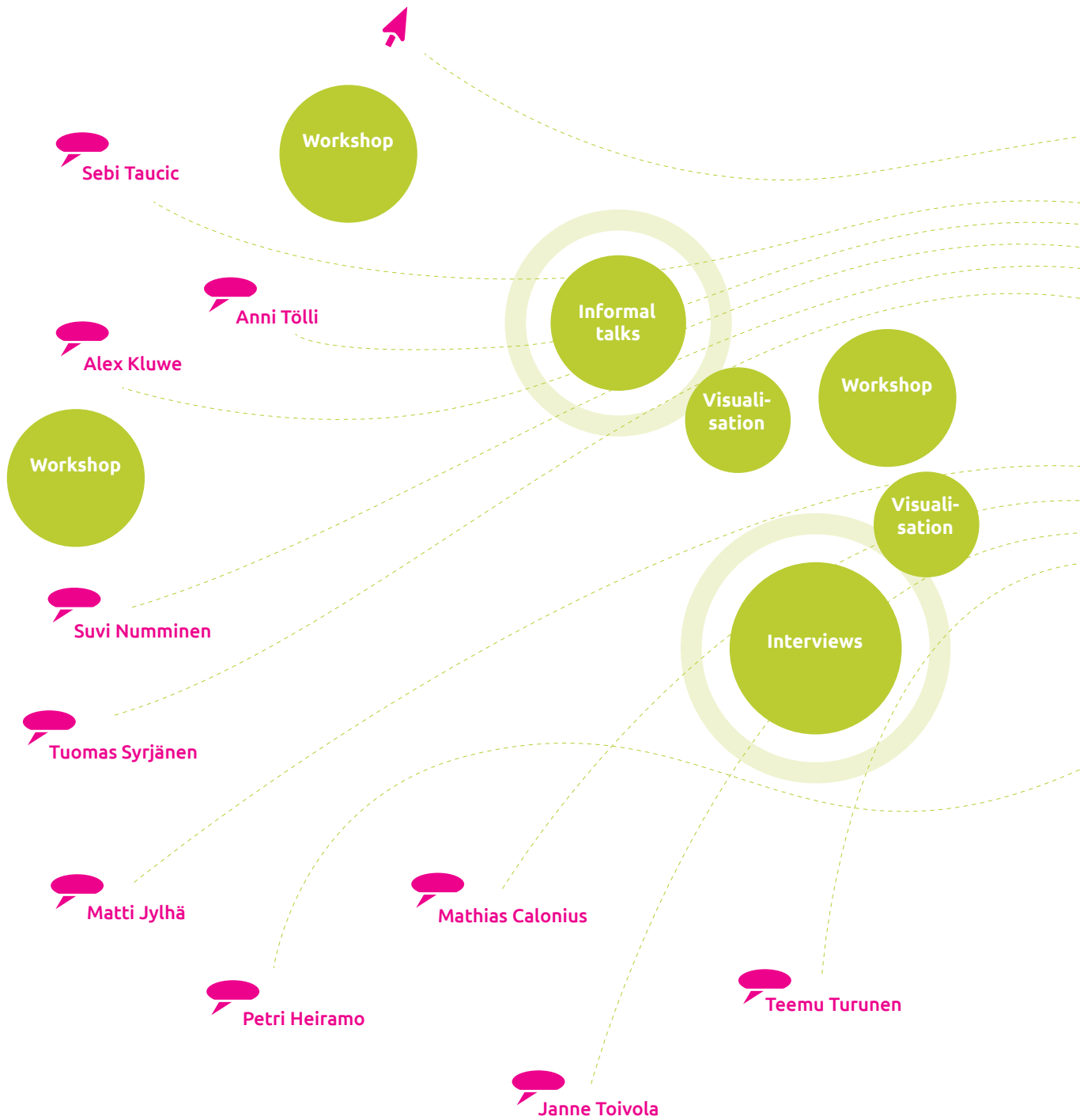





Fig. 1: Transcribing interviews from recordings

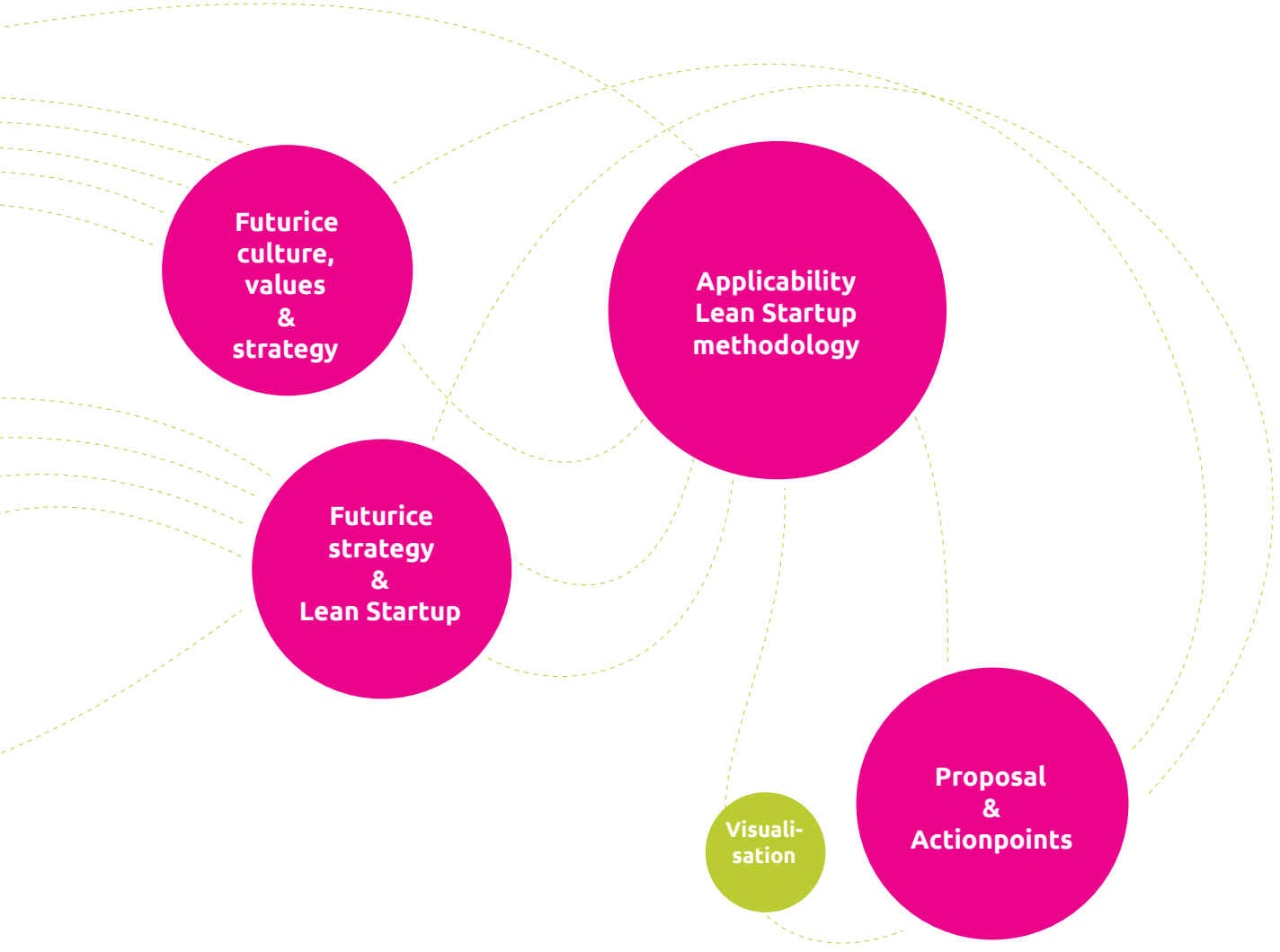
Fig. 2: Mapping comments to matrix to compare and analyse results (right), which can be found from Appendix.




Interviewee, date	Culture	Values	Challenges	Opportunities	Status
Mathias Colonius, Head of Consultancy 9.8.2012	- really open - willing to spread information and knowledge - services advantage - good customer, secure workplace - trust, transparency, learning and caring - culture is reflection of values, one can really see that - supportive - young company - fast learning track	- trust, transparency, learning and caring - caring as differentiator - values are simple and easy to remember, they are really good! - think they are lived in the company and customers 'know' them too	- hold on to senior people - how to create an environment that supports continuous learning as we grow - need to increase prices on what we sell - under one roof mentality, others are doing it too - need to find a concept we can 'export' - subsidiaries need to find a way to stable business	- mobility - we are superb at it + have developed good understanding of consumer services side - long list of references - currently stable business & continuous - business abroad - perspective and learning	- inform - build
Janne Toivola, Senior Service Designer 23.8.2012	- start up like working under the same brand - devoted people and teams - we want to do complex things, tailored solutions, not be fixed on certain technology - try to work in customer premises gives us better insights (projects, business, dynamics)	- basic promise to customer: we deliver - want to create value instead of just writing code - cutting projects into manageable pieces - transparency - good at caring - currently a goal - powerful combinations: try harder than competition, not afraid of being wrong	- individual teams trying to be better - competition - teams duplicate work (e.g. teams trying to introduce analytics) - bring them together - processes can be improved - agile - we are good at - but e.g. UX team can improve - we are still too much in waterfall mindset, as we work sequential, not good enough linkage between design phase and implementation - need to be prouder and communicate how we feel (educate customer) - continuous learning - how to?	- can we be good at everything - maybe we need to focus more? - shift to problem-solving attitude - consulting: get into discussions earlier to affect project and outcome - UX: can't live without, others are doing it too - analytics: being more professional, making more analytical decisions in projects vs. heroic design and well aligned with key account strategy, get the product to better serve the business side - beyond IT provider - different functions needed for that	- key- - use int - get i - edge - probl - manz - from - enter - indu
Petri Heiramo, Organizational Scrum Master	- no comment, as just recently joined the company	- no comment, as just recently joined the company	- no comment, as just recently joined the company	- no comment, as just recently joined the company	-



-  **Sebi Taucic**, UX & Service Design
-  **Anni Tölli**, Marketing Leader
-  **Alexander Kluwe**, Project Manager
-  **Suvi Numminen**, UI & Concept Design

-  **Tuomas Syrjänen**, CEO
-  **Teemu Turunen**, Services Director, Lifecycle Management
-  **Petri Heiramo**, Organizational Scrum Master



- 
-  **Matthias Calonius**, Head of Consultancy
  -  **Janne Toivola**, Senior Service Designer
  -  **Matti Jylhä**, Business Director

As organizations struggle to stay nimble in the face of an ever-changing marketplace that is disrupted constantly by incumbents as well as start-ups, getting to market fast becomes top priority. [...] In other words, by the time the company decides internally how the product should be designed, the needs of the marketplace have changed.

4

## 4. Literature review

The following literature review is targeted at bringing together and synthesizing existing literature and research concerning innovation, managerial, organisational and strategy literature in order to lay the foundation for understanding the fundamental forces of innovation, the various schools that have emerged in studying this complex topic, as well as give insights on practitioner's accounts to ensure high relevancy and up-to-date insights.

As the studied topic is a highly cross-disciplinary one, the aim of part one is to take a multangular way of studying it, however due to the specific setting of the thesis and its ecosystem from which it arose, this thesis deliberately chooses a technical and software specific angle of analysis, by taking a techno-historic look at innovation. Part two investigates strategic attempts of dealing and managing uncertainty, introducing a range of various ways of decision-making principles. Part three of the literature study highlights the fundamentals from which the concept of Lean Startup arose, and to make the outcomes relevant and applicable to the fields the studied case company Futurice, operates in, touching upon tangent topics such as lean manufacturing, agile practices as well as the rise of Lean Startup and lean UX.

### **Part 1: Innovation - a complex, multifaceted phenomenon**

#### **4.1.1 Innovation studies and the importance of a cross-disciplinary approach**

Despite innovation arguably being as old as humankind itself, innovation studies are arguably a relatively young field that started to emerge as a separate field of research in the 1960's. The according literature had been varied for decades, with a strong focus on approaches tied to individual disciplines themselves that yielded the understanding of innovation as a complex and multifaceted discipline that alone through science or a single discipline was not to be understood in its entirety, resulting in a focal shift of research in this area and the notions that characterize it (Fagerberg, 2006) with several journals and professional associations founded to contribute to a stronger cross-disciplinary approach, synthesizing insights from various fields



and disciplines, that characterises most of the scholarly work done in this area.

Undoubtedly, there is something inherently human about the tendency of improving life, in thinking about and doing new and better ways, the strong desire to learn, a central topic in cognitive sciences. As outlined by Stephen Kline and Nathan Rosenberg (Kline & Rosenberg, 1986), the linear model characterizing the widespread view on innovation in the mid 80's generalized a chain of causation holding true only for a minority of innovations, namely the assumed stemming from scientific breakthroughs as initiators for important innovations as well as the ignorance of feedback and failures occurring at various stages of the linear model, that can lead to learning and eventually totally new innovations. Hence, a central topic of innovation studies is that of learning, a central topic in cognitive sciences, as occurs in organisational settings such as groups, firms, teams and networks and that is studied within sociology, organisational science, management and business studies. (Fagerberg, 2006)

#### 4.1.2 What innovation is - and what it is not

When investigating the concept of innovation, it has to be understood against invention, whereas both can be so closely linked, that making a clear distinction is impossible (Fagerberg, 2006). Invention is the first occurrence of an idea for new product and process, whereas innovation is the first commercialization of an idea, combining several different types of knowledge, capabilities, skills and resources. Hence it follows the importance of the role of the innovator, whether an individual or an organisational unit, combining the factors necessary, as exemplified by the work of innovation theorist Schumpeter on entrepreneurial behaviour. It highlights the individual perspective, laying much ground for entrepreneurial studies in general. Schumpeter distinguished between five different types of innovations (new products, new methods of production, new sources of supply, exploitation of new markets and new ways to organize business, whereas the focus has been on the two first (Schumpeter, 1934).

However, Schmookler (1966) argued for the critical distinction between 'product technology'

and 'production technology' (similarly to 'product innovation' and 'process innovation'), to characterize the occurrence of new improved goods and services, and improvements in the ways to produce them, respectively. Hence, innovation from a business or organization perspective, can be understood more broadly as "Innovation . . . is generally understood as the successful introduction of a new thing or method . . . Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services" (Luecke and Katz, 2003).

#### 4.1.3 Innovation in the making and how it occurs

Innovation as such, was for the longest time absent from mainstream social science, due to an inability of scholars in answering the fundamental question of how it occurs, leaving scholars to commonly assume a random phenomenon (or "manna from heaven"). Innovation theorist Schumpeter, objecting to this practice, highlighted three main aspects in his work, known as Mark I. It included aspects such as the fundamental uncertainty inherent in all innovation projects and the need for moving quickly, instead of weighing all information available to find the 'optimal' solution - involving leadership and vision - and a prevalence of 'resistance to new ways', or inertia - qualities associated with entrepreneurship (Schumpeter, 1934). However, in his accounts, the organisational dimension was overlooked, as most innovations involve teamwork and take place within larger organizations, which he corrected later, in his work known as Mark II, emphasising the importance of co-operative entrepreneurship in big firms, without analysing the phenomenon in detail (Schumpeter, 1942). Central finding in innovation literature is that, no firm innovates in isolation but depends on extensive interaction with its environment.

Hence, one needs to turn to the systemic nature of innovations as the 'innovation journey is a collective achievement that requires key roles from numerous entrepreneurs in both the public and private sectors' (Van de Ven et al. 1999, p.149). Hence, in the last decades, scholarly work has concentrated on how system-concepts are applied to the analysis of the relationship

between innovation activities in firms and the wider context, in which these activities are embedded.

#### 4.1.4 Innovation - a historic technological perspective

One main approach has been to delineate systems on the basis of technological, industrial or sectoral characteristics (Hughes 1983, Carlsson & Stankiewicz 1991) and to explore the technological dynamics, its various phases and how it influences and is influenced by the wider social, institutional and economic framework. Systematic theoretical and empirical work on innovation project work and its management has risen, fundamentally agreeing with Schumpeter's uncertainty aspect (Nelson and Winter 1982, Nonaka and Takeuchi and Van de Ven et al. 1999). Based on Pavitt's analysis (1984), the factors leading to innovations across different industries and sectors can vary hugely, hence a popular approach in (recent) mainstream innovation literature has been a case-based one. Popular innovation literature has also currently been experiencing a rapid expand, accompanied by a much stronger research on the role of innovation economic and social change that has proliferated in recent years, particularly within the social sciences. But the overarching question remains, how to foster innovation?

The problems of innovation are extremely varied and complex that multiple bodies of knowledge are required to understand how to manage the evolution of innovation, hence no single paradigm (Kuhn, 1970) has emerged in the study of patterns of innovation but several (Christensen 1997). According the school of Christensen (et al.), four bodies of theory can be labelled, one of which is the dominant design theory that studies one particular dimension or aspect of technological evolution, which is – as technological historians have pointed out – critical to the way innovation is organized, as well as its economic and social effects, depending heavily on the specific nature of the technology in question.

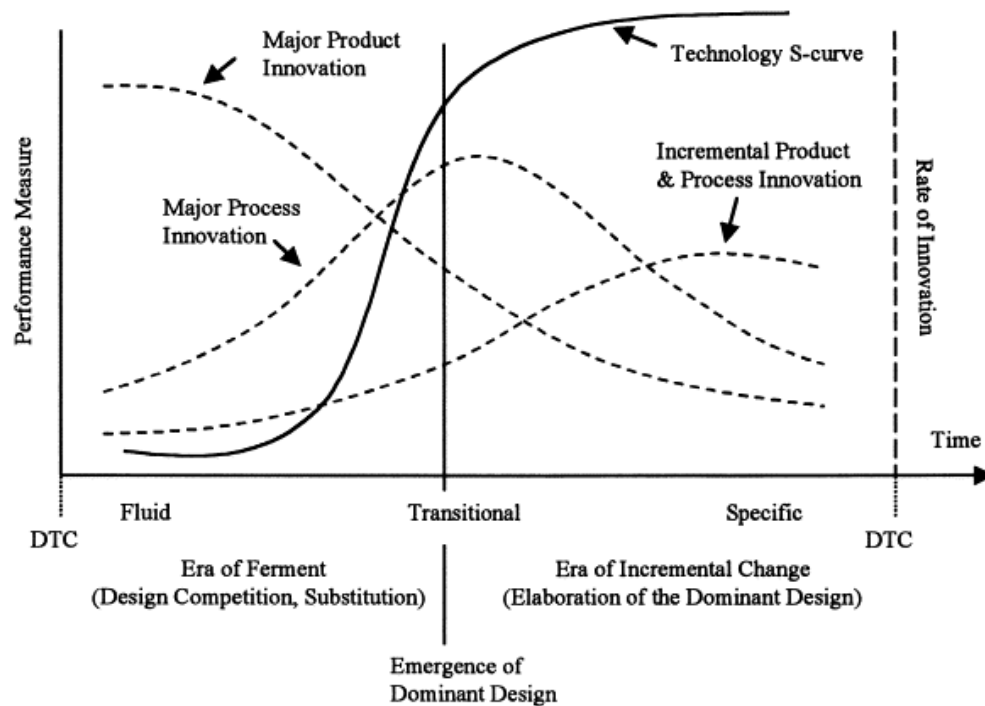
#### 4.1.4.1 Technology Life Cycles: Discontinuous Technological Change (DTC) and Dominant Designs (DD)

As stated above, after the pioneering work of Schumpeter (1934, 1942) and Marx (1906) concentrated mainly on the actual effects of technological change on certain industries, organizations, individuals and roles. However, when attempting to understand technological change, the nature and dynamics of it, I have chosen to take a historical view on technological evolution, based on the model on the cyclical evolution determined by technological discontinuities and dominant designs, as formulated by Philip Anderson and Michael Tushman. Their proposed model is used in order to position this thesis and to understand fundamentals of technical variation, selection, retention and progress (Anderson & Tushman, 1990).

According to the model of technological change, a technological breakthrough, or discontinuity, initiates an era of intense technical variation and selection (era of ferment), culminating and ending in a single, dominant design, a new and stable and established technology. Hence, the era of ferment is followed by a period of incremental technical progress, which in turn may be broken again by a subsequent technological discontinuity, as shown below.

