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Introduction

1.1 A changing business landscape

To say the world around us has changed is to state the obvious. The world is always changing. What is remarkable is not the change *per se*.

Instead, what is remarkable is the *pace* of that change which has increased dramatically. What is also remarkable is the *extent* of the change, which has resulted in a significant paradigm shifts for business. Over the last ten years, we have seen the rise of several great startups and products that have leveraged technology to create new business models, disrupt incumbents and grow rapidly. It is remarkable to think that just ten years ago transformational companies such as Dropbox, Uber and Airbnb didn't exist.

In response to this rapid pace of change in the business environment, most incumbent companies have been slow to respond. In as much as we can list the great companies that have emerged in the last decade, we can also list examples of formerly great companies that have been disrupted. Examples include Kodak, Blockbuster, Nokia, HMV, Borders, BHS and Blackberry. These companies and others have found themselves in trouble owing to the impact of innovative technologies on their industries.

Most established companies found their success during a time when the pace of change was much slower. So for them, great strategy meant finding a competitive advantage and protecting it through good financial management.[1] These businesses were run on the basis of 3–5 year business planning, annual budgets, waterfall product development methods, siloed business departments (e.g. HR, marketing, finance and legal) and investment processes that relied on making big bets upfront (e.g. for product development or mergers/acquisitions). So just when they need to be more agile and responsive, these companies find themselves with management systems and processes that were most useful during a different era.

Nowadays, the notion of a stable business environment is a myth. Companies have to be managed to consistently move from one competitive advantage to another.[2] Good strategy is now about *exploiting* current advantages while *exploring* new ones.

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[1] Ireland, R.D., Hoskisson, R.E. and Hitt, M.A. (2011). *The management of strategy.* London: Cengage Learning.

[2] McGrath, R.G. (2013). *The end of competitive advantage.* Harvard Business Review Press: Cambridge.

In such a world, companies need new management frameworks and ways of working. This book presents one such a framework. Based on design thinking, lean and agile methodologies, the Lean Product Lifecycle (Lean PLC) is a framework that helps companies make products people want and manage investment risk by making the right decisions at the right time.

Our framework provides a systematic way for companies to incrementally invest in new ideas, manage new product development, scale or sustain mature products and retire declining ones. Our goal is to provide companies with the right lens for examining their portfolio of products in order to make the right investment and product development decisions. The Lean PLC does not require established companies to become like startups; rather we provide tools and methods that allow enterprises to understand and apply lean thinking.

1.2 Lean thinking

Over the last 20 years, lean and agile methods have transformed the way products are developed and managed. Although technology startups have been at the forefront of developing and advocating lean and agile, these methods were not developed for startups only. Lean and agile are based on a set of underlying principles that, if well understood, can be applied to any company. Understanding and applying these principles is what can help transform our companies.

Lean thinking is not about being cheap or small. The absolute size of an investment is *not* what defines a process as being lean. Instead, lean thinking is the discipline of doing the right things at the right time. What is defined as waste in lean thinking is when companies do the wrong things at the wrong time. For example, one of the reasons why new products fail is *premature scaling* (i.e. spending too much money or resources building our products without testing with customers and then just launching those products to the broader market).

The practice of lean thinking is particularly challenging for established companies that are already operating at scale or startups that are keen to quickly build their product and release it to the wider market. How do they ensure that they are doing the right

things at the right time? At the heart of the lean approach is the distinction between *searching* and *executing.* According to Blank and Dorf a startup is an organisation whose primary goal is to search for a sustainably profitable business model. In contrast, an established company spends most of its time executing on a known business model.[3]

Blank and Dorf use this distinction between startups and established companies to good effect here. But this focus on distinguishing startups from established companies can sometimes be misleading. What is really important here are not the different types of companies but the different types of products they are managing at any given time. Startups are usually working on new products that are yet to be proven in the market. They are still looking to understand customer needs, create the right solutions and find profitable business models. In contrast, most established companies have mature products that are already serving known customer needs, with proven business models.

Using the product perspective can help established companies adopt lean thinking. Rather than viewing their company as single institution with one business model, management can take a portfolio view. When they start thinking of their products as a portfolio, management can then examine each product and classify it as either in *search* mode or *execution* mode. Once they know which mode a product is in, this can then help them make more informed decisions about what to do next (i.e. the right thing at the right time).

The portfolio approach also helps companies view strategy as a way of *executing* on current competitive advantages, while *searching* for new ones.[4] So beyond managing their core cash-cow products, every company should also be working on future-facing product ideas. If the majority of a company's portfolio are mature products, this can be a signal for management to do something to redress this imbalance. Since disruptive innovations have affected every industry, having a balanced portfolio is an imperative for established companies.

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[3] Blank, S. and Dorf, B. (2012). *The startup owner's manual.* K&S Ranch: California.
[4] McGrath, R.G. (2013). *The end of competitive advantage: how to keep your strategy moving as fast as your business.* Harvard Business Review Press: Cambridge.

1.3 Managing your portfolio

In order to achieve a balanced portfolio, companies can use frameworks that allow them to distinguish between different types of innovation. One framework we found useful in our work is the *innovation ambition matrix.* In an article for *Harvard Business Review,*[5] Bansi Nagji and Geoff Tuff used two main dimensions, *products* (new products *versus* existing products) and *markets* (new markets *versus* existing markets), to distinguish core, adjacent and transformational innovation.

- *Core innovation* involves making incremental changes to existing products for existing customers. Such innovation uses assets the company already owns and markets in which it is already present.

- A*djacent innovation* involves taking currently successful products to new markets or developing new products for current markets. The company is using existing capabilities but putting them to new uses.

- *Transformational innovation* involves creating new offerings for new markets. Here, the company is developing new products or services for new markets that it is currently not operating in.[6]

The strategic role of the innovation ambition matrix is to make sure that every company has a balanced portfolio of products