Overall, the proposed model is a cyclical one, meaning there are consecutive phases of technology development, that follow each other in cyclical manner. It has also been described as non-linear, referring to Kuhn's work (1962). He argues that major changes happening in 'paradigm shifts' that affect the very foundation of technological knowledge, business models, and entire industry that pressures people to an extent in which they go as far as reconfiguring their known practices and invent new ones. Similar approaches and models can be found from literature stemming from technology management research such as Clayton M. Christensen (1997) and James Utterback (1994).

3



**Fig. 3:** Underlying concepts of the DTC-life cycle, as adapted from Lambe and Spekman (1997), Foster (1986), Anderson and Tushman (1990) and Utterback (1994)

#### 4.1.4.2 Technological discontinuities and the subsequent era of ferment

The starting point for the presented model is a radical innovation at an unforeseen moment, that Anderson and Tushman coined a technological discontinuity. Its radicalness derives from the technology not being based upon traditional, known and tested competencies and business models, disrupting the existing and established industry. It is argued to be dramatically challenging norms of existing innovations in an industry, not only advancing the state of art but also introducing a new way of making something or a new fundamental product architecture and hence deeply disrupting the established and existing industry. The discontinuity is a radical

innovation, as opposed to evolutionary, incremental or conservative.

This discontinuity can either be competence-destroying or competence-enhancing, rendering the expertise required to master the technology that it replaces obsolete, and building on know-how embodied in the technology that it replaces, respectively. In any case, each discontinuity inaugurates the technology cycle, that starts with the era of ferment (Anderson & Tushman, 1990).

The radical advance introduced by a technological discontinuity leads to an increased variation in a product class, making eras of ferment account for the majority of observed technical progress across industries (Anderson & Tushman, 1990) as it triggers experimentation, due to the introduced radical innovation or new technology being crude and experimental itself. Frequently, they do not work well and are based on unproven assumptions and inconsistent competencies. Hence, in an era of ferment, an old technological regime competes against the new technological regime and even different variations of the new technological regime can compete against each other within. Typifying for the era of ferment is the absence of a clear combination of actors that is stable and dominant, meaning that there is a high potential benefit in becoming the new dominant design. Furthermore, this makes the era of ferment exceptionally competitive and indeterminate due to previous structures and models, power relations and organisations potentially changing drastically.

One critical aspect to highlight, is the fact that design plays an important role in an era of ferment. Often, several versions of the breakthrough technology appear due to the technology itself not being understood well and because pioneering companies having an incentive to differentiate their product variant from those of their competitors. During an era of ferment, potential customers are often confronted with several versions of a new technology, that often early adopters will respond to, however most will wait for a standard, resulting in fierce competition, in which market dominance might pass back and forth among rival designs over time. Hence, during an era of ferment, variation and selection pressures are substantial because

of substitution and design competition. A current example can be seen in the mobile phone context, where power relations are changing constantly, the market is highly competitive and startups quite easily penetrate the space of mobile ecosystem (Time Magazine, 2012), as they can move and respond quickly. Due to the unpredictability of the era of ferment, one of the core competency considered vital for any actor within is learning, along with a highlighted role of design. One prime example can be seen in Apple's innovative approach to business and its products, re-organising the company to stay lean and nimble, despite its enormous size (Fortune Magazine, 2012).

#### 4.1.4.3 Dominant design and the subsequent era of incremental change

Utterback and Abernathy (1975) suggested, that the emergence of a dominant design is the key event in the evolution of an industry, marking the transition from a fluid to a specific state (Anderson & Tushman, 1990), proposing an initial period of product design ferment before the emergence of a dominant design, denoting a general acceptance of how principal components would interface with others - a basic architecture of product or process that becomes the accepted market standard (Abernathy & Utterback 1978, cited by Anderson & Tushman, 1991) - that may not necessarily be the optimal design. Anderson and Tushman argue, while only known in retrospective - that the dominant design reduces variation and, in turn, uncertainty in the product class (Anderson & Tushman, 1990) and hence asserts that the nature of innovation shifts markedly after a dominant design has emerged.

As the outcome of an era of ferment is non-obvious and complex, Bijker and Law explain that in technological change the heterogeneous actors - for instance businesses, organisations, regulators, users and existing technologies - each have their own strategies for winning in the conflict and beating any opposition (Bijker & Law, 1992). On the other hand, strategies and actions are shaped in influenced by other actors and their pursued strategies - making chosen strategies and their consequences an emergent phenomenon. Building upon dominant design paradigm, scholars have articulated impacts on patterns of innovation can be, including

dominant designs restricting differentiation of products through innovative design, resulting in fewer opportunities for small or entrant firms to penetrate a market or find refuge in niche markets in post-dominant design era (Christensen, 1997). Defining for this is the adoption of the dominant elements of architectural design. While only known in retrospect, dominant designs reduce variation and, in turn, uncertainty in the product class. Dominant designs may not be better than alternatives nor innovative. They have the benchmark features to which subsequent designs are compared. Examples include the IBM 360 computer series and Ford's Model T automobile, and the IBM PC.

#### **4.1.4.4 Strategic literature and Technology Management Research: How to foster innovation?**

More recent accounts can be observed to have shifted focus from explaining what innovation is to how it occurs and how firms can deliberately aimed for, facilitated and steer in various ecosystems and through various organisational settings. Furthermore, the argument has been made (Morone, 1993; Tushman et al., 1997) that only through a balanced portfolio approach to innovation (with firms pursuing both incremental and discontinuous projects) can a firm continue to prosper in the long term. However, there are notably much fewer accounts on how to actually do it. Despite a vast amount of popular managerial literature on innovation manuals, there is very little empirical work done in this field.

#### **4.1.4.5 Sustaining and disrupting technologies - working simultaneously**

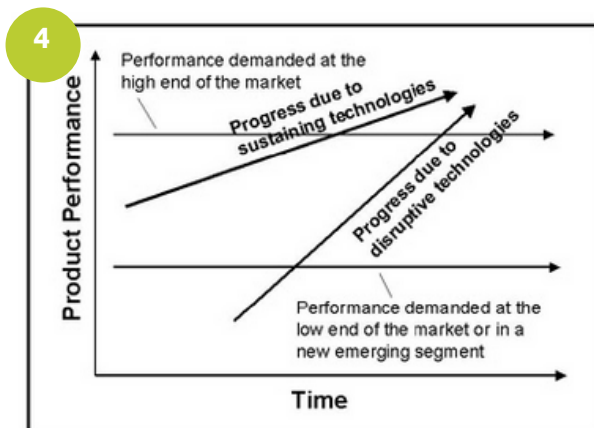
As stated before, building upon the theories of cyclic technological change, similar approaches and model can be found from literature from technology management research, such as Harvard Business School professor and business man Clayton M. Christensen's work. He is best known for his study of innovation in commercial enterprises, focusing on disruptive innovations, as traditionally, academic research and practitioner's efforts in managing technical innovations has been focused on incremental change and projects, that naturally a majority of



projects ongoing at any point in time in a firm indeed are and that put the dominant short term return investment (ROI) mindset at rest: “Also recent focus on lean and re-engineering absorbs many of the prerequisites for considering such projects” (Christensen, 1997).

In Christensen’s first book entitled *The Innovator’s Dilemma* (1997), he articulates his theory of disruptive innovation, that describes how large firms can fail although doing everything right, as their successes and capabilities actually become obstacles in the face of changing markets and technologies. He grounds his theory in the kind of technologies the firms is pursuing, making the distinction between so-called sustaining technologies and disruptive technologies: Technologies that improve product performance and technologies that are innovations that result in worse product performance, at least in the near term, respectively (Christensen, 1997). Companies are traditionally more familiar with the first one, the sustaining technologies, as they involve improving a product that has an established role in the market, making them adept at turning sustaining technology challenges into achievements. However, Christensen claims that the second kind, the disruptive technologies, large companies have troubles facing, as they are cheaper, simpler, smaller, and, frequently, more convenient to use, occurring less frequently and causing the failure of highly successful companies that are only prepared for sustaining technologies, when they do.

So the question becomes, if those firms do everything right, what leads them to fail despite



**Fig. 4:** Image depicting Christensen’s theory on disruptive versus sustaining technologies.

of that? Christensen expands on that in his second book *The Innovator's Solution* (1999), by arguing that firms need to be able to identify, develop and successfully market emerging potentially disruptive technologies, before they can overtake traditional sustaining technologies. However, the identification of those disruptive technologies is can prove challenging as “markets that do not exist cannot be analysed.” Furthermore, involved value networks and the organisational structure itself are argued to be withholding the process of successfully developing and marketing any emerging technologies. Hence, Christensen argues, managers need to adopt a discovery-driven planning, fighting the predominant stigma of failure in most firms by acknowledging in their operations that new markets can not be analysed and instead engage in an learning-by-doing approach, that allows for real-time adjustment of the strategy and planning. This has to happen on a personal as well as organisational level, as investing in potentially emerging technologies may lead to failure which is to be taken as an opportunity for learning and coaching. Once a firm has successfully identified an emerging technology to pursue, they must circumvent their hierarchy and bureaucracy that can stifle the free pursuit of creative ideas, through experimental groups within the company at free reign for instance, that can choose its own customers, how to answer to them, how much profit is needed and how to run its business. Furthermore, whilst maintaining the core business, the emerging technology needs to be developed quickly in order to compete with smaller, more nimble firms. Eventually, once the company has successfully developed a product, they must find an appropriate market to target, that might turn out to be of highly unpredictable nature (Christensen, 1997).

*“Discovering markets for emerging technologies inherently involves failure, and most individual decision makers find it very difficult to risk backing a project that might fail because the market is not there.”*

*– Clayton M. Christensen, The Innovator's Dilemma, 1997*

## Part 2: Innovation impetus in an era of ferment - they way we learn: organisationally and strategically

Fundamental innovations such as agriculture, the wheel or the alphabet (Fagerberg, 2006) have had a major impact on society at large. However, following media Ecologist Robert K. Logan, the Sixth language is drastically changing the operational context. Logan argues that speech (natural language: speak and listen), writing (literacy: read and write), mathematics, science, computing (and computer programming), information technology (and internet), form an evolutionary chain of languages (Logan, 1986). Unlike print, television or radio, users of the Internet and computers can instantaneously interact with information, recognize it, reshape it and respond to it (Logan, 1995), whereas speed in this highly dynamic era of uncertainty, is of immense importance, also due to the widespread reach of IT and its empowering tools. Following Schumpeter's notion of an entrepreneur's ability to achieve synergy (Schumpeter, 1934), this second part of the literature review deals with various contexts of different levels of uncertainty and decision-making principles and frameworks identified by scholars and practitioners in operational contexts of high uncertainty.

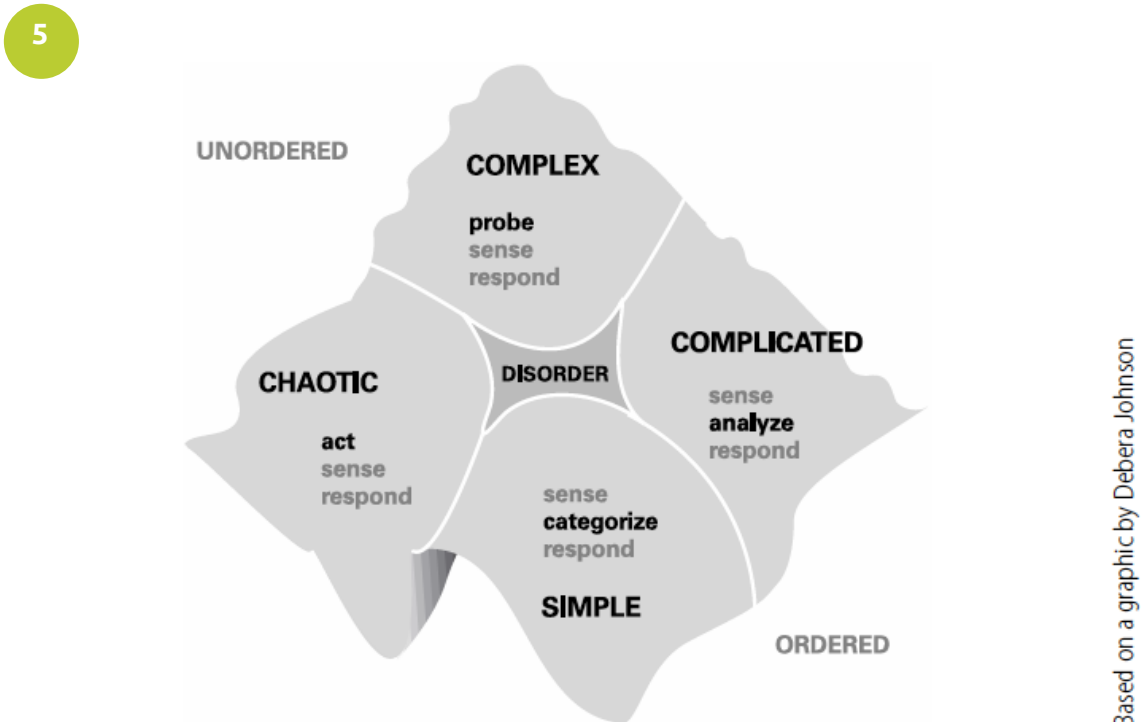
### 4.2.1 Simple - Complicated - Complex - Chaos: An organisational management perspective on uncertainty

The *Cynefin*<sup>1</sup> model, used to describe problems, situations and systems provides a typology of contexts, guiding explanations and solutions that may apply. The framework draws on research into complex adaptive systems theory, cognitive science and anthropology and narrative patterns, as well as evolutionary psychology, exploring the relationship between man, experience and context proposing new approaches to decision-making and knowledge management in complex social systems, amongst others.

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<sup>1</sup> Cynefin is a welsh word, that commonly translates to habitat or place, though falling short of a precise conveyance of meaning. It was chosen to by D. Snowden to illustrate the evolutionary nature of complex systems, including their inherent uncertainty.

Organisational management scholars Snowden and Boone (2007) have identified five different contexts defined by nature of the relationship between cause and effect. Four of these - simple, complicated, complex and chaotic - require leaders to diagnose situations and to act in contextually appropriate ways, whereas the fifth - disorder - only applies when it is unclear which of the four contexts is predominant, as seen below.



**Fig. 5:** The Cynefin framework as presented by David J. Snowden and Mary E. Boone (2007), that helps leaders determine the prevailing operative context to make appropriate choices.

Out of the four contexts, simple and complicated require leaders to adhere to fact-based management as they are ordered. Simple contexts are argued to be the domain of best practice (sense - categorise - respond) and are characterized by stability and a clear cause-and-effect relationship in which the right answer often is self-evident and undisputed. This is the realm of the “known unknowns” and all parties share an understanding resulting in unquestioned decisions<sup>2</sup>. Complicated contexts on the other hand, are argued to be the domain of good practices (sense - analyse - respond) that may contain multiple right answers and though a clear relationship between cause and effect can be drawn, not everyone necessarily can spot it. This is the realm of “known unknowns” and requires expertise, investigating several options, for instance a customary approach to engineering. A leader must listen not only to the experts but also embrace novel thoughts and solutions from others; requiring a willingness to experiment and often involving more creative approaches such as brainstorming or tools like games to trigger novel thinking (Snowden, Boone, 2007).

Complex and chaotic contexts however, require leaders to utilise pattern-based leadership as they are unordered. Complex contexts are argued to be the domain of emergence (probe - sense - respond) as they introduce unpredictability and flux. This is the realm of the “unknown unknowns” and it is the domain to which much of the contemporary business has shifted (Snowden, Boone, 2007). Leaders are required to patiently allow for a path to emerge, as why things happen can only be understood in retrospect. Chaotic contexts on the other hand are the domain of rapid response (act - sense - respond) as this is the realm of the “unknowables”. The relationship between cause and effect are impossible to determine as they shift constantly and no manageable pattern exists. However the chaotic context lets innovation thrive as openness to novelty and directive leadership are accepted in these situations more than in others. In times of high uncertainty a leader is required to manage both chaos and innovation in parallel through a deep understanding of context, an ability to embrace complexity and

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<sup>2</sup> As the authors explain, in the Cynefin Framework, simple and chaotic are adjacent to one another, as the most frequent collapse into chaos occur due to success having bred complacency. This shift can result in catastrophic failure as shown by the many previously dominant technologies that were suddenly disrupted by more dynamic alternatives.

paradox and a willingness to flexibly change leadership style.

#### 4.2.2 Discovery-driven planning and emergent strategies: Cause and effect and 'craftsmanship'

Once the operational context has been identified, how do successful strategies emerge? Following an HBR article in 2008, the high failure rate of smart companies in a new space shouldn't be a surprise: an overwhelming amount of evidence suggests that companies entering new markets tend to start with the wrong strategy (Anthony, Johnson, Sinfield, Altman, 2008). Hence, in organisational management and strategic literature the so-called emergent strategy, has become a popular concept, as – instead of relentlessly following one possible 'deliberate' strategy, that turns out to be flawed or just simply wrong – a strategy instead can emerge from the market itself.

Following management theorist Clayton M. Christensen, “out of this complexity emerge a few stunningly simple and consistent factors that have repeatedly determined the success and failure of the industry's best firms. Simply put, when the best firms succeeded, they did so because they listened responsively to their customers and invested aggressively in the technology, products and manufacturing capabilities that satisfied their customers' next-generation needs” (Christensen, 1997, page 4). He acknowledges though, that paradoxically they also tend to fail for the same reasons, hence knowing when keeping close to customers is beneficial, is key. According to him, an element of experimentation and taking learning seriously, is key as illustrated in Honda's case of Japanese Supercub bikes in north America (Christensen, 1997, page 172), that had to test their business model and pivot before success started to show. Consequently, one key aspect is planning to learn versus planning to execute as “failure is intrinsic to the search for initial market application” (Christensen, 1997, page 180). In strategic literature, so-called Discovery-driven planning, which requires managers to identify the assumptions upon which their business plans or aspirations are based on, “works well in

addressing disruptive technologies” (MacMillan & McGrath, 1995, page 4). In the example of planning for Disneyland Paris in 1986, extrapolating experiences from various previous sites did not work as those were based on untested assumptions about the working business model (MacMillan & McGrath, 1995) that is still not paying off today (Time magazine, 2012).

In strategic literature, so-called emergent strategy is a related concept that has broadly been investigated by scholars. As already discussed as an phenomenon during an era of ferment, strategies and actions of actors within are co-influenced by each other, rendering chosen strategies emergent at the same time (Bijker and Law, 1992). From a strategic literature perspective, scholars and practitioners have closely been investigating how to best manage those emergent strategies, drafting manuals and guidelines (Altman, Anthony, Johnson, Sinfield, 2008). Scholars argue that innovators in highly uncertain circumstances follow an emergent strategy in which a deliberate acknowledgement of ‘unknowns’ and assumptions (Christensen, 1997) is used as an approach to facilitate the right strategy to emerge by picking an early point of learning and adjustment, adjusting their strategy accordingly and repeating that behaviour. This is done through identifying critical areas of uncertainty, executing smart experiments and adjusting and redirecting based on the obtained results (Altman, Anthony, Johnson, Sinfield, 2008). However, an obvious shortcoming though remains, in how to do the actual product development and how designing those smart experiments is done in practical terms.

People and companies need strategies to deal with the rapid pace and uncertainty and following Clayton M. Christensen: “Markets that do not exist cannot be analysed: suppliers and customers must discover them together” (Christensen, 1997, page 165). Not only are the market applications for disruptive technologies unknown at the time of their development, they are unknowable.

Building on the works of scholars like Henry Mintzberg, effective strategies are crafted, rather than purely rationally controlled and systematically analysed facts of markets, competitors, company strengths and weaknesses that follows orderly thinking, but rather action-driving

thinking (Mintzberg, 1987). As when crafting an object, shortages, limitations and errors become opportunities and stimulate creativity. Hence, “large companies often surrender emerging growth markets because smaller, disruptive companies are actually more capable of pursuing them”, (Christensen, 1997, page 192) Though start-ups lack resources, it doesn't matter, their values can embrace small markets, and their cost-structures can accommodate lower margins. Their market research and resource allocation processes allow managers to proceed intuitively and more easily embrace an emergent strategy in order to succeed.

#### 4.2.3 Effectual reasoning - beyond decision-making heuristics rooted in prediction and causation

Hence, what is perceived by established and larger companies as a threat can be perceived by smaller firms and entrepreneurs as an opportunity. With several decades of research on entrepreneurship, scholars have formulated numerous definitions on what an entrepreneur is. Arthur Sullivan and Steven M. Sheffrin (2003) argue that an entrepreneur is an enterprising individual who builds capital through risk and/or initiative. Entrepreneurs emerge from the population on demand, and become leaders because they perceive opportunities available and are well-positioned to take advantage of them. An entrepreneur may perceive that they are among the few to recognize or be able to solve a problem. Joseph Schumpeter saw the entrepreneur as innovators and popularized the uses of the phrase creative destruction to describe his view of the role of entrepreneurs in changing business norms (Schumpeter, 1934). Creative destruction encompasses changes entrepreneurial activity makes every time a new process, product or company enters the markets.

In order to deal with the amount of uncertainty companies are facing these days, Saravathy's work (2008) aims to give insights to how entrepreneurs deal with the central aspects of innovation, using effectual reasoning. Saravathy's work on effectuation, a set of decision-making principles expert entrepreneurs have been observed to employ in situations of uncertainty (Wikipedia, 2012) give insights into an entrepreneur's way of thinking that



contrasts with the decision-making heuristics rooted in prediction and causation that focuses on achieving a specific goal through a specific set of given means. Effectuation is essentially an idea with a sense of purpose – a desire to improve the state of the world and individual lives. Effectual reasoning is based on a range of principles, that are as follows:

**1. Affordable loss principle**

*Start with your means. Don't wait for the perfect opportunity. Start taking action, based on what you have readily available: who you are, what you know, and who you know.*

**2. Bird in hand principle**

*Set affordable loss Evaluate opportunities based on whether the downside is acceptable, rather than on the attractiveness of the predicted upside.*

**3. Lemonade principle**

*Leverage contingencies Embrace surprises that arise from uncertain situations, remaining flexible rather than tethered to existing goals.*

**4. Crazy-quilt principle**

*Form partnerships with people and organizations willing to make a real commitment to jointly creating the future – product, firm, market – with you. Don't worry so much about competitive analyses and strategic planning.*

Those principles come together in an effectual cycle, meaning that the principles are not static, not one-time but rather a logic process. This work has been taken even further by the later works of Saravathy and Venkataraman (2011), that even goes further by suggesting that the entrepreneurial method is akin to natural method, that has evolved as pattern recognition at first, developing into a measurable, teachable method. Saravathy and Venkataraman argue that entrepreneurship can be the same, as certain patterns are starting to evolve. It has so far been handled as a category mistake, same as natural method back then, and a lot more empirical

research is needed. (Sarasvathy, Venkataraman, 2011). By giving insights into further research and posing a range of open questions, they outline certain trends and patterns, which is akin to how natural method came about and that in return have led to two main assumptions:

The entrepreneur as the magical being that spots the opportunities versus the opportunities rather a result of co-creation. Through the intersubjectivity of the entrepreneur, the opportunity can emerge.

However, it is noted that the arguments made are rather analytical and lack actual principles and examples. However, their hypotheses do open questions about the possibility recreate an entrepreneur's spirit and drive, their incentives and opportunistic thinking. Though Sarasvathy offers valuable insights into how entrepreneurs deal with uncertainty and outlining guiding principles of how they think and act, it is difficult for companies to replicate. Hence, the challenges of today's economy have given rise to philosophies and methodologies such as lean and agile, that enable companies to innovate, despite the obvious challenge of reproducing effectual thinking within.

#### 4.2.4 Innovation impetus - the right strategy, capabilities and values

Though the start-up setting may bring about a paradoxically advantageous setting of restrictions and attract people capable to think differently about opportunities and business, large companies such as Apple have shown to be highly innovative (Lashinsky, 2012), reinforcing that large companies can create disruptive innovations, just have to do it differently (Ashkenas, 2011).

This also highlights the fact that for instance design is a hugely important driver (Anderson & Tushman, 1999; Christensen, 1997; Lashinsky, 2012) as the grounds on which we compete have changed (Cooper, 2001). In today's experience economy (Pine & Gilmore, 1999), products compete beyond their purely technical functions. Furthermore, when investigating essentially

a service provider, selling practices and processes, a more scientific method, that can act as a tool to learn at rapid speed, as shown by Lean Startup methodology is highly promising set of principles. At the heart lies the central assumptions that IT and the internet have had a democratizing effect and hence has changed the game dramatically, as anyone can build, test and iterate at much greater speed and significantly lower cost, in order to formulate the right strategy and build a highly desirable product or service that users will pay for (Blank, 2009; Ries, 2011). Hence, some scholar and practitioners argue that the scientific method can act as a tool to learn at rapid speed, as shown by Lean Startup methodology, arguing for much more mechanic principles underlying the innovation process.

#### 4.2.5 Summary

To sum it up, arguably a lot of literature on strategic and organisational, however not that many authors have actual principles and tools of how to innovate in a certain operational context. However, due to discontinuous innovations are being characterized by their high degree of uncertainty and risk, often involving technologies that are often unproven, makes innovation projects usually last significantly longer at a greater managerial, organisational and financial commitment than their incremental counterparts (Christensen, 1997). The outcome of discontinuous projects are products and services often target nonexistent markets, or that have the potential to significantly shake up markets, rendering traditional market research insufficient or even redundant, requiring a new way to assess and test their market value. In order to understand better risk and uncertainty as vital components of disruptive innovations, larger companies need and want to learn from small businesses and entrepreneurs, who are responsible for most of the disruptive innovations facing those businesses. Furthermore, competition is based on more than just technological superiority (Anderson & Tushman, 1990) but also on the experiences that products and services provide for the user (Pine II & Gilmore, 1999), making design an important driver.

## **PART 3: Lean - Agile - Lean Startup: Learning rapidly, iteratively, constantly**

### **4.3.2 Agile Software Development and its origins**

In the search of being nimble and keeping change as an innovative force inside a medium or large-sized company, scholars and practitioners have been articulating best practices, that have become standard models of working also still today. One approach chosen at the studied case company Futurice, is agile, that has its roots in the concept of lean manufacturing. The following chapters will explore their origins and main principles, of the concepts of lean and agile, their similarities and differences, outlining their origins and some of their methodology. Furthermore it will be investigated how agile software development and design come together, where their touch points lie and what conflicts those bring about. Introducing Lean Startup thinking will explore a principled innovation approach rooted in those concepts, observed to be utilised by startups and argued to be applicable to bigger firms alike.

#### **4.3.2.1 LEAN: History and development**

*“Organizations that are truly lean have a strong competitive advantage because they respond quite rapidly and in a highly disciplined manner to market demand, rather than try predict the future.”*

*– Mary Poppendieck*

Essentially the concept of Lean can be understood manifold: as a management philosophy, a specific approach, a production practice or toolset to enable a certain way of organisational thinking. Underlying to all these perspectives is the outcome of value that can be measured and be brought about by a certain sequence of value creation and its particular conduction. Originating from the manufacturing revolution that Taiichi Ohno and Shigeo Shingo are credited with developing at Toyota, lean thinking is radically altering the way supply chains and production systems are run (Wikipedia, 2012). Among its tenets are drawing on the knowledge

and creativity of individual workers, the shrinking of batch sizes, just in time production and inventory control, and an acceleration of cycle times. Central to the lean thinking is the notion of value, defined as any action or process that a customer's willingness of paying for is given, and its ultimate drives hence lies within the concept of waste, which is hereby meaning anything that is not a value adding activity of any sort. In order to drive out waste of any kind and eliminating inefficient ways of working puts a strong emphasis on the overall system, operating as a whole in a (optimised) 'flow' – or the seamless production (sequencing) of value. Additionally, it introduces the concepts of kaizen and kaikaku, the incremental pursuit of perfection and the notion of radical improvement, respectively. Both aim at preserving value with less (as little) work possible. It assumes value to be measurable, utilizing empirical methods to prioritise and critically assess progress and efficiency. Some of the tools presented in the lean approach to identify and steadily eliminate waste (muda) to improve quality whilst production time and cost are reduced are 'tools' such as Value Stream Mapping, Five S, Kanban (pull systems) and poka-yoke (error proofing) (Poppendieck & Poppendieck, 2003).

These aim to investigate shortcomings and expose problems systematically, incorporating concepts of trusting the individual doing their work as well as learning and deferring decisions. The underlying principles that inform Lean production are eliminating waste, building in quality, creating knowledge, deferring commitment, delivering fast, respecting people and optimising holistically and is driven from the production floor up (Agile Manifesto, 2001).

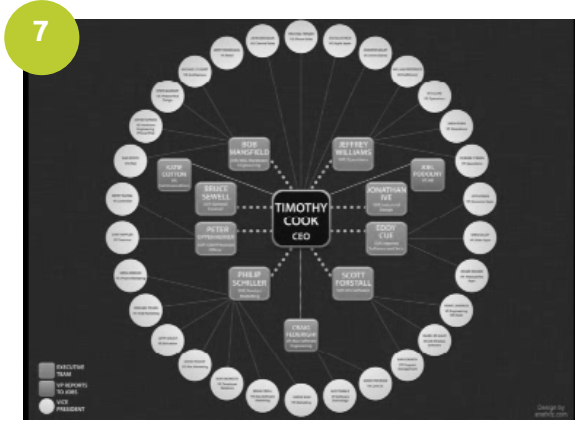
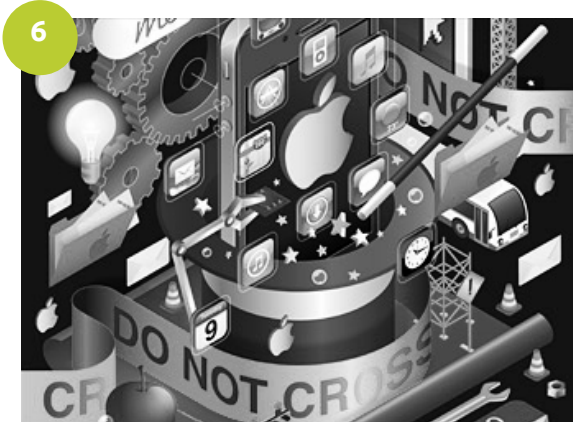
#### 4.3.2.2 Lean beyond manufacturing

Fortune senior editor Adam Lashinsky (2012) investigated how Apple remained its ability to move nimbly. It is the result of Apple thinking differently about business, staying lean through a ruthless corporate culture that disregards modern corporate conventions in ways that let it behave more like a cutting-edge startup (Lashinsky, 2011). Apple's culture of responsibility sworn to secrecy, attention to detail, constant feedback, is reinforced through a strict accountability mindset is at its heart. Additionally, secrecy has been found to be key to Apple's

organisational structure, in which decisions are swift, communication is articulated from the top through Jobb's Top 100 managerial tool that supports a command-and-control culture. There are functional division (not synergy that makes it work but unified team) that are highly focused. Apple's do-more-with-less mentality, in which saying no as important as saying yes and protos and demos always before spreadsheets, always puts small teams on crucial projects. Artificial resource restrictions and best-in-class approach that cuts out general manager structure, are further ways to reduce waste. Generally, Apple's culture and approach is not to be copied, but rather aspects of it can be adopted when seen fit.

Resonating with the idea of lean and reducing waste, are not just organisational and managerial implications, but also process-oriented, such as Ross Lovegrove's (2005) philosophy of fat free design. He argues that technology enables and facilitates lean and efficient ways of working, in a - by nature's ability inspired - way of designing by taking out anything extraneous. Hence technology allows to bring the natural process into (industrial) design processes, linking to ideas of cutting out the superfluous, being modular, embracing fractal ways of working and re-using.

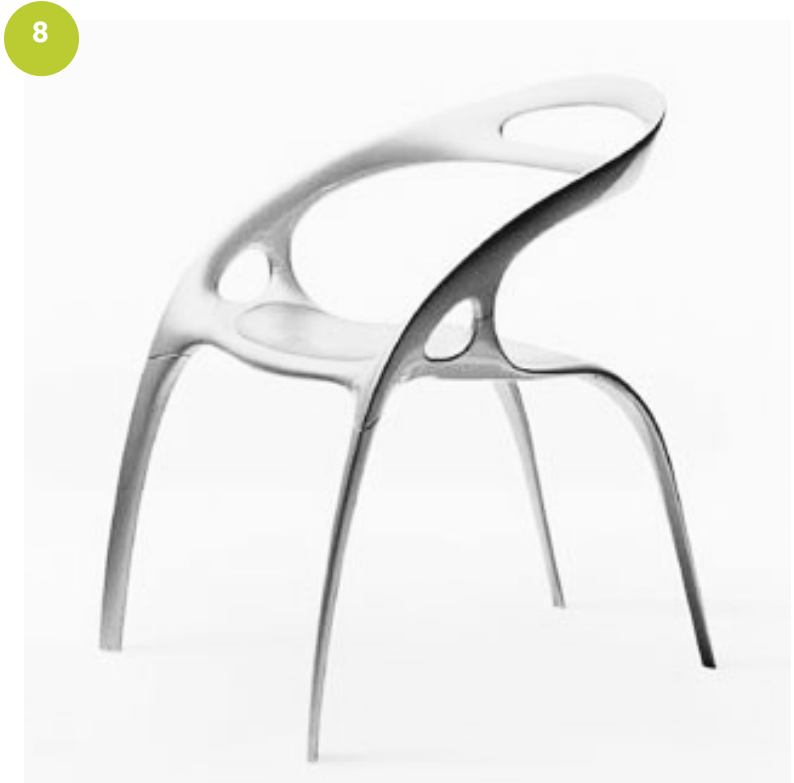
Software is ideal for the notion of lean, as it easily incorporates ideas of cutting out waste, working modularly and efficiently, as code can easily be changed, tested quickly and re-used immediately, making it a natural fit for the incorporation of lean principles as shown by the agile manifesto, a common process by which software is made (Wikipedia, 2012).



**Fig. 6:** Illustration by ILOVEDUST, depicting Apple’s culture of secrecy.

**Fig. 7:** Schematic illustration, depicting Apple’s organisational structure.

**Fig. 8:** Ross Lovegrove’s GO Chair, designed in 1998-2001 and produced by Bernhardt.



### 4.3.2.3 Agile Manifesto: Principles for better making software and making better software

Agile refers to a set of values and principles as stated in the Agile Manifesto developed in 2001 (Beck et al., 2001), that was a reaction to heavyweight methodologies popular in software development at the time. Its aim was to break away from the mainstream waterfall process deployed widely, in the search of a more human and process and outcome focused approach, discouraging from accurate plans, fixed contracts and meticulous documentation, embracing change and varying requirements that were common reality in software development projects (Wikipedia, 2012).

The term agile describes Mary and Tom Poppendieck's (2003) efforts to adapt the principles of Lean Manufacturing to fit into software development, with recurring but refined and targeted themes and values inherent in the Agile Manifesto:

- *Individuals and interactions over processes and tools*
- *Working software over comprehensive documentation*
- *Customer collaboration over contract negotiation*
- *Responding to change over following a plan*

Furthermore, in the pursuit of applying the lean thinking to the practices of software development, Mary and Tom Poppendieck (2003) have formulated a framework introducing a set of principles to implement the above themes through eliminating waste and amplifying learning by deciding as late as possible in the process and delivering constantly and as soon as possible, empowering the team and building integrity into the process and outcome.

Value and highest priority is the satisfaction of the customer that is achieved through early and continuous delivery of valuable (working) software (Agile Manifesto, 2001), which, in its own momentum becomes the measure, against which progress is assessed. The building of software



is understood as the learning process itself that is cultivated through feedback, iterations and through the evaluation of relevant experiences of the past. This quick delivery encourages early feedback and amplifies learning from concrete results, avoiding cost escalations by striving for easy maintainability as "on average, more than half of the development work that occurs in a software system occurs after it is first sold or placed into production. (Poppendieck & Poppendieck, 2003, page 49). As typically in software development projects, teams are self-organized, they are empowered through taking responsibility for the quality of the product, that fuels motivation, trust and support as the product is promoted from a holistic viewpoint built on a shared understanding. Exemplified methods, as advocated by the Agile Toolkit (extract):

### **1. Scrum**

*Utilizing mechanisms of empirical process control, where feedback loops that constitute the core management technique are used as opposed to traditional command-and-control oriented management.*

### **2. Test driven Development**

*Relies on the repetition of a very short development cycle: first the developer writes an (initially failing) automated test case that defines a desired improvement or new function, then produces the minimum amount of code to pass that test and finally refactors the new code to acceptable standards.*

### **3. Extreme Programming**

*Intended to improve software quality and responsiveness to changing customer requirements, advocating frequent "releases" in short development cycles (timeboxing), which is intended to improve productivity and introduce checkpoints where new customer requirements can be adopted.*

There are many other specific tools and techniques, such as burn down charts or pair programming (Poppendieck & Poppendieck, 2003) that are typically known for different

agile methodologies, that will not be discussed more closely in this thesis due to its scope, however can be easily explored further through literature (Poppendieck, Poppendieck, 2003). Furthermore, some of the elements of Toyota's lean approach have recently been rediscovered in software development with the emergence of lean IT and lean software development, both evolutions of agile methodologies (Cyrillo, 2011).

#### 4.3.2.4 Challenges of Agile in integrating design and business aspects - Clash of the titans

In the face of Agile's relatively short history in the broader view of software development, scholars and practitioners have identified serious shortcomings and obstacles when adopting and integrating Agile processes to their work, and more specifically the successful integration of user experience<sup>1</sup> (UX) design - the experiential, affective meaningful and valuable dimension to product use - to agile processes (Agathos, Coatta, Gosper, Rutter, 2011; Cecil, 2006; Lievesley, Yee, 2006) as well as an iterative and holistic business perspective - adjusting the underlying business, sales channels, to name only a few (Miller, Sy, 2008; Ries, 2011) - to the overall product or service that is being built. Practitioners' and scholars' efforts on optimizing agile user-centred design have resulted in vast explorations by scholars and especially practitioners of key shortcomings and identification of best practices for injecting a holistic vision, customer insights and iterative feedback loops into the agile process (Sy, Miller, 2008).

##### ***1. Process-related issues***

Some of the fundamental challenges stem from the fact that agile is first and foremost a developer-centric approach, as developed by and for developers, rendering most of the discussion geared towards software developers (Budwig, Jeong, Kelkar, 2009). "We can be agile by the book, however UX and UCD are not mentioned in that book but are essential for getting started on the first chapter" (Gothelf, 2009). It assumes a body of knowledge to be predefined or obtained (Lievesley, Yee, 2006), complicating discussions on users when they

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<sup>1</sup> According to ISO 9241-110:2010 (clause 2.15), user experience is defined as: a person's perceptions and responses that result from the use and/or anticipated use of a product, system or service.

are poorly defined (Rutter, 2011). Agile in its nature starts from production code (close chasm between user stories and their according implementation), assuming perfect and gap-less understanding from product owner's point of view of the users and the connected business (Agathos, Coatta, Gosper, Rutter, 2011). Though it excels at delivering an efficient and well working outcome, previously defined externally, by leaning on incremental value through incremental trial and error, instead of iteration that may bring about a more drastic change of course or may even demand a pivot (Ries, 2011). Hence, feedback, whether related to end user feedback or metrics obtained indicating business logic assumptions to be flawed, seems – due to the nature of Agile's rather rigid process – not sufficiently addressed (Miller, Sy, 2008).

Furthermore, the overall product development process itself inside agile companies seems to follow a waterfall approach, a sequential, downward design process, in which agile is only a component to be organized differently, bringing about problems of integrational nature. Due to Agile's rapid speed repeatedly too little time for testing needed, has been reported, as well as agile not being conducive to a centralized UX team (Miller & Sy, 2008).

## ***2. Design-specific issues***

The complexity of this issue is driven by various schools that contribute to it, the design field tangent to software development is manifold and complex. Unclear which disciplines are involved and how do they shape and work with each other – how those come into the 'production sequence'. For the scope of this thesis I will focus this discussion to UX design and Service Design, coming from UCD incorporating usability issues, but also higher levels of design, as many design fields conflict. It has been acknowledged that even professional UCD practitioners rarely complete repeatable and systematic methodologies (Schaffer, 2004).

Design professionals have primarily been focused on the challenge of incorporating user centered design (UCD) “.. into an extremely fast-paced development process that uses little documentation” (Hay, 2011). UCD involves a variety of techniques that provide insights into users' wants, needs, and goals, including ethnography, contextual inquiry, contextual

interviewing, usability testing, task analysis, and others (Cecil, 2006), that make design asking the fundamental questions (Lievesley, Yee, 2006). When including Service Design into this picture, as increasingly done so by major software development houses (Futurice, Reaktor, Palmu Inc.), incorporating approaches and methods from wide variety of fields, such as UX, IxD, UCD, HCI, product and graphic design, marketing and psychology, business strategy or ethnography, embracing exploration and surprise for a more higher-level, holistic and radical system thinking (Hay, 2011) it conflicts with Agile's suitability for iterative work on lower levels of the system.

As a result of the cultural clash of various disciplines working together, as a UX interaction designer one seems to be having to be prepared to demonstrate "any changes you're recommending are based on substantive evidence, not just some intuitive or anecdotal sense of the users' needs" (Gosper, 2011, page 59). However, as UX design focuses on lived experiences (Kaye, 2007) and is subjective and thus needs to be measured beyond usability, but include other subjective qualities (Law, Hoonhout, Obrist, Roto, Vermeeren, Väänänen-Vainio-Mattila, 2010), posing difficulties with Agile's focus on velocity (Fichtner, 2012) and hence conflicting with Agile's more rigid nature. Naturally, a designer's accountability is another major issue, as not a heroic design but rather one that is tested with end customers is sought for, which often lack of resources (Miller & Sy, 2008) and are run in parallel with agile, rather than being incorporated (Agathos, Coatta, Gosper, Rutter, 2011). Closely linked to this issue is the fact that the effectiveness of UX seems hard to be quantified or measured (Law, Hoonhout, Obrist, Roto, Vermeeren, Väänänen-Vainio-Mattila, 2010) in terms of ROI.

As the overall experience of a system or service fits into a much greater context, agile is primarily concerned with building, whereas design is much more closely linked to learning, by discovering the problems to design for. Practitioner's insights on successfully integrating UX into Agile, include an increased overlap between the work of team members in various disciplines, changing their social and cultural interrelationships, instilling increased cross-disciplinary empathy and understanding, but also replacing traditional document-centred

communication (Ramsay as quoted by Six, 2011)

### **3. Business-related issues**

As Agile starts from requirements and production code, though when considering requirements and roadmaps from business units, they often tend to be unclear and poorly defined (Budwig, Jeong, Kelkar, 2009). As standing in stark contrast to the concept of emergent strategies, characterized by constant learning and adjustment, the overall product, marketing and business strategy is presumed to be fully formulated before any implementation through Agile. Hence, Agile being a highly optimised and measurable process, the question needs to be posed if the ‘right’ things are being measured, and if not how to find out.

Additionally, a lack of business relevant iteration is characterising the agile process, as agile does not offer a path to pivoting – business aspects are lacking – as progress is measured with velocity (Fichtner, 2012, referring to a teams productivity, that should be maximised at all times (Cyrillo, 2011), instead. Though, Agile aims at taking the waterfall out of software development (Poppendieck & Poppendieck, 2003), it does so as part of the project, not the entire process though. As many practitioners have stated (Miller, Sy, 2008; Budwig, Jeong, Kelkar, 2009), despite the promises of existing concepts of lean and agile, success-critical assumptions and hypothesis constantly fail to be validated:

*“I was a devotee of the latest in software development methods (now collectively known as agile development), which promised to help drive waste out of product development. However, despite that I had committed the biggest waste of all: building a product that our customers refuse to use.”*

*- Eric Ries, Lean Startup*

This illustrates well one of the major shortcomings of agile and lean thinking that concentrates heavily on building working, efficient software to specified requirements, eliminating waste during the process, but failing to acknowledge user needs and wants as well as validating business hypotheses linked to the success of the product often referred to as missing the big

picture (Miller & Sy, 2011; Agathos, Coatta, Gosper, Rutter, 2011; Budwig, Jeong, Kelkar, 2009). Learning is perceived as incremental and dependent, not radical and direction changing<sup>2</sup> (Ries, 2011).

#### 4.3.2.6 Discussion and relevance

Lean thinking is clearly stating its ambitious goal to drive out waste, however scholars and practitioners have been arguing over how to exactly achieve that, whereas Agile on the other hand offers concrete examples and methods when it comes to software development. The notion of waste in terms of design is a lot harder to grasp and its integration into Agile remains a challenging one (Rutter, 2009). As Futurice is constantly striving to not only greatly enhance ways of working, but also improve their primary focus, customer satisfaction, insights on how to better cross those chasms are considered to be of high value.

As it has been shown, the agile school offers precise methods and specific ways of working efficiently and rapidly, however it has been criticized for the integration challenges it poses to UCD design as well as its inability to take into account underlying business aspects and opportunities to pivot. Many practitioners haven given insights in how to overcome and more closely bring together both agile and design (Miller, Sy, 2008; Budwig, Jeong, Kelkar, 2009), due to different design fields contradicting and sheer variety of fields involved, that in part conflict with agile practices that assume a rather deterministic starting point in terms of user and business requirements and consequently the final outcome, with design's iterative and exploratory nature.

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<sup>2</sup> Following Ries, contrary to traditional product development, which usually involves a long, thoughtful incubation period and strives for product perfection, the goal of an MVP is to begin the process of learning, not end it. Unlike a prototype or concept test, an MVP is designed not just to answer product design or technical questions. Its goal is to test fundamental business hypothesis (Ries, 2011, page 94).

### 4.3.3 The Lean Startup

*“As organizations struggle to stay nimble in the face of an ever-changing marketplace that is disrupted constantly by incumbents as well as start-ups, getting to market fast becomes top priority. Engaging in long drawn out design cycles risks paralysis by internal indecision as well as missed windows of market opportunity. In other words, by the time the company decides internally how the product should be designed, the needs of the marketplace have changed”*

*– Jeff Gothelf, 2011*

As recent advances in the theories and practices of entrepreneurship have focused on the need for theoretical frameworks and methods to understand and approach entrepreneurship as complex social systems, a methodological focus can be observed. As product development research has come a long way, fuelled by advances of lean thinking to improve manufacturing and processes, a focus on customers can be observed.

Agile and Lean startup communities are both in excitement and conflict over the new movement: “[Lean Startup] rocks – it rocks far more than Agile” (Kerievsky, 2009), as it “makes the best part of agile more lean and combines them with the brilliant customer development process”. Though it is a fairly new ‘movement’, the responses have been manifold. Due to entrepreneurs’ and startups’ ability to heavily focus efforts in this technological era of ferment, the lean startups aims to answer some of the challenges due to operating at the micro level. Furthermore, the traditional product development literature is argued to be lapsed and outdated and once revolutionary and widely accepted processes, such as the stage-gate process are only partly valid still, as – just as agile tried to get away from the traditional waterfall model – they are acknowledged to be too static and linear, conflicting with – as described before – the nature of technological innovations being cyclic and organic.

#### 4.3.3.1 Background & origins of the Lean Startup

The lean startup methodology was developed by Stanford University graduate and entrepreneur Eric Ries and published in 2011. It offers a scientific and hands-on approach to creating and managing startups, aiming to teach how to drive a startup – how to steer, when to turn and when to persevere – growing a business at maximum speed with as little waste as possible (Ries, 2011). Acknowledging that it may seem counter-intuitive to think that something as disruptive, innovative and chaotic as a startup can be managed, Ries argues that they must be managed, though counter-intuitive to startup's dynamic, innovative often chaotic nature.

The Lean Startup is based on the principles of Stanford University professor Steve Blank's Customer Development Model as outlined in his 2010 publication *4 steps to epiphany* in which he argues that most startups fail (90%) because they only follow the traditionally well-established product development process. However, it does not give any value to whether marketing efforts will work, if sales will work because none of those strategies are tested. Hence he suggests a parallel process to traditional product development, that he coins the customer development process, that successful startups consciously or unconsciously have been observed to follow. This process is primarily concerned with discovering and validating actual customers, their needs and wants to understand and verify the underlying business model, by following basic concepts such as getting out of the building (GOOB) (Blank, 2010).

The Lean Startup, incorporating and building upon Blank's work, is a principled approach to a new product development, aiming to tackle the problem with most entrepreneurs' plans being "generally not that they don't follow sound strategic principles, but that the facts upon which they are based are wrong. Unfortunately, most of these errors can not be detected on a whiteboard because they depend on the subtle interactions between products and customers" (Ries, 2011, page 91), linking to Saravathy's work on effectuation (Saravathy, 2007).



### 4.3.3.2 Principles of the Lean Startup

The book is based on altogether five principles, including the conceptual broadening of the notion of ‘an entrepreneur’ that according to Ries is closely linked to his conceptualisation of a startup; “a human institution designed to create new products and services under conditions of extreme uncertainty” (Ries, 2011, Page 8). Following this, the author assumes ‘the institution’ to be in need of management specifically geared towards its context of extreme uncertainty, that derives from the third principle of scientifically validated learning, based on frequently running vision elements testing experiments. Hence, according to Ries, any underlying process should be geared towards the fundamental activity of learning; of turning ideas into products, measuring customer responds as well steering through pivoting or persevering, where innovation accounting provides the basic measures against which progress is measured and milestones and prioritisation are laid out. The Lean Startup is based on the following five key principles:

#### **1. Entrepreneurs are Everywhere**

*By significantly broadening the definition of entrepreneurs as being essentially human institutions that create value, Ries suggests the broad applicability of Lean Startup beyond the startup sphere and beyond people’s professional titles and occupations.*

#### **2. Entrepreneurship is Management**

*Startups must be managed and there is a systematic underlying approach in doing so. Furthermore, the second principle suggests that the management of startups is a repeatable, teachable method.*

#### **3. Validated Learning**

*The key activity in any value-creating human institution is learning, that can be validated and accounted for. It is linked to the fundamental question of what needs to be learned and how that is achieved, suggesting simple scientific experiments to yield insightful, actionable learning (metrics) as an outcome.*

#### **4. Innovation Accounting**

*Innovation accounting refers to the way progress is measured, how milestones are being set up and how work is prioritised. It incorporates ideas of vanity metrics versus insightful, actionable metrics.*

#### **5. Build-Measure-Learn**

*Building a successful product or service is an action-driven activity, that measures how users react and adjusts accordingly through pivoting or persevering. It suggests that what is being build, can and must ultimately be measured, answering to something specific, with the ultimate aim of learning, that is achieved through a cyclic, iterative and continuous process.*

Following Ries's work, practitioners of various communities have started building upon his insights. Giff Constable's work gives insights on how Lean Startup can be adapted to existing organizations, focused on creating value (Constable, 2012). He stresses the need of small, goal-driven, cross-functional teams, each tasked with improving a critical business metric. According to him, features need to begin as hypotheses to be tested before heavy investment and they come not just with acceptance criteria but success criteria. Any feature has to start as a minimum valuable feature, that then is iterated. Generally he notes that proof needs to carry more weight than opinion and that the team needs to talk to real customers on a regular basis, including in-person. The team should work in agile sprints, with close collaboration across all roles, communicates regularly with the rest of the organization, being transparent about priorities and work-in-process. Furthermore, each team should have regular checkpoints where decisions to stop, change, or pursue the critical business metrics, are taken (Constable, 2012).

Startup accelerator programme Y Combinator (YC) has integrated Lean startup principles to their 'curriculum', with the mantra of focussing on customers whilst ignoring investors, resulting in teams going through YC getting one important push: one team member focuses on

product (=build), whilst another team members focuses on users (=get out of the building).

#### 4.3.3.3 Shortcomings and criticism towards the Lean Startup

Generally agreeing on the Lean Startup methodologies and praising this cross-disciplinary and holistic approach, based on the discussion and challenges posed by the Lean Startup, the public debate has started to evolve how to successfully create and design the required experiments necessary for achieving validation, causing confusion and conflict amongst various professional communities.

Some practitioners have started evangelizing UX toolkits as the necessary complementary skills in order to vision, steer and accelerate, giving rise to the coming about of Lean UX, that is closely linked to the recent rise of the Lean Startup (2011) methodology, exacerbated due to the denunciation of “professional bandwagoning” (Bryan, 2012). There seems to be general agreement amongst various (web) sources that the term Lean UX itself was coined by the blogger Luxr and more specifically Janice Fraser, describing as Lean user experience being “a cross-functional, principle-driven process characterized by rituals that predispose teams to predictable, high-quality, high velocity user experience outcomes” (Fraser, 2012), arguably lacking of formalization. It can be argued though, with the rise of tools for Analytics and lean frameworks, better than ever before one can measure the actual business impact of design decisions made by UX people (Hay, 2012). Having entered an era of continuous beta testings (Fraser, 2012) and deployment, bringing about concepts such as re-alignment - versus complete re-designs - in designing for digital (Hay, 2012). Furthermore, from a development perspective, voices are growing louder for writing tests before actual design starts, implying knowing what needs to be measured before designing (experiments for) it. Furthermore, there seems to be conceptual and methodological confusion over the Lean Startup methodology, as indicated in the ongoing Minimum viable product (MVP) versus Minimum desirable product (MDP) debate, as designing an experience is the overarching goal. “The ladders is not a nascent startup that can afford to risk its existing brand awareness and values with the release of

minimally viable feature sets. These feature sets can be light but must adhere to (or exceed) the experience to which our paying member base has grown accustomed” (Gothelf, 2009).

Lean UX’s core is to challenge the traditional sequential approach (waterfall model) and to define design and development as a “solution-finding team” that follows a dynamic, lightly documented process (Cyrillo, 2009; Gothelf, 2009; Fraser, 2011). It is said to be furthering companies that have adopted an agile approach successfully, to take the next step in integrating the full UX and software process (Author, year). Another core ideas behind Lean UX is viewing each design iteration as a hypothesis. Gothelf argues one needs to validate “the hypothesis from both a customer and business perspective. The more wrong paths you can uncover quickly, the less time you are pursuing the wrong hypothesis.”

However, this ‘mantra’ as such is nothing new, as already described in strategy literature as the ‘key to success’: “The key to success: Invest a little, learn a lot ..” through knowledge-building exercises and experiments (Fraser, 2011), following a simple 3-step model of 1. *Identifying critical areas of uncertainty*, 2. *Executing Smart Experiments*, 3. *Adjust and Redirect*, with all steps following key principles of: *Make a prototype before you build. / Test before you commit. / Borrow before you buy. / Contract before you hire. / Outsource before you ramp up. / Research before you execute.* As Janice Fraser put it at a conference: “Invest in dollars, spent in pennies” (Fraser, 2009).

The suggested approach from the strategic school of thinking is extremely similar to what UX experts have to offer in exact skills (localizing a launch, using employees for beta testing, spending a day in the life of your customer, to name only a few), which is where Lean UX takes its main line of argumentation. Following from this, there practitioners criticise Lean UX as a buzzword, as it simply presents a new description for what people in the user experience realm already do (Gothelf, 2009) with concepts such as “probe and learn”<sup>3</sup> presenting well-known

3 A recent study of this phenomenon [Lynn et al., 1996] reached the conclusion that conventional marketing techniques proved to be of limited value at best, and were often wrong in these environments. What proved to be more useful, they found, was what they termed the “probe and learn” process. In this process, the companies “developed their products by probing potential markets with early versions of the products, learning from the probes, and probing again. In effect,

and commonly used methodologies. Some on the other hand argue that Lean UX is essentially applying the scientific method and is to be regarded rather a marketing phenomenon:

*“For all the Lean Startup’s emphasis on the scientific method, no one knows whether it really works. An argument can be made that the companies cited as Lean Startup success stories aren’t strictly evidence of Ries’ wisdom. Dropbox famously debuted with a video depicting a beta of its yet-to-be-released product—spurring 70,000 users to sign up for the service within 24 hours.*

*But the company didn’t base its entire strategy on Lean Startup principles.”*

*- Subramanian, as interviewed by Greenwald, 2012*

Additionally to that, the argument has been brought forward, that though lean startup elements, but maybe not entire strategy (Bryan, 2012), it being essentially strategic (Gotthelf, 2009) as opposed to pragmatic like the agile UX approach, as it is : “a related way of working that uses design thinking, lean startup, agile, and UX methods to go after value. Agile UX on the other hand is a set of practices that UX practitioners can use to integrate into agile development processes” (Seiden, 2009). Design beyond purely aesthetic, but every design decision essentially being a business decision as well (Ries, 2011).

There seems to be a hype about lean, as startups consciously try to stay ‘fat free’ also in terms of financial means, following Mintzberg’s hypothesis of shortcomings turning into opportunity and enhancing creativity (Mintzberg, 1987). “The presentation catalysed a movement. Start-ups everywhere adopted a lean, low-burn, low-investment model. “To this day, companies seeking funding at [our] venture firm, Andreessen Horowitz, proudly proclaim in their pitch decks that they are raising tiny amounts of capital so they can run lean” (Horowitz, 2010), turning running lean into an end, risking running out of cash. The rapid speed, and minimal operational cost is highly attractive to not only companies, but also governments and public institutions as a way to innovate. Criticism towards the Lean Startup and related Lean UX stems from the fact of

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they ran a series of market experiments — introducing prototypes into a variety of market segments.” This process, as described, understands the nature of emerging markets and uncertain technology. Probes are simply “feelers” to get a better sense of the market.

both presenting relatively recent fields of investigation, and despite its wide and enthusiastic adoptance, with to date only a small number of evangelists, yielding few empirical cases and no academic research.

Despite the criticism Ries is facing, he believes “a company’s sustainable path to long-term economic growth is to build an ‘innovation factory’ that uses lean start up techniques.” (Ries, 2011, Page 34) Customers at the end of the day are breathing, thinking, buying individuals. Even when one is selling to large institutions, as in the business-to-business model, it helps to remember that those businesses are made up of individuals. “All successful sales models depend on breaking down the monolithic view of organizations into the disparate people that make them up” (Ries, 2011, page 88). Hence, it can be argued that Ries’s model looks very attractive and thus has reached high traction, by – in a simple and straight forward manner – stress focus, efficiency and progress, offering great promise to not only startups but also medium-sized companies and large enterprises that are trying to innovate their own service and products.

#### 4.3.3.4 Keypoints

Ries is one of the first, aiming to deconstruct, analyse and reproduce the processes observed to be applied in startups, operating under high uncertainty with great limitations in regards to, for instance, finances and resources. The outlined principles show deep domain knowledge, though of purely autobiographical nature. As research on related topics is scarce, there seems to be a need for validation and further empirical and scholarly work, as there is an evident lack of scientific backup and proof.

However, with practitioner’s communities in excitement, as Ries seems to have addressed issues and challenges concerning practical work (agile and UX integration) in professional communities. Underlying ideas such as getting out of a project mindset (Gothelf, 2009), breaking down silos (Fraser, 2009) and working goal-driven, outcome-focused (Fraser, 2011) resonate deeply with practitioners, explaining some of the immense traction this ‘movement’

has reached. Though arguably utilising the essentially the scientific method, it draws on empowering teams through actionable knowledge obtained, presenting accountability to make decisions affecting not only incremental parts but may potentially inform and affect the underlying business logic.

*“The real power lies with the people deeper in the organization who decide which proposals will be presented to senior management.*

*What are the corporate factors that lead mid-level employees to ignore or kill disruptive technologies?”*

*- Christensen, 1997*

#### 4.3.3.5 Summary

The Lean Startup presents a highly promising set of principles that focus on generating value by focussing in on the user, the product and the underlying business logic, that are argued to be equally important when creating innovative products and services. The principles in their nature are simplistic, yet seem easily adoptable, making it possible for companies to not just imitate startups, but rather integrate the outlined principles as found suitable for the specific environment.

Hence the promise for the Lean Startup methodology concerning its applicability to any sized company, equals a hypothesis or assumption itself, demanding empirical testing and validation, which restates the aim of this thesis.

With proper foundation, lean startups can grow to become lean enterprises that maintain their agility, learning orientation, and culture of innovation even as they scale.



5

# 5. Futurice

According to Ries, “with proper foundation, lean startups can grow to become lean enterprises that maintain their agility, learning orientation, and culture of innovation even as they scale” (Ries, 2011, page 182). Thus, the following chapter presents a synthesis of the gathered research and insights for mapping Futurice’s culture, aiming at providing an overview of Futurice as a company, its history, describing its culture, company structure, strategy and values. The synthesis is based on personal experience of working at the company for over a year, tacit knowledge gathered, company artefacts, informal talks, interviews, focus group discussions, observations and workshops. Additionally to that, during the data gathering process, a range of visualisations were co-produced, to aid and stimulate the discussions, lending themselves to the documentation process at the same time, that can be found from the appendix, along with interviewees names and titles as well as the project case descriptions.

## 5.1 Background

Futurice is an IT vendor, that provides high quality software on demand, that often involves tailored solutions (JT) with projects mainly carried out around web and mobile technologies and solutions. Though software being the core of the company, the service portfolio includes business consulting as well as design and life-cycle management and training, in an attempt to offer holistic, full-circle expertise (MC). As part of the Deloitte Technology Fast 50, Futurice had been placed first in 2008, 5th in 2006<sup>1</sup> and 13th in 2007<sup>2</sup>, making it one of the fastest growing companies in the Finnish information technology branch (Wikipedia, 2012).

As a contractor, the ways of working within the company are strongly influenced and dependent on according customer’s ways of working (MC, TT, PH), and is rendered through their degree of familiarity with agile and the technology in question (PH).

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1 [http://www.deloitte.com/dtt/section\\_node/0,1042,sid%0253D144717,00.html](http://www.deloitte.com/dtt/section_node/0,1042,sid%0253D144717,00.html)

2 <http://www.deloitte.com/dtt/article/0,1002,cid%0253D183098,00.html>

## 5.2 History - past & present

### 5.2.1 Early years as a startup

Originally founded in the year of 2000 by a handful of technology students from TKK (Aalto University, School of Technology), right after the internet bubble had burst, the company initially started off working on mobile technology, though an own product was being developed in parallel, that became known as Kuvaboxi; a photo sharing service that shows significant resemblance to the nowadays widely know Flickr service (MC), that was the biggest of its kind in Finland. However, the service was eventually sold in 2005, with the company reaching a pivot point turning its effort solely towards the contractor business. The transition to a software vendor resulted in establishing and affirming overall organisational structure of project-based sales that touched base in small first-off trial projects, driven by an urge of excellence and quality to becoming trusted referrals to secondary and continuation sales and projects.

### 5.2.2 Present situation as a fast growing medium sized IT vendor

As a result of a fast growth from 2005 when revenue amounted to 1 million € compared to this year's estimation matching 15 million €, the company, to this day, has grown to an about 150 person (Wikipedia, 2012) strong enterprise, with four legal entities across Europe, namely in Helsinki (FI), Tampere (FI) - established in 2008, Berlin (GER) - established in 2009, and London (UK) - established in 2012, and with a fifth one in Düsseldorf (GER) currently in the process of being set up.

The company's yearly turnover in 2011 amounted to 11.65 million €, with an increase of 25% in 2012 amounting to a current estimate of 15 million €. The expected turnover for 2013 is about 20 million € (TS). Generally, the EBIT is used as a company-wide measure to indicate progress made and shared amongst all employees on a monthly basis.

Futurice's business is to provide customers with software on demand, which is delivered in the form of projects as a service, aiming at a sound collaboration with the respective customer (JT). The company has thus far grown organically and has been awarded No. 1 in Finland and Europe in the Great Place to Work competition 2012.

### 5.3 Organisational structure

The overall organisational structure can be described as hierarchically low structure, as mere three levels are apparent, including employees, team leaders and managers, including the CEO. It has to be noted that Futurice's management generally follows a functional structure in theory, however has in practice adopted the latest of all: a team-based structure, benefiting from an overall flexibility that it offers. Furthermore, a divisional structure that is geographically determined exists, however none that is product and service-based.

Futurice is being described as lean and agile (MC, PH, JT, TT), basing daily actions and decisions on the principles of eradication of waste and empowering employees, enabling transparent decision-making on all levels (Brandbook, 2011, page 22), as the company structure evolves around flexible teams, micro teams, interest groups and such, claiming "Futurice gives everyone the opportunity to show their strengths. That's why we don't believe in strict hierarchies and set-in-stone job descriptions" (Brandbook, 2011, page 24).

### 5.4 Direct and indirect competition

Both direct and indirect competition was identified during the interviews and workshops with very different reasons towards the company offering. As closest, direct competitors, medium-sized Finnish software development houses and digital marketing agencies were listed, that is mainly faced through similar traditional software contractors such as Reaktor and Luxus, to only name a few. They are found to be competing on grounds of efficiency, quality, trustworthiness and customer satisfaction (MC). The competitors slogans highlight

the similarity in their marketing messages stressing those values (Reaktor: “We deliver results”<sup>3</sup>, Luxus: “We are Luxus. A digital marketing agency with a difference. (..) We are here to generate real results.”<sup>4</sup>) Also bigger-sized software houses such as Tieto, Accenture or Logica can be considered direct competitors, however are generally the preferred option, when involving large-scale projects and often public projects. Also on the other end of the scale, small companies such as Kisko Labs can cause competition as competing on similar grounds (Kisko Labs: “Kisko Labs makes people happy by solving their problems with digital services”<sup>5</sup>), promising to deliver at great speed.

Indirect competition is posed by other creative agencies such as Fjord, Idean, Palmu and Nordkapp. With Futurice having created an “all under one roof” software service (MC, JT) offer, competition also arises towards the ‘front end’ of the process encompassing consulting and design work. Though traditional design agencies tend to be prioritized for design related work, offering end-to-end solutions offer certain attractive advantages, including no hand-offs, fast and efficient overall development and implementable, highly tailored and usable designs that result in easily maintainable, functional software. As investigated, though Futurice is indeed considered design partner (JT) – all under one roof philosophy spearheaded before others, building trust and competencies for several years, the more traditional design agencies do overtake Futurice in their in-depth design offering, and diverse design portfolio. On the other hand, Futurice offers specific knowledge in the digital mobility domain with a strong focus on consumer services, which is perceived a strategic advantage by its customers (MC; Brandbook, 2011, page 12).

## 5.5 Value proposition and strategy

Futurice website’s front page promises *Smarter software, better business* which highlights the company’s efforts in branding themselves as a not only a software house, but a strategic partner

3 <http://reaktor.fi/en/>, as seen on 27.08.2012

4 <http://luxus.fi/>, as seen on 27.08.2012

5 <http://kiskolabs.com/#home>, as seen on 27.08.2012

that has broad expertise, exceeding merely technical ones, creating an imperative to think and act holistically (JT; Brandbook, 2011, page 18), which is in line with the Lean Startup principles. The services that are offered by the company include consulting, web solutions, mobile solutions, enterprise IT, life cycle management, training and events. The service offering shows broad capabilities that is captured by an effort to create a *brand of agile maintenance*<sup>6</sup>, that has trusted, small and highly skilled teams at its heart that provide high customer - and hence end-customer - satisfaction. According to the company's brandbook "Futurice's brand promise is that our clients will enjoy the process of working with us, as well as the end result." (Brandbook, 2011, page 20). Soft values are *transparency, trust, customer satisfaction* and *caring*, that are supported by practical principles applied in everyday life as discussed in the following 'culture' chapter in more details.

The overall strategy for the company can be extracted from a set of key goals formulated for the year 2015, developed in a strategy workshop in autumn 2011. Despite a range of numeric achievements, such as the employment of 300 people, 3000 Twitter and Facebook followers, as well as ten key accounts, there are five top goals that are on a more general level. They include reaching an ultimate way to do software, structuring sales, forming systematic cycles of improvement, accelerating company-wide learning and increasing quality assurance inclusion to projects to provide value. Following a key account strategy<sup>7</sup>, the company has consciously moved away from a previously predominant project-based sales strategy. Key account management is needed to shift perceptions<sup>8</sup> from a commodity or product supplier and its implications in terms of price sensitivity and loyalty to a value-add and partner relationship. Caring has been identified as a key differentiating factor and value (MC), to realise the deep, meaningful and value-adding partnerships sought for, highlighting the commitment and honest expert opinions, customers can expect from Futurice (SN; Brandbook, 2011, page 24).

6 <http://blog.futurice.com/defining-our-brand-of-agile-maintenance>, as seen on 1.8.2012

7 Key account strategy is based on the immutable business fact that 80 per cent of revenues come from 20 per cent of the customers. It therefore pays to focus on those key customers, making key account management one of the ways to ensure repeat purchases, additional purchases and referral to other prospective customers like themselves.

8 There are four levels of how a key customer may currently perceive the business in relation to theirs.

Within this strategic change, design was recognised as a central function to the value-adding offering, enabling to deepen existing customer-relationships to form strategic partnerships. Hence, the formation of key accounts builds on trust and varied competencies, with an ever deeper immersion into the business in question (JT). Design thinking and interaction design tools for instance are recognised as helpful to understanding the business and its end-customers archetypes. However, Lean Startup and Lean UX's approach to understanding all as a provisional hypothesis until the strategy has shown via validated learning "that [one] can serve this type of customer in a sustainable way" (Ries, 2011, page 90), and has widely been acknowledged as the main benefit of the Lean Startup towards Futurice's business (MC, PH, JT).

The perspective on what is current focal point and being measured is mostly done through questionnaires, however a prominent part of the company's overall means of assessment of progress made is the EBIT (TS) - or the earnings before interest and taxes - that gives important insight to how the company is run and communicated to the employees. The EBIT is communicated to the entire company on a weekly basis alongside with the closely related 'employee utilization rate' - the share of billable hours as reliable and accountable measure of individual profitability - that are shared and announced in weekly team meetings and are documented in a way visible to everyone else (JT). In those meetings, also individual numerical indicators such as project progress, bill-ability and individual workload are shared amongst the team, as well as more intangible factors such as overall mood and personal work satisfaction are subject to the discussion.

9



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**Fig. 9:** Image depicting Futurice's lean culture, encouraging employees to question what they are doing.

**Fig. 10:** Image of a poster found in Helsinki office, depicting the company's values.



## 5.6 Culture

When mapping the organization's culture, I am referring to Edgar H. Schein's work on culture<sup>9</sup>, as reflecting and encompassing practices, shared values and beliefs, and underlying goals and practices, with organisational research mostly being in agreement over. Critical aspects characterising the company culture, are the company's sociocultural heritage, the challenging times during which it was funded and established, and its rapid growth that followed. After having manoeuvred rather carefully during the tumultuously starting years, the subsequent rapid growth period was steered to be organic and controlled, however also further resulting in certain pain points such as staffing and team management (TT), as conserving the Finnish characteristics of humble, transparent and highly reliable and committed work, was to be sustained. Generally, people refrain from rigidity, as an agile and lean mindset is key to the company's operations (JT, TT). Hence, fundamental to the culture of Futurice are three guiding philosophies<sup>10</sup> that are:

### 1. ***"Make it easy"***

*Focusing on customer satisfaction as well as employees satisfaction, driving for constant improvement and learning , producing smarter ways of making software*

### 2. ***"Make it happen"***

*Listening carefully, putting effort into deeply understanding customer's needs and wants as well as the 'bigger picture' issues, constantly keeping the end-product in mind and how that will serve the customer's needs.*

### 3. ***"Always look at things from the clients point of view"***

9 "Culture": a pattern of basic assumptions—invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration—that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (Schein, 1985, p. 9)

10 as adapted from the Futurice Brandbook, p.22 ff

*Clearly and explicitly stressing a user (customer) focused point of view, taking into account their degree of familiarity with our ways of working (lean, agile) as well as the technology in question, resolving any worries or uncertainties that may arise.*

The three guiding philosophies are accompanied by simply formulated, everyday applicable principles and actions patterns of *3x2* and *Ask Why* and *We love feedback* to aid decision making, bring about employee empowerment and nourish learning and smarter ways of *doing* as central components:

***a) 3x2 principle - employee empowerment***

*The “3x2” principle is a simple formulation against which to weigh up benefits and drawbacks inherent in any decision made. With all employees of the company being able to make decisions to a large extent without any further confirmation, it essentially asks, who my (purchase, project, process) decision is benefiting (customer, Futurece (numbers), employees), for now and in the future?*

***b) Ask why - learning impetus***

*Futurece’s employees are encouraged to proactively learn themselves (seminars, conferences, etc.), but also to create and actively participate in initiatives, such as micro teams and interest groups, to maximise auto-didactic and peer learning. It is an encouragement - in a lean fashion - to ask why, to get to bottom of issues, rather than accepting simple, un insightful truths. Another example illustrating this encouragement are events, such as FutuFridays held once a month across all offices, with employee-initiated presentations and workshops, followed by Ask the CEO half an hour session, providing opportunity to ask to higher management anything at all.*

***c) We love feedback - customer satisfaction monitoring***

*Feedback is a central theme to the company, with team-based exercises such as the weekly held UX rinkki, fast, loosely-structured weekly feedback session for the UX team to receive and provide feedback on designs. Feedback is generally said to be received with recognition and acceptance.*

Furthermore, marketing materials such as posters, stickers, flyers and more, have been subject



**Fig. 11:** This is marketing material (selection) of the Futurice brand.  
**Fig. 12:** Futurice aims at being a highly visual brand: the marketing material is widely used.  
**Fig. 13:** Futurice also aims at creating an employee brand, as shown in this image.

to this investigation. As Futurice is aiming for a highly visible brand<sup>11</sup>, they are understood as a visual language, that reaches all levels of the company in a highly successful manner.

Official marketing slogans are (in timely descending order):

*“Smarter software, better business”*

*“Your rapid development partner”*

*“High end software boutique”*

Cultural change, as affected through internal as well as external forces encouraging and resisting it, generally can be argued as being perceived positively in Futurice, as the perpetuation of cultural ideas and practices such as learning and agility, themselves constantly being subject to change, are deeply ingrained. New models of ways of working are being explored and tested, enabling generative action within. Hence as noted by Ries, “..the most vital function is learning.”(Ries, 2011, page 38), Futurice can be argued to be following, embracing and promoting that notion strongly. In the same line of argumentation, Futurice has noted to be one of the first (MC) to introduce an UX team already in 2009, following an all-under-one-roof philosophy, working agile and holistically, as reinstated through their – since then expanded – broad service portfolio.

## 5.7 Project case studies

In order to get an understanding of the nature and dynamics of projects carried out at Futurice, I have analysed four project cases, that have been selected due to their various settings, for instance concerning their length, budget, team formation and task setting. The actual descriptions can be obtained from the appendix.

Typically, Futurice is carrying out small customer projects, often involving tailored solutions

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<sup>11</sup> Even in the lavatories of the company, educating posters can be found.

for each customer's specific needs (JT). The teams are cross-functional and often working in close collaboration with the customer, operating under the company's individual business units (MC, TT). Only the UX team presents an exception, as it is organised and available to the other teams as a resource pool to tap into; often involving designers in multiple projects at the same time, reacting and adjusting to current project situations. Ad hoc assembly of the teams is observed to often be the operational default.

As further findings of the case studies showed, the range of projects carried out, indicated various different starting points for the projects themselves. Often, projects start off from complete concepts and extensive wireframes provided by the customer (JT), laying grounds for the visual design, contrasting with projects that require concept design to be done by Futurice, that typically is in the need of go / no-go customer approval. Though underlying assumptions are arguably in need to actual validation in both cases, higher accountability towards the customer and hence greater uncertainty is faced in the latter case, making them particularly suitable to a validated, Lean Startup inspired approach (PH). "We are already using it in consulting. The more front-end we are, the more a Lean Startup approach makes sense to [me]" (MC).

Generally, projects have found to be agile within the implementation phase, however are following quite closely waterfall-like structures outside that phase (JT). Project-linked failure rates and reasons are highly transparently shared amongst the company, reflecting and highlighting the need for entire teams building a product, to keep business goals and requirements in mind to successfully co-create a valuable and viable project with and for the customer, which is another key opportunity for the Lean Startup principles to achieve (MC).

## 5.8 Sales and customer relations

Generally, sales are personal, outcome-oriented, with each proposal customised and tailor-made (TT), presenting an opportunity for selling varying approaches and processes to each customer, as is seen fit. The communication of proposals and leads is universal, through tools such as Salesforce, as within the company theoretically everyone is involved sales, providing leads to be pursued further. Sales themselves are linked to personal rates of success. Sales people are usually technical experts at the same time, helping the customer understand what they need, and what their business may profit from, though a lack of in-depth process-driven knowledge has been acknowledged (JT).

Concerning UX sales specifically, sales people have shown to lack basic training in design, resulting in missing understanding and knowledge towards design processes and tools, hindering more effective UX sales. This is in stark contrast to the acknowledged fact that Futurice is selling processes, not products. The expansion of the company's service portfolio also includes recent efforts in introducing Service Design and Analytics, aiming at providing more insights to outcome-specific requirements, but also providing means of monitoring and assessing their effectiveness. Hence increased accountability towards the customer is an opportunity (PH, JT) for validation-based learning as opted for by adopting a Lean Startup approach. Evidently, some sales people have already started adopting some of the Lean Startup tools (MC, TT), testing them internally, listing and validating customer's assumptions to aid sales work.

## 5.9 Summary

There are a range of key facilitators identified within Futurice for a successful introduction of Lean Startup principles, including its startup-like culture, core values of caring and transparency and strategic alignment as a learning organisation and trusted partner (TT, MC, JT), which seems to provide fertile grounds for Lean Startup's fundamental thinking, as it bears the potential to drive the company's main goals (TT), by caring not just for the delivered product itself, but also its desirability anchored in business-advancing validation and a high end-customer acceptance, as creating value is key objective and shared team-wide responsibility (Ries, 2011). This potentially creates a competitive edge for this service provider's processes, outcomes and trainings (PH), advancing the company closer to the customer business (JT).

A range of key obstacles remain to be overcome, one of which being the knowledge gap in appropriate (design) methods inside as well as outside the company design resource pool, such as service design or Lean UX inspired methods of the Lean Startup approach, which is recognised as essential for being able to sell certain processes to the customer. The customer's approach and own perceived need is thus heavily influencing the nature and overall structure of the project, making it a pull-approach, rather than a pushed, expert process suggestion, tailor-made from Futurice's end.

Hence customers have been identified as 'door-keepers' (MC, JT, PH) tend to buy what they perceive valuable (TT), putting the sales personnel into a key position for introducing Lean Startup processes, posing the need of adequate frameworks, cases and sales material to support design and process-driven sales. As Futurice is driven by numbers (TT), ROI of (design) processes remains a key issue as paralleled by the introduction of service design into Futurice (JT, SN).

As Lean Startup processes are argued by practitioners to mostly fall into designer's realm,

the resource pool strategy poses an obstacle and a lack of Lean UX experts contradicts with expert-ruling mentality of the company.

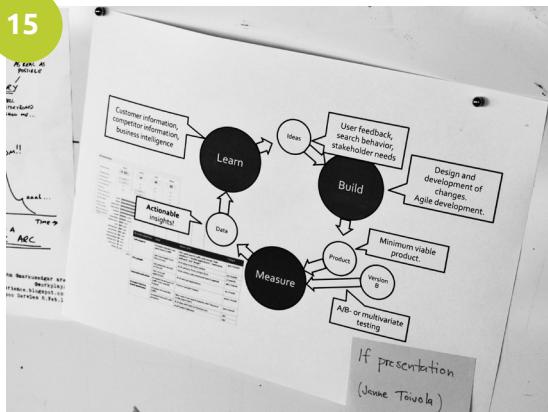
Though the Lean Startup process, though not explicitly, is already being applied to some extent, especially in consulting and some few customer cases (MC, TT), efforts remain heroic (TT) and there is a lack towards its horizontal integration inside the company (PH). In order to achieve that, a bottom-up approach is needed, utilising evangelists as a proven approach for introducing processes to the company, as shown in the broad and successful introduction of Analytics (JT). Multichannel and company-wide communication of the benefits regarded as key (MC, PH, JT, TT), though notwithstanding the acknowledged need for involving the customers in an active dialogue as well. Bringing in experts to train internals as well as externals and customers is seen as necessary (PH, MC).



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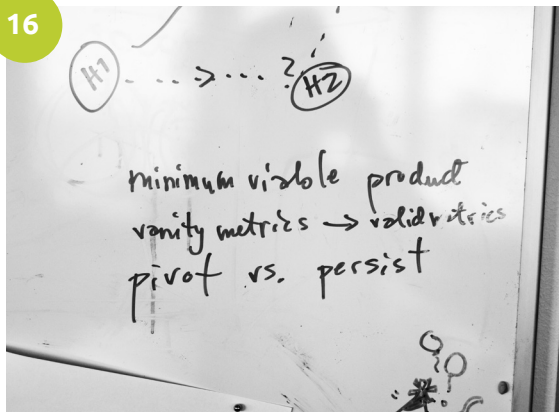


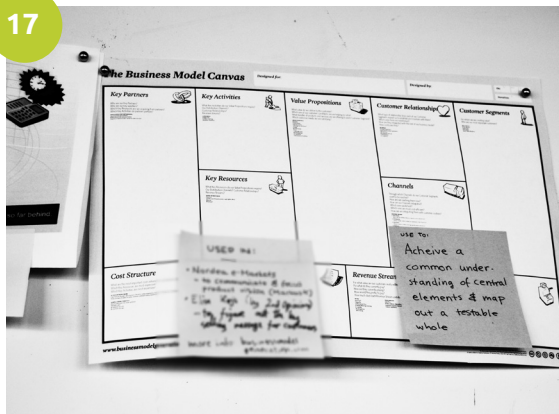
Fig. 14: Lean Startup workshop proposal.

Fig. 15: Image of the Build-Measure-Learn feedback loop, as used in a customer case.

Fig. 16: Project wall in which a MVP was considered.

Fig. 17: Business Model Canvas, as developed by Alexander Osterwalder, utilised for customer case with critical assumptions list, that the business case was resting on.

17



The company that consistently makes and implements decisions rapidly gains a tremendous, often decisive, competitive advantage.

6

## 6. Findings

The following findings summarise the results of the literature study, Futurice project analysis, workshops, qualitative data obtained from interviews as well as co-created visualisations such as the interview matrix, tacit knowledge and artefacts as physical manifestations of values and ideas, answering to the four research questions posed. The main finding of this thesis is a strategic approach in seven steps, to introduce the Lean Startup process into Futurice, as it suggests to be of value to the company strategically as well as organisationally. Furthermore, tangible outcomes relating to the successful introduction are listed and broken down.

### 6.1 Findings answering the set out research questions: Main RQ 1

The aim of the thesis is to answer to the set out main research question and three sub-questions, that are as follows:

***Main RQ 1: What is Lean Startup and what are its underlying principles?***

Lean Startup is a principled approach to accelerate short iterative product development cycles, assuming features to be based on hypotheses that are in need of scientific, measurable validation. Validation in turn is used as a strategic tool to determine whether to proceed or pivot. The process utilised is characterised by learning as the unit of progress. According to the literature study and practitioner's accounts, I have identified the main principles of the Lean Startup to be as follows:

#### ***1. Entrepreneurs are Everywhere***

*By significantly broadening the definition of entrepreneurs as being essentially human institutions that create value, Ries suggests the broad applicability of Lean Startup beyond the startup sphere and beyond people's professional titles and occupations.*

#### ***2. Entrepreneurship is Management***

*Startups must be managed and there is a systematic underlying approach in doing so. Furthermore,*

*the second principle suggests that the management of startups is a repeatable, teachable method.*

### **3. Validated Learning**

*The key activity in any value-creating human institution is learning, that can be validated and accounted for. It is linked to the fundamental question of what needs to be learned and how that is achieved, suggesting simple scientific experiments to yield insightful, actionable learning (metrics) as an outcome.*

### **4. Innovation Accounting**

*Innovation accounting refers to the way progress is measured, how milestones are being set up and how work is prioritized. It incorporates ideas of vanity metrics versus insightful, actionable metrics.*

### **5. Build-Measure-Learn**

*Building a successful product or service is an action-driven activity, that measures how users react and adjusts accordingly through pivoting or persevering. It suggests that what is being build, can and must ultimately be measured, answering to something specific, with the ultimate aim of learning, that is achieved through a cyclic, iterative and continuous process.*

In order to investigate the principles' applicability to the empirical case study of Futurice, qualitative research was carried out. Semi-structured, themed interviews (Hyysalo, 2009) yielded insights into Futurice as a company, generating findings for the posed sub-questions of this thesis. In order to analyse the qualitative data obtained from the semi-structured interviews of the second round, the recordings were transcribed along with the notes and arranged in a matrix, outlining the three parts of the interviews (1. Futurice; 2. Strategy; 3. Lean Startup) and their according main themes (1. Culture, Values; 2. Challenges, Opportunities, Strategy; 3. Pro's, Con's, How-to), respectively. The interview matrix can be found from the Appendix.

### 6.1.1 Findings answering the set out research questions: Sub-RQ 1

**Sub-RQ 1:** *What are possible enablers and inhibitors for adopting Lean Startup principles, specifically in regards to Futurice?*

According to the interview matrix, a range of the enablers and inhibitors have been identified. There seems to be a high cultural fit with the Lean Startup principles, as Futurice is lean and strongly learning-oriented organisation, making learning the accepted unit of progress, mirroring the Lean Startup philosophy. However, as the company is highly outcome-driven and satisfying customer needs is regarded highly, anticipating learning to a pivoting extend needs to be done in accordance with the customer, thus making their understanding vital for learning as a unit of progress to fully integrate as accountable. The pursued strategic direction of Futurice to be a trusted partner in the company's key accounts, was seen to carry ambiguous potential, both being an inhibitor and facilitator. Aiming at getting the company closer to their customer's business, it facilitates the introduction of Lean Startup principles as it moves Futurice into strategic conversations, however can inhibit lean culture as immersing into customer's business reveals cultural gap more strongly. Despite the interviewees presenting enthusiasm towards Lean Startup, all agreed on the customers being the *doorkeepers* to a successful introduction, often defining the way a project is carried out, as well as contradictorily highlighting a lack of a preceding solid sales story and strategy.

Enablers	Inhibitors
<p data-bbox="241 375 617 405">Futurice as a learning organisation</p> <ul data-bbox="241 493 785 781" style="list-style-type: none"> <li>• <i>Learning as the accepted unit of progress</i></li> <li>• <i>Previous successful introduction of 'novel' processes and practices such as Analytics</i></li> <li>• <i>Pro-active, empowering, hierarchically-low company culture</i></li> <li>• <i>Offering tailored solutions to customers yields</i></li> <li>• <i>Familiarity and long list of references with consumer side services compared to competitors</i></li> </ul>	<p data-bbox="809 375 1323 445">Conceptual (radical) notion and missing validation</p> <ul data-bbox="809 493 1354 632" style="list-style-type: none"> <li>• <i>Needs to be understood more of a framework</i></li> <li>• <i>Actual benefits need to be measurable / need to be obtained</i></li> <li>• <i>Numerical and financial validation</i></li> </ul>
<p data-bbox="241 823 675 852">Familiarity with lean and agile processes</p> <ul data-bbox="241 940 785 1039" style="list-style-type: none"> <li>• <i>Mastered agile, customer knows expertise</i></li> <li>• <i>Lean Startup process can advance current practices</i></li> </ul>	<p data-bbox="809 823 1298 892">Unfamiliarity with processes and tools of the Lean Startup</p> <ul data-bbox="809 940 1354 1039" style="list-style-type: none"> <li>• <i>Internal knowledge is not 'ready for takeoff' yet</i></li> <li>• <i>Lacking understanding of potential benefits and insufficient support from management</i></li> </ul>
<p data-bbox="241 1101 625 1131">Strategic positioning as key partner</p> <ul data-bbox="241 1238 785 1487" style="list-style-type: none"> <li>• <i>Shift towards getting closer to customer's business entering an information-transfer relationship</i></li> <li>• <i>Shift results in confrontation of potentially unfamiliar domains and introducing higher degrees of uncertainty</i></li> <li>• <i>Continuous projects - getting out of deliverables mindset but rather into progress-oriented one</i></li> </ul>	<p data-bbox="809 1101 1287 1170">Futurice being a software vendor leading to customers as doorkeepers</p> <ul data-bbox="809 1238 1354 1526" style="list-style-type: none"> <li>• <i>Customers define ways of working</i></li> <li>• <i>Customers are unfamiliar with Lean Startup processes and benefits</i></li> <li>• <i>May not want us to do this</i></li> <li>• <i>High uncertainty is not always given</i></li> <li>• <i>Outcome-driven mindset due to organisational structure (superior's pressure) and deliverable expectancy</i></li> </ul>
<p data-bbox="241 1572 749 1642">Tools and processes already being used to some extent</p> <ul data-bbox="241 1721 785 1856" style="list-style-type: none"> <li>• <i>Sales team, UX and LCM are already using some of the tools</i></li> <li>• <i>Enthusiasm of Lean Startups value for Futurice (evangelists)</i></li> </ul>	<p data-bbox="809 1572 1110 1602">Lack of framework for sales</p> <ul data-bbox="809 1721 1354 1821" style="list-style-type: none"> <li>• <i>Lack of cases - insufficient 'sales story'</i></li> <li>• <i>Lack of sales material &amp; strategy</i></li> <li>• <i>Leap of faith is needed from customer's side</i></li> </ul>

## 6.1.2 Findings answering the set out research questions: Sub-RQ 2

***Sub-RQ 2:*** *What potential benefits does the Lean Startup methodology offer a medium sized IT vendor, as shown with Futurice?*

Mapping the value of the Lean Startup methodology as a way to deal with high degrees of uncertainty, it situates itself amongst other strategies and processes designed to tackle decision-making and strategy-planning in situations of high uncertainty, such as agile practices and the concept of effectuation, whereas none of them can be said to be mutually exclusive and are hypothesised to be value-enhancing when combined skillfully. Lean Startup hereby needs to be understood more of a concept and process rather than an absolute truth, as value can be derived from it in less radical notions, as perceived by the interviewees. All interviewees furthermore agreed, that introducing Lean Startup principles into Futurice can be of financial and strategic benefit to Futurice and can be “applied quite directly to customer’s services” (MC), as Futurice is creating new business for their customers. The main benefits, as extracted from the interviews and workshops, can be listed as follows:

***1. Moving Futurice closer to customer’s business and creating a competitive edge***

*In alignment with the organisations’ strategic direction, Lean Startup process can support the company’s goal to move further upstream the value chain, as was already the aim when spearheading the introduction of UX practices and the consulting team. The aimed for continuous business cases, as trusted partnerships through key accounts are being established, bring the company closer to continuous beta-stage development and continuous development in which progress is measured differently, as it gets the team out of the ‘deliverables business’ (Gothelf, 2012).*

***2. Creating increased accountability towards the customer***

*As measuring is a significant part of this company, as highlighted by the prominent usage of EBIT as measure of progress or the increased interest in Analytics, transferring this practice to customer work can potentially create higher accountability for the team as design and development*



*decisions can be based on numerical arguments, rather than subjective perspectives.*

### **3. Yielding potentially higher end-customer acceptance and validation for existing processes**

*As scrum and agile are seen as a source of speed, Lean Startup can act as a source of validation, which in turn can result in less heroic efforts. Design decisions for instance can be tested and verified as tests can yield numerical backup and help facilitate decision-making processes.*

*Furthermore, Futurice as a company can potentially sell own processes and trainings, also own products are possible to be developed internally utilising the Lean Startup process.*

### **4. Shifting mindsets through accepting learning as the unit of progress**

*Learning as the unit of progress can help shift mindsets inside the company as well as towards the customer. Teams can potentially act more autonomously and higher hourly prices are possible.*

### **5. Breaking of silos and increased team responsibility**

*Lean Startup process has been shown to spread responsibility over advancing business case across the entire development team, as every test set up can potentially change entire business plans. This in turn can create an increased sense of ownership, as advancing the business case is potentially done with the customer together in a pro-active, iterative, dialogue-based manner.*

## **6.1.3 Findings answering the set out research questions: Sub-RQ 3**

**Sub-RQ 3:** *How can Lean Startup principles be introduced to Futurice and what actionable steps need to be taken?*

Learning from how other processes, hitherto novel to the company, have been successfully introduced into Futurice, namely Service Design and Analytics, it has proven efficient to communicate across all organisational layers, utilising an empowering bottom-up approach, as well as engaging evangelists to make a strong case and act as necessary points of contacts.

It seems vital to utilise Futurice's existing communication channels to raise awareness and introduce the process itself, its benefits and tools broadly. Furthermore, a strong vertical and horizontal integration is needed, including short-term as well as long-term planning founded on broad acceptance across the company that is strongly supported by the management. That could be done through an internal project to which resources are being allocated or through validating commitment by for instance applying for a Tekes-funded project to be carried out. Overall, introducing Lean Startup process to Futurice has shown to be considered of high value, however is in need of a clear and actionable strategy, in order to be taken further.

## 6.2 A multilayered strategy made up of the Lean Startup Poster, Lean Startup Roadmap and Testbed Proposal

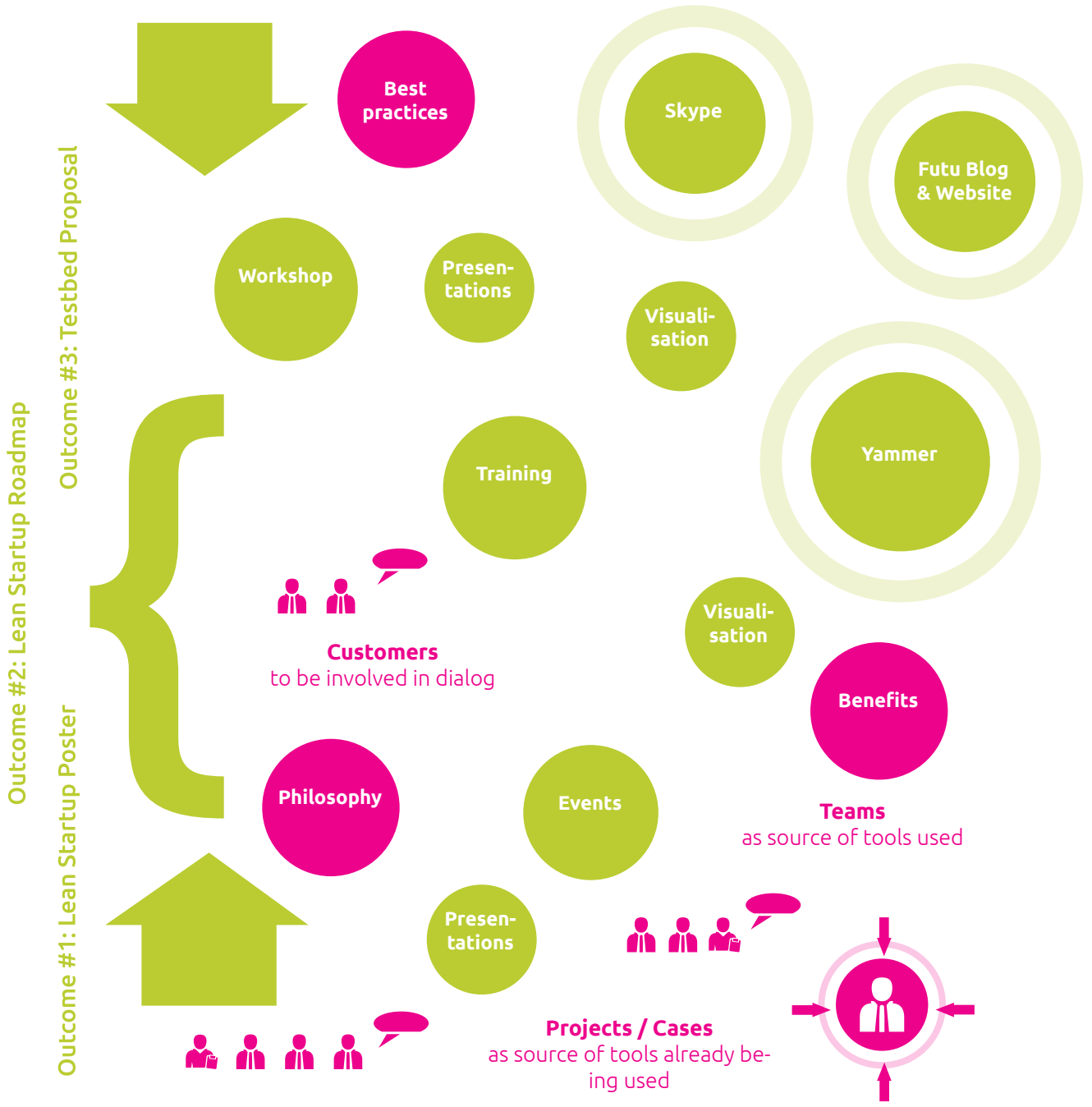
As a direct outcome of the interviews, it is a common agreement, that as a vendor, Futurice employees need to put themselves "into the shoes of [their] customers" (JT) in order to help them most effectively. Furthermore, Futurice's portfolio being the cases carried out, the knowledge and the technologies employed, that are ingrained in the teams and their expertise, it is the employees that are "responsible for creating technological innovations for our customers" (MC). Building from the core competencies – as defined by Coimbatore Krishnarao Prahalad and Gary Hamel as the collective learning in an organization (Prahalad & Hamel, 1990) – asserts that it is necessary to seek competitive advantage from a capability that lies within Futurice's expert people and processes. As a direct derivative consequence from Christensen's famous insight, that nonexistent markets can not be analysed, it turned out crucial that introducing this process beyond Futurice is critical, in order to validate Futurice's customers expressed demand for processes such as offered through the Lean Startup, demanding a pro-active, learning-by-doing approach from Futurice side. Hence, customised proposals to Futurice as a medium-sized IT vendors have derived as follows:

**Firstly**, I introduce a Lean Startup Poster. It results from the insights gathered from literature and practitioner's accounts and acts as a communication tool to introduce Lean Startup concept to a broad audience inside the company, highlighting core benefits and key concepts to be spread throughout the company to reach a critical mass of supporters.

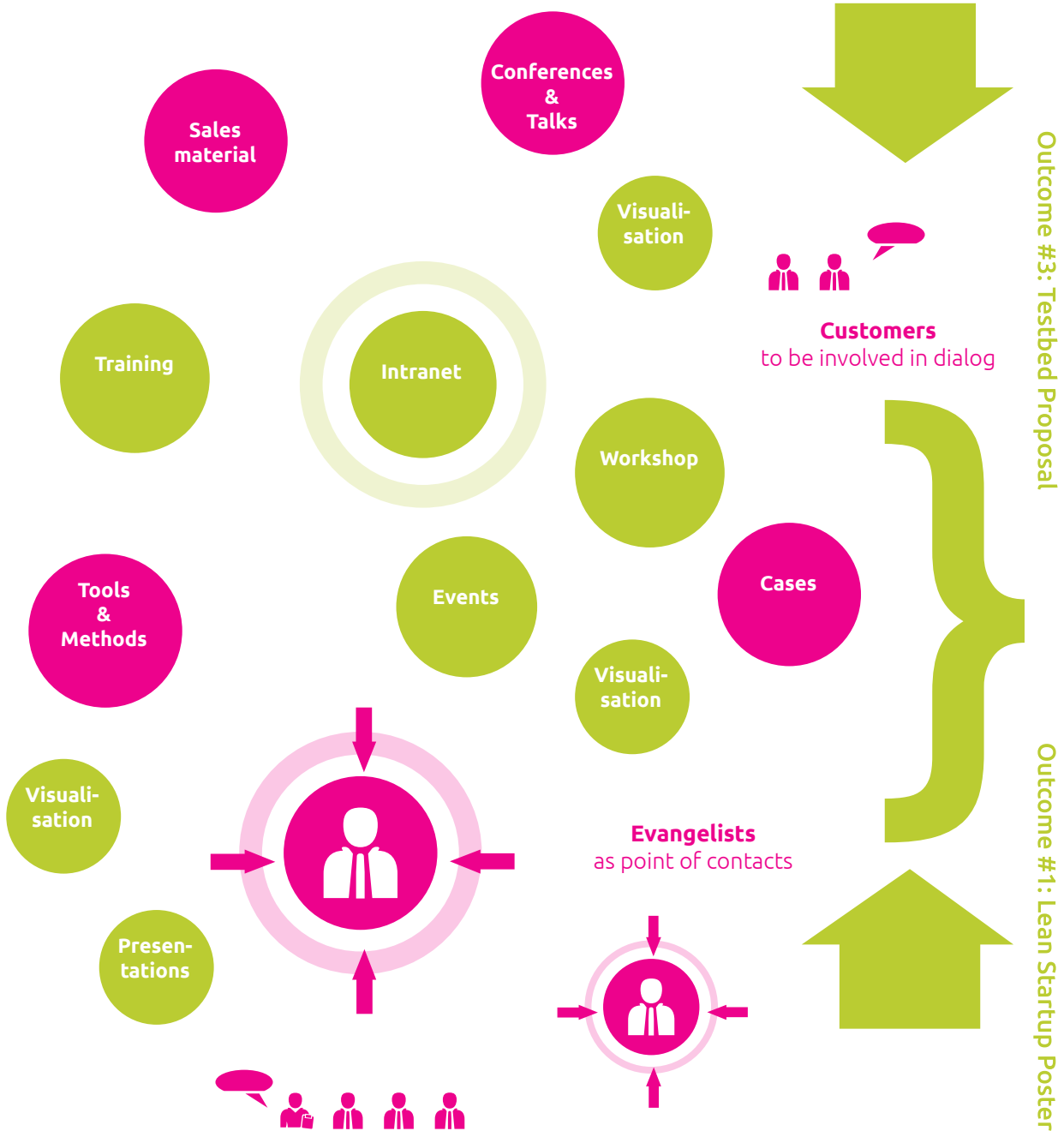
**Secondly**, I introduce the Lean Start strategy roadmap, which is a set of actionable steps that help spread the use of Lean Startup principles and according tools. It combines insights on historically successful proven steps to introduce any hitherto novel process to Futurice, as well as takes into account identified Lean Startup-specific inhibitors and enablers, leveraging the organisational set up of the specific empirical environment to overcome or minimise inhibitors and amplify possible enablers.

**Thirdly**, I introduce Futurice.com as a concrete proposal as testing and learning ground for underlying tools and principles of the Lean Startup process, highlighting the benefits of testing and applying this. The proposal aims at creating a generative and pro-active learning ground, in which most suitable approaches can be developed and integration with current processes such as agile can be tested and optimised.

Vertical anchoring through company project



# Vertical anchoring through company project



Bottom-up approach

### 6.2.1 Lean Startup Poster

Communicating the benefits of the Lean Startup in order to create an understanding about the Lean Startup has been considered vital (MC, TT, JT). The Lean Startup Poster is meant to show the iterative nature of the process, necessary due to high degree of uncertainty. It follows the (visual) language of Futurice, opting for broad interest and acceptance. This communication tool is meant to facilitate consecutive steps outlined by the Lean Startup roadmap. Hence, first and foremost it is to be understood as an internal communication tool that sparks interest and discussion and may trigger pro-activity and support.

However, the poster itself is only a part of a more elaborate, overall strategy, thus a set of recommendations goes alongside with it. Though being a physical artefact, it needs to be taken into digital communication channels, as heavily used within the company and considered highly effective mean. Its physicality though facilitates representation of this discussion item to be part of both team-based events such as weekly and monthly team meetings as well as company-wide events such as FutuFriday presentations, as outlined in the following strategic roadmap action-points.

## 6.2.2 Lean Startup Roadmap

Conducting a workshop with the main evangelists of the company, a set of actionable milestones has been created that can be understood as a strategic perspective on how to introduce Lean Startup thinking to Futurice as listed below. A collaborative approach was used in order to bring about commitment amongst the current evangelists of the Lean Startup thinking within the company and to create a shared agreement and understanding of what needs to happen in order to introduce Lean Startup thinking on a broad front. Arguably, these are specific to the environment, context and culture of Futurice as a learning organisation, focusing on internal competence development and developing a communication strategy that reaches beyond Futurice's own employees, as "we need to have a shared language" (MC). The action steps listed below do not demand to be followed in a chronological order, rather they are to be understood to guide decisions and actions, necessary to be taken.

### ***1. Kickstarting the introduction of Lean Startup by evangelists that act as point of contacts***

*A range of pioneers and so-called evangelists have been identified within the company, to drive this introduction forward, to plan and educate on the topic, who tell customers about the Lean Startup and get people interested. They act as points of contact and bridge the dialogue between management, internal as well as external employees as well as customers.*

### ***2. Communicating of the value of Lean Startup thinking***

*Posters, open discussions, workshops as well as presentations during company-wide events such as FutuFriday, are ways to spread the understanding of what Lean Startup is, what potential benefits it can bring in certain contexts and the basic principles it is based on. These formats usually invite for open discussions and tend to be taken further in the provided digital channels (Intranet, Yammer, Skype, Futurice Blog). Aiding tools need to be designed and distributed, such as the Lean Startup poster and communication needs to happen on two levels: internally and externally. Thus, sales materials, such as sales decks as artefact for outside communication, need to be created.*

### **3. Integrating and anchoring Lean Startup concept vertically into the company**

*In order to create a driving force around the Lean Startup, it is necessary to firmly establish a physical and mental space, a unit or an entity to it. This requires budget allocation and resources to it, in order to seriously establish it as part of organisational, official strategy. This way, broad acceptance is validated and communicated across the company, as its status as an accepted, to be seriously explored strategic path, is established and guaranteed for a substantial period of time. Furthermore, a Tekes-funded R&D project has been applied for in order to accomplish and accelerate this deep integration.*

### **4. Learning the underlying methods by accumulating materials and sources and arranging hands-on workshops**

*Educating internally, across all teams is absolutely necessary in order for the principles and overall process to be applied and prevail. Only through a lean “learning by doing” approach, the benefits can be experienced, their appropriateness can be investigated and value be productised and materialised. Only through internal trials, Futurice will be able to provide customers with real business value and increased quality products and services.*

### **5. Creating a continuous and well-funded test bed for experimentation**

*Additionally to action step 4, an internal project is assumed to be the best source of learning required to adopt Lean Startup principles. However, Futurice management needs to allocate people and budget and a physical space, to which people can go to learn. A testbed can yield crucial learnings, present obstacles as well as opportunities, that can be communicated and shared amongst employees.. Only through practical learnings and a “learning by doing” mindset, this is assumed to gain greater acceptance within.*



### **6. Arranging internal and external expert workshops**

*Once Futurice has internally mastered Lean Startup processes and tools and have identified and trained eager practitioners, the company will be able to sell the approach explicitly to its customers. However, in order to accelerate learning, bringing in external experts to train Futurice employees and management as well as Futurice's customers is key. Actively involving customers is meant to tackle one of the most challenging inhibitors as perceived by the interviewees, who identified the customers as doorkeepers, acknowledging their acceptance and understanding crucial.*

### **7. Productising the Lean Startup process as part of the company's offering**

*Making the Lean Startup process part of the company's offering, ensures and communicates its importance, will firmly anchor it amongst other processes used and makes it a visible service offering to its customers. This also includes training for the customers and affiliates (e.g. externals) to teach them about how to apply Lean Startup thinking in their own daily processes.*

### **8. Selling lean teams and driving expert knowledge through sharing**

*By selling self-directed product teams that follow the basic guidelines of a lean team as suggested by Giff Constable, potentially contributes to breaking down expert silos within the company and through sharing best practices and case studies, a highly valuable knowledge base will be created that can be shared not only amongst employees and customers, but also with the a potentially wider audience. This can be achieved by spreading the knowledge gained through blog posts, talks, workshops and conferences, to only name a few.*

### 6.2.2.1 Lean - Leaner - Leanest

In line with the Lean Startup methodology, the above presented strategic action steps are meant to be subject to change and iteration, as people begin to take ownership over them. The roadmap has been installed in various very visible places within the company premises, to be commented on as well as been placed in various digital communication channels, inviting people to find the right contact persons to find out more and how to become active.

As of this point, the distributed action steps have been actively discussed and have brought about a fruitful debate, kick-starting activities such as public discussions in Yammer and Skype and the organisation of a Lean Startup workshop in November 2012, involving both customers as well as Futurice employees.

### 6.2.3 Lean Startup Testbed Proposal

As a direct result from various interviews and workshops, it is considered vital to create an innovation sandbox (Ries, 2011, page 261), empowering innovation teams to test new methods and processes. This helps to create a sustainable culture of innovation inside a company, ensuring motivation and pro-active attitude for experimentation, failing and learning. In order for this to happen, Ries calls for an increased portfolio thinking (Ries, 2011, page 253), for which it is fundamental to change management thinking, to one in which novelty and ideas are valued and seriously pursued. Hence, it is seen vital to create an autonomous group and physical space in which the Lean Startup process can be tested.

This setting ideally mirrors certain aspects of the uncertain operational context of startups, such as limited, but granted resources for conducting experiments, independence and the creation of a sense of ownership and decision power. Ideally, the management would grant some reasonable funding for an internal project, for instance granting some 20.000€ for a six-months project to get started, or set up a R&D project as possible through for instance Tekes-

funding, in order to establish Lean Startup vertically in the company.

As of the actual tools of the Lean Startup process still being mostly undetermined and being seemingly freely adopted from tangent disciplines such as Service Design, UX Design and others, they are expected to be further subject to change, as the dialogue continues (Giff Constable, 2012). Thus, the proposed tools and methods, such as MVP or Lean Canvas – an adopted version of the Business Model Canvas by Alexander Osterwalder – are in need of testing and validation themselves, highlighting the current state of art of Lean Startup process.

However, following the Lean Startup principles, the proposed tools focus on the actual experience, rather than set of deliverables and help a product, service and business strategy to emerge. They are meant to achieve high velocity and yield insightful learning when applied and opt for a proactive learning-by-doing attitude..

A list of suggested tools can be found, however, due to the scope of this thesis, I will not go further into explaining those or argue their effectiveness, but rather utilise those as reference to get started with, as means for achieving validation-based learning.

### ***Futurice.com as a Testbed***

*In order to make people test and learn - have to find create that space internally. I am proposing to utilise the company's website as a testbed. Having a concrete service and product artefact enables the design of experiments that will yield validated learning. Having a specific user base, utilising split testing and cohort testing, actual data can be extracted and design decisions shift away from subjective insights to a data reliance. Various methods can be tested and learning arises through differentiation of vanity metrics and validated metrics. Identifying and formulating hypotheses can be trained, underlying assumptions be tested and adjusted if necessary.*

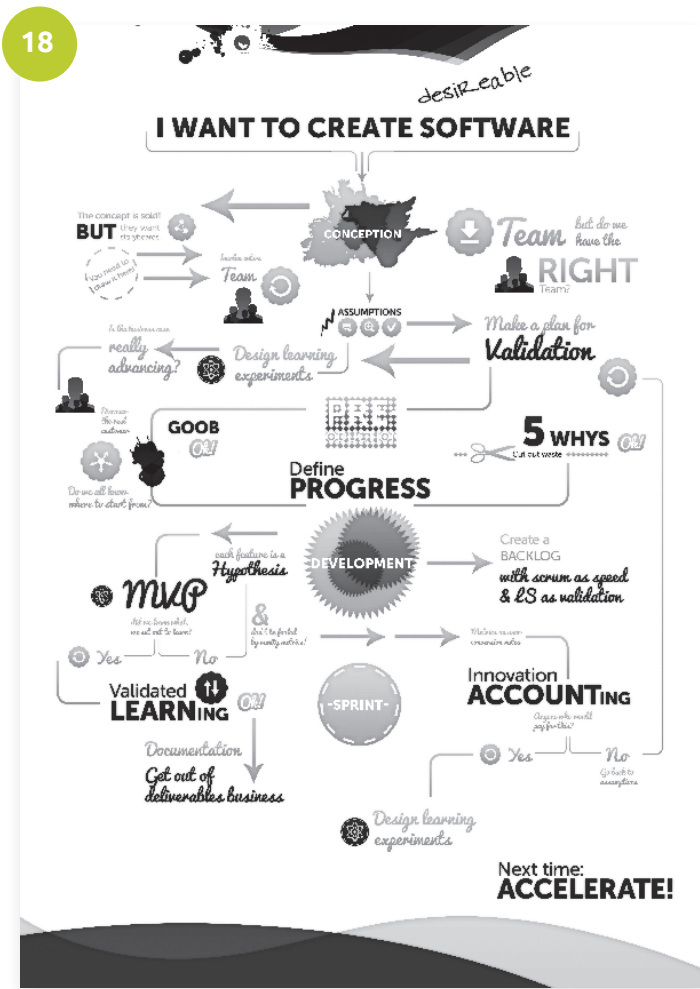
**Suggested tools to be tested:**

*Critical assumptions list, Lean Canvas, pair programming and co-creation, style guides and rapid production, designing learning experiments through cohort and split testing, innovation accounting table*

**Fig. 18:** Image of the poster, developed as an internal communication tool for the Lean Startup.

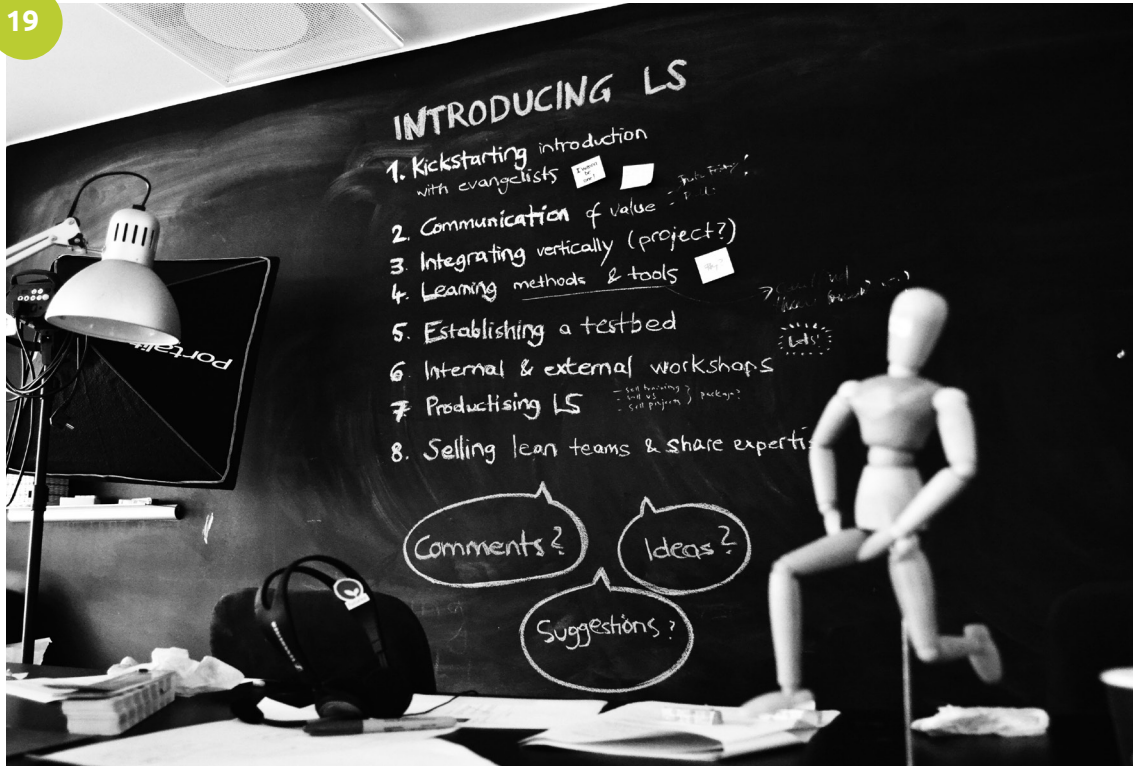
**Fig. 19:** Image of the strategic road map aiming at introducing Lean Startup principles, as written publicly on wall for Futurice employees to comment and add ideas of their own.

**Fig. 20:** Lean Startup Testbed proposal concerning Futurice’s own website [www.futurice.com](http://www.futurice.com).



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When you put your ideas in the world, then, and only then, do you know if they're real.

Not expensive, merely frightening.



# 7. Discussion

Lean Startup provides a process that makes it possible to deal with high levels of uncertainty and to successfully address the role of design in enabling making informed decisions about a product, its customers and business model, despite problematic and chaotic operational settings. It questions the fundamentals on which one operates, opting for a holistic product and service approach in order to create disrupting, highly competitive and desirable outcomes. It was discovered that the Lean Startup thinking needs to be modified in order to be adoptable, and it is to be understood more of a concept and process, which has the potential to bring about a competitive edge. However, in this thesis I identified a clear lack of empirical studies, posing some challenges and possible criticism towards the presented outcomes and artifacts that are outlined in this chapter, starting off with possible, more general shortcomings.

## 7.1 Possible, general shortcomings

The rate of adoption of the Lean Startup principles is assumed to be high, due to the company's favourable setting, however is not expected to work instantly and without any problems.

The company strategy itself can be described as still growing and organically diversifying, as has been highlighted through the diversification of the service portfolio of the company itself. Hence, there are various different views on where this company is heading, and world views may collide. The overall strategy though seems to bridge the chasm between design, software development and business development, including consulting and to move further upstream in the value chain. In order for that to happen, the 'silos' have to be broken down. However, as the company is growing, so is the fear of change. The proposed strategic action points may be perceived as a deviation from the current strategy, that still has the software development at its core. Hence, with help of the proposed methods and tools, I am aiming at enriching the strategic discussions at Futurice by introducing Lean Startup principles as a possible competitive factor.



There were other clear limitations to this thesis, such as its specificity to Futurice. The company's specific capacities for adopting these principles has been investigated and form the foundation of the outcomes of this thesis. However, as Futurice itself is described as a dynamic environment (JT), the results are hypothesised to be applicable to a broader context or different settings, that could provide further insightful research directions. Furthermore, measuring the overall economic benefits remains a crucial issue, as "this is a number game" (PH), and can only then be fully assessed. Furthermore, the available budget for this thesis was a limitation and it is presumed that a full-scale R&D project would provide further, critical insights into the outcome's effectiveness and suitability. Hence, it has to be noted, that outlined measures still remain to be tested in practice and evaluated against their performance. It needs to be further investigated if the proposed measures do generate the wanted benefits they have been designed for remains to be seen. The adoption rate internally as well as externally can only be assumed at this point and heavily also depend on customer interest and response to it. Continuous evaluation is indispensable to further investigate adoption rate, success rate and to allow for adjustments as applicable.

Further limitations are linked to the scope and frame of this thesis itself, as some other critical issues had to be left out that might have proven significant to the result, such as recruitment policies and practices (maybe from startups to help train people). Additionally, some shortcomings may result from the data gathering itself, as a bigger cross section could have provided more differentiated results. Furthermore, experience working with these tools needs to be accumulated and analysed, as they may transform throughout use and their application on a day-to-day basis. Hence, it is crucial to have people take part in how and when they want to adapt these methods, that would help a sense of ownership and push acceptance. Furthermore, it has to be noted that it is mostly individuals are driving the successful introduction of Lean Startup thinking at the moment, this thesis being one kind of contribution to this, inside the organisation. However, as also investigated from the interviews, alone the heroic effort is presumed not to be enough in order to spread the according mindset and tools and bring about change. Hence, a wider initiative is planned in order to convince internally and externally,

utilising the proposed action points and toolkit as a starting point to introduce this to a wider audience, exceeding Futurice itself as customers and company affiliates are gathered equally. The focus hence has been to identify the core benefits of the Lean Startup to Futurice, in order to create a line of argument to introduce this on a broader scale and to provide tools and methods to empower people across the organisation to start using the Lean Startup principles.

In order to maintain a focal point throughout the thesis however, the scope had to be kept focused as well. Various perspectives and angles could provide further insights, such as recruitment, individual skill, sales and leadership style. As of this writing, Lean Startup approach remains a heated debate amongst scholars and practitioners, which is why this thesis only touched upon how Lean Startup relates to UX and other related design practices (Lean UX, Agile UX) or discuss individual methods or tools, argued to be essential for Lean Startup thinking.

### 7.2.1 Outcome-specific possible shortcomings: Lean Startup Poster

Generally, the thinking in the company has to change and it does require a proportionally significant change, as budget, resource and similar discussions have shown. Convincing internally has turned out to be crucial to a successful introduction. However, due to the weight that digital communication channels have, it needs to be taken into those, hence the list of recommendations are crucial to its effectiveness. The poster may not speak to everyone equally, as it represents a generalized view on the Lean Startup process and certainly lacks further explanation by itself, hence it needs to be clearly communicated as part of an overall strategy.

### 7.2.2 Outcome-specific possible shortcomings: Lean Startup Roadmap

Investigated Lean Startup philosophy and methodology, once adopted and implemented it theoretically has the potential to empower project teams to innovate the customer's product.

Furthermore it provides validation for daily work, answering to accountability challenges towards the customer, ensuring an existing customer base at point of launch of the service, hence opting for a high acceptance of the service or product. This can result in significant strategic advantages as a key strategic partner to its customers. However it has to be noted that, in order to successfully implement this way of working, Futurice presents an overall favourable environment, providing the tools, means and culture towards an introduction of a new process, such as Lean Startup. Especially the culture this company provides are significant starting point, as it demonstrates and enhances Futurice's core values of learning, asking for feedback and making outstanding software (products). Furthermore, as recognised company-wide, it's strategic positioning of selling processes rather than products, makes the Lean Startup process especially suitable and promising.

The Lean Startup Roadmap is a general list of steps, that in itself will be in need of iteration and refinement as they are pursued. The reinforcement and success of each needs to be confirmed and monitored, though they are not to be understood as following a 'stage-gate logic', meaning steps may be taken in different order as things proceed in order to enable a lean approach. Limitations of the outlined strategy are linked to the Christensen's discovery that markets that does not exist, can not be analysed, which holds also true for the proposed steps, especially in regards to customer acceptance and demand.

For Futurice, a roadmap to introduce Lean Startup thinking provides actionable steps that can be followed up and actually be implemented right away. They present a way to bridge gap between incremental and radical innovation, and provide valuable insights in creating a strategic competitive edge. Its adoption shows promises in regards to the pursued key account strategy, as a successful implementation has the strong promise of deepened strategic partnerships and enhanced business understanding, resulting in the creation of higher quality digital products and services, with a higher end-customer acceptance and rate of success. Hence this is highly valuable input in strategic discussions of creating a sustainable competitive advantage over direct and indirect competitors.

### 7.2.3 Outcome-specific possible shortcomings: Lean Startup Testbed Proposal

Limitations for futurice.com website as a test bed include the needed resources, financial and human, being substantial and though low levels of hierarchy within the company exist, they are in need of approval from higher levels. As a training bed itself, it shows potential effectiveness, however needs to be measured and verified. There may be even better ways of facilitating training within the company that may yield better results. However, the measure (futurice.com) is a tangible one, reaching and affecting everyone in the company, which makes it easy to have people care about the outcome. Furthermore, the actual means of sharing the results and experience are considered to be as crucial as the testbed itself. Another obvious shortcoming here is that financing a full scale project considered to have an even bigger impact, but the scope of this thesis would not allow for this kind of investment. Hence a hypothetical road map and suggestions have been created, with the Tekes-funded R&D project possibly being a promising way to continue the proposal.



How come what we're  
learning only comes up at the  
end – as an excuse?

8

## 8. Conclusion

This thesis set out to examine the underlying principles of the promising and broadly embraced Lean Startup thinking and investigate their applicability in the context of a Finnish medium-sized IT vendor, namely Futurice. According to the findings, the principles are applicable, however need to be adjusted to made fit in with current processes found, such as lean and agile practices.

### 8.1 Conclusions concerning set out research targets

Initially, this research work set out to deconstruct the concept of the Lean Startup in order to answer to the question of what principles are underlying this concept and are potentially relevant for a medium-sized IT vendor. The principles outlined by the Lean Startup are *Entrepreneurs are everywhere*, *Entrepreneurship is management*, *Validated learning*, *Innovation Accounting*, and *Build-Measure-Learn*, however the latter three have been found to be of most relevance to Futurice, as they provide actual processes that not only complement current processes in place, such as agile, but provide partial answers to their shortcomings by answering and explicitly validating to design (desirability) and business implications (feasibility) issues, implicit in the software development. Though the underlying principles have been found to essentially employ the scientific method, they introduce a range of concepts such as the MVP, to test essential assumptions, that are implicit in every feature built, however are failed to be addressed through, for instance agile practice alone. Furthermore, the principles have been found to help steer through uncertainty, often faced in for instance open-ended R&D projects.

Secondly, the findings indicate a range of enablers and inhibitors when introducing Lean Startup principles. Generally, a too *radical understanding* of the Lean Startup concept and its empirical validation as a process, the *unfamiliarity with the processes* and tools of the Lean Startup, *customers being doorkeepers* and a *lack of frameworks and materials for sales* have been found to be the main inhibitors for a successful introduction of Lean Startup into Futurice. However, a range of enablers have been identified, such as Futurice's orientation as a *learning organisation*,



its *familiarity with lean and agile* processes, its *strategic positioning* as key partner and tools and *processes already being used* in some forms.

Thirdly, the investigated key benefits of the Lean Startup process for the empirical context of Futurice have been identified as 1. *Moving Futurice closer to customer's business and creating a competitive edge*, 2. *Creating increased accountability towards the customer*, 3. *Yielding potentially higher end-customer acceptance and validation for existing processes*, 4. *Shifting mindsets through accepting learning as the unit of progress* and 5. *Breaking of silos and increased team responsibility*. The identified benefits have found to be valid not only for the empirical case study of Futurice, but are assumed to be applicable and beneficial to a potentially much wider audience.

Lastly, for a successful horizontal and vertical introduction of the Lean Startup principles, a range of managerial implications derive from the findings of this research work. Hence, actionable steps outlining a strategic approach to answer to the posed challenge of introducing Lean Startup principles into Futurice, my empirical case study, are presented and include 1. *Kickstarting the introduction of Lean Startup by evangelists that act as point of contacts*, 2. *Communicating of the value of Lean Startup thinking*, 3. *Integrating and anchoring Lean Startup concept vertically into the company*, 4. *Learning the underlying methods by accumulating materials and sources and arranging hands-on workshops*, 5. *Creating a continuous and well-funded test bed for experimentation*, 6. *Arranging internal and external expert workshops*, 7. *Productising the Lean Startup process as part of the company's offering*, 8. *Selling lean teams and driving expert knowledge through sharing*. All presented, actionable steps recognise the potential of the principles outlined by the Lean Startup to deal with high degrees of uncertainty even chaotic environments, as posed by the current era of ferment, and highlights the role of design as a driver to provide value in customer projects and customer relationships, increasing Futurice's position as a strategic partner and to successfully differentiate themselves from their competition.

To sum it up, in order to enable Futurice's ambitious transformation from a contractor software partner to a key strategic partnership, the transformation has to start from the

company's core competency, developing a smarter and more effective way of delivering software and outstanding products and services to the customer and end user. Futurice's transformation is dependent on offering a valuable range of processes, of which Lean Startup shows immense potential for Futurice's customers to innovate radically, as opposed to purely incrementally, highlighting the critical finding of the customer's key role in the successful introduction and acceptance of the Lean Startup process. As of this writing and based on this research work, the company has taken actual steps in order to provide budget and resources for establishing a physical test bed and a dedicated, internal R&D project, as well as set up first Lean Startup expert workshops for customers and employees, to be held in November 2012.

21

**LEAN STARTUP WORKSHOP**  
15.11 & 19.11

Futurice

## Lean Startup Workshop

Sign up to the first lean startup workshop in Finland! We have invited the lean startup guru and agile coach, Jason Little to lead this one-day course. The course gives tools to manage your expectations, plan experiments to prove them right (or wrong), and concepts to use in planning your actions.

- Introduction to Lean Startup - stories, examples and outcomes from experience
- Lean Startup terminology and examples
- Hands-on workshop on designing experiments
- Hands-on activities - business model generation, applying Lean Startup to non-startups, validated learning canvas generation, experiment design, approaches to MVPs

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**Who**

Jason Little is an Agile Coach and won the Lean Startup Machine (LSM) weekend contest in 2012. Jason has used the Lean Startup method in non-startup organizations, proving that Lean Startup isn't just for startups, by generating 160K of opportunities for a new product idea within 3 months. In his spare time, Jason delivers Lean Startup workshops in the Toronto area and for the University of Waterloo and founded the Silicon Halton Agile Community. He will be a mentor and speaker at LSM Toronto in October and has spoken at LSSC'11, Agile 2011 and Agile 2012 as well as numerous local events.

In the fall of 2012 he will be releasing a Safari Books Online video series entitled "Agile Transformation: A Guide to Organizational Change" and is currently using the Lean Startup method to manage a medium scale (4,300 person) Lean transformation. Jason is also a Licensed Management 3.0 trainer, CSP and CSPO and wants nothing more than to change the world, one person at a time.

**Sign up now!**

[Sign up now!](#)

We have a limited number of seats, so make sure to get in touch soon.

**When & Where?**

Two courses have been scheduled as follows:

Thursday November 15, 2012  
Monday November 19, 2012

**Fig. 21:** Image of the Lean Startup workshop call and registration page, as found on: <http://www.futurice.com/lean-startup/>

## 8.2 Contribution

This thesis' main contribution lies within the fact, that an empirical study of this kind has not been done before. Deconstructing the Lean Startup and mapping its value and applicability outside startups is considered of value beyond the chosen empirical case study of Futurice, as its successful adoption through the outlined strategic action points can yield a competitive edge for better, faster and smarter making software and building products, as mirrored in the high interested identified from for instance Futurice's customers' side.

Furthermore, from an academic perspective, this thesis creates value through contributing to a better understanding of the missing cohesion of the fields of software development, business development and design in software development projects. By extracting and gathering methods and tools, some explicit means to bridge this gap have been provided. Furthermore, it points out discrepancy between agile and UX design, and the vital role of design in taking decisions on every level of any product or service, also in terms of business modelling for instance, further highlighting the need for better integration of design and its significant role it plays in developing successful products and services.

For the design profession, the thesis underlines and highlights the value of multilateral expertise and meta-skills in high level design, as well as design's critical role<sup>1</sup> in strategic decision-making exceeding purely product and service-level relevant ones, extending to strategic and technical decisions, especially in environments of high degrees of uncertainty. It puts design in the strong position of designing beyond the product and service itself, influencing and defining the underlying business model and strategy, through carefully designed validated-learning experiments, aiming at giving direction and shape to the entire project and business.

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<sup>1</sup> As I, and other practitioners, have identified design as a discipline needed to design the required experiments as essentially mirroring designer's capabilities and activities.

However, this thesis has also shown that designers actively need to develop and learn, by breaking out of their silos and participate in for instance making working prototypes with the developer or by themselves, which is a necessity for the promised rapid pace of the Lean Startup.

Its applicability outside the startup ecosystem makes the Lean Startup relevant to a much wider audience. It is assumed that the outlined results are applicable to similar settings, such as other medium-sized IT vendors, digital agencies, and others, operating in similar contexts. The benefit lies within the enhanced efficiency and rapid speed gained by targeted and waste-minimising processes, creating highly desirable products and services, that are fundamentally based, tested and tied to current market conditions and an increased business understanding. Though Futurice-specific, the results presented in this thesis are mainly operational and hence can easily be generalized for different contexts. There may arise certain challenges for the adoption, for instance – due to Futurice’s organisational set-up – as teams are able to operate autonomously to a large extent, which may pose a challenge to larger-sized companies juxtaposing this kind of setting with a potentially more hierarchical structure.

### 8.3 Further research

In order to validate and quantify the value brought about by this thesis and the measures and action points presented, several different factors and data sets are considered to prove useful for further investigation.

One could do further research by going vertical and more deeply into this case study and follow the progress at Futurice following the strategic roadmap. However, another direction for further research could be a more horizontal approach, in which similar studies could be carried out in different empirical settings to compare and juxtapose results.

A range of ideas and thoughts have come up during the interviews of how to train people from

various backgrounds on the methods, however – provided actual data was to be collected and gathered – further investigation on the effectiveness of training and adopting the necessary tools and how those may modify depending on their context of use, may result in further fruitful insights. Additionally to that, it is regarded vital to further investigate the Lean Startup economic value and to quantify results. Another interesting path for further investigation may be the underlying promise of the outcome of more relevant, successful and quality-boosted end products and services. Furthermore, Lean Startup tool-specific investigations are absolutely necessary. For instance if cohort and split testing with only a few users really provide accountable data, in order to make informed decisions on pivoting or persevering and if the thresholds may change depending on the contextual setting.

It has to be noted, that the chosen approach for this thesis is aiming for strong context sensitivity, especially in regards to the specific company investigated. As such, the measures and presented action points may prove less valuable and concise in a different setting or ecosystem of another company, however general acceptance and applicability is presumed. Further research may be conducted to further investigate if implementing similar measure in other contexts and the provided value. As Futurice itself falls into the category of a medium-sized IT vendor, further research for instance may investigate similar approaches of introducing and adopting Lean Startup principles in large-sized companies, IT or even other tangent fields such as design agencies, consultancies and others.

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# APPENDIX

Meetings & interviews  
Project cases



11 & 12

# 11. Meetings & interviews

31.05.2012	Thesis Workshop
11.06.2012	Thesis Workshop
13.06.2012	Lean Startup Helsinki Meetup
10.07.2012	Interview Alex Kluwe (AK), Project Manager, Futurice
10.07.2012	Interview Sebi Taucic (SB), UX and Service Design, Futurice
11.07.2012	Interview Teemu Turunen (TT), Services Director, Futurice
08.08.2012	Interview Anni Tölli (AT), Head of Marketing, Futurice
09.08.2012	Interview Mathias Calonius (MC), Head of Consultancy, Futurice
11.08.2012	Thesis Workshop
21.08.2012	Interview Petri Heiramo (PH), Organizational Scrum Master, Futurice
23.08.2012	Interview Matti Jylhä (MJ), Business Director, Futurice
24.08.2012	Interview Janne Toivola (JT), Senior Service Designer, Futurice
28.08.2012	Interview Suvi Numminen (SN), UI & Concept Design, Futurice
28.08.2012	Interview Tuomas Syrjänen (TS), CEO, Futurice



## 12. Project cases

As a medium sized Finnish IT vendor, it has to be noted that the presumption of the Lean Startup starting point of working in great uncertainty only poses a conditional truth to Futurice. As a contractor business, Futurice does not hold or develop any own products at this point of time. However, though Futurice may not primarily aim at creating disruptive innovations, the company does develop new services that are novel from a customer and customer adoption point of view, as will be shown through the following cases.

### 12.1 Case 1 - internal system development project

*Who: Confidential*

*What: UX consultancy on internal product system*

*When: 3 months, February 2012 - April 2012, ongoing development*

#### 12.1.1 About

The task at hand was to aid the customer in developing their internal system, which was a renewed version of the existing system in use, that facilitates employees to carry out administrative tasks such as signing up new clients. In order to extend the customer's product and service offering, the customer expressed the need to not only renew their existing system, but also to be able to sell tools and methods they had developed as individual products and product packages that their end customers could use freely themselves on a demand/pay basis through their renewed system.

Having had obtained their UX consultancy from a different company previously, Futurice was chosen as a new vendor concerning the UX consulting work. The software development was continued with the original vendor. The system at hand was a comprehensive and complex system, with various layers that had partially been taken in use, complemented by the continuous usage of the old system. Due to the intense usage of the previous system for several years, the customer claimed that they knew their end customers' needs and wants

well, however, having decided on an additional service offering by selling their products directly to the end customers to be used and analysed automatically, providing additional, more comprehensive, in-house testing for further and more detailed and targeted evaluation. Provided those unexplored and untested use cases, a range of hypotheses were created, including aspects relating to the underlying business and revenue model, pricing, successful end customer acquisition as well as concerning what the end product had to be.

The way the project was carried out was through close and regular direct meetings occurring twice a week, involving the customer's PM and the UX consultant, who both were empowered to make decisions about the end product's features. Furthermore, there was constant and direct communication between all team members via Skype, mail and Basecamp, sharing files, general progress and assigning tasks at hand to one another.

Given the structure and business objective for the project, the small development team almost behaved like a startup. As the customer wanted to offer tools also for their end customer, they were launching their own product, that was based on a business that had to be tested – hence assumptions were plentiful.

### 12.1.2 Challenges / Opportunities for Lean Startup

#### ***Challenges***

The project itself can be described as discontinuous, a handover based on previous' company's UX work. Furthermore, despite its wide-spanning service and product offering, Futurice was merely contracted for UX consultancy work, compromising a truly holistic way of working.

#### ***Opportunities***

Though an established enterprise, the customer was creating a new product offering for their end customers. They were launching a new product and have an established customer base, that is ideal for testing. In retrospective, the project team was indeed building a MVP, with the

aim of validating the underlying business hypothesis, whether the customers would actually sign up and pay for this. Though the customer was not creating a completely new market, the entered market itself was new to the customer, posing a range of hypotheses for the success of the product itself:

1. *The product developed and build is what people need.*
2. *The product pricing is appropriate.*
3. *The underlying business model is right (subscription-based services and packages)*
4. *The user acquisition flow is right and user conversion rates will pay off.*
5. *The targeted customers are the same as their existing customers.*

The fact that the system itself was being taken in use incrementally as well as the already established customer base using the service, offered an ideal ground for split testing and cohort testing, for instance validating various log in mechanisms. The identified hypotheses can be identified and validated through experimentation, that so far had primarily been based on mere benchmarking similar services and offerings.

## 12.2 CASE 2: Flow Festival 2012 mobile application

*Who: Nokia, FI*

*What: (free) Marketing html5 webapp for iphone, android, WP7 for Flow Festival 2012*

*When: 2 months, April 2012 - May 2012*

### 12.2.1 About

Providing the main sponsorship for the 2012 Helsinki-based music festival 'FLOW', Nokia asked Futurice to concept and implement a cross-platform, html5-based webapp, primarily fulfilling marketing purposes, allowing for basic functionality, such as browsing featured artists, creating a custom timetable as well as interact with the festival map amongst others, with its

overall look and feel closely following the existing CI of the festival.

Allowing for cross-platform usage including iOS, Android and WP7, brought about heavy design as well as technical restrictions, due to html5 currently remaining under development. However, there was promising potential to create the app with a reasonable budget, by utilising native wrappers. Though, a previous iOS application had been designed and distributed, a distanced and fresh approach was sought, focussing on the annually slightly adapted CI as well as the festival's programme taking the centre stage and acting as a starting point for the concept.

Due to the project presenting and involving various stakeholders, including the customer PO from Nokia's side, the festival organisation team, their design agency at hand relating to CI aspects, as well as Futurice's project team in itself — comprised of a lead designer, lead developer and PM — close collaboration was identified crucial for the project's overall success. Hence, weekly direct meetings for presenting the concept, wireframes and working prototypes (design and implementation taking off simultaneously) with the customer were arranged, occasionally also involving the event organisers to discuss content and CI-related aspects. In addition, constant communication was ensured through emails, drafts and builds, being sent weekly to all main stakeholders.

### 12.2.2 Challenges / Opportunities for Lean Startup

#### ***Challenges***

Due to the marketing focus of the project, it can be argued that the prerequisite of working in great uncertainty as defined by Ries (2011) did not apply. As there was no business model that needed to be tested and the fact that the customer base was arguably be well known due to being almost congruent to actual festival visitors, little assumptions needed validation.

### ***Opportunities***

The technical framework, as intended to be re-used and iterated again next year and for potentially various other events, bears the opportunity for validation of its effectiveness.

### **12.3 Case 3: .Windows 8 application**

*Who: Confidential*

*What: Berlin-based startup, application Windows 8*

*When: 3 weeks, June 2012*

#### **12.3.1 About**

The customer asked Futurice to develop and implement a Windows 8 application. The customer already had used another vendor to design and implement their website, iphone and ipad application. Due to their specific expertise, Futurice was asked to implement a Windows 8 application, for which they delivered a ready-made concept. Based on that concept, they asked for a clickable prototype, to discuss the interaction design, before the decision for implementation was made.

#### **12.3.2 Challenges / Opportunities for Lean Startup**

##### ***Challenges***

The customer did not want Futurice to challenge their concept, but rather asked for straight implementation. Though there were a range of assumptions connected to porting a validated model onto a novel platform, no validation was sought for, as the customer being a fairly young startup themselves, had limited resources and tools available.

##### ***Opportunities***

The level of uncertainty dealt with in the project was limited, though the amount of assumptions were enormous. As the customer was aiming at entering a hitherto novel market



to them, validation concerning previously successful strategies would have been valuable. A customised approach could potentially have yielded a more successful product and service offering, specific to the targeted platform and its users.

#### 12.4 Summary

The projects carried out at Futurice, typically are of very different nature, ranging from simple marketing applications to complex enterprise systems. The challenges and opportunities for applying the Lean Startup process have shown to be decisively determined by the customer. Furthermore, the potential benefit validation-based learning can bring, is assumed to be highly valuable, as assumptions are being listed and tested, rather than merely acknowledged but disregarded.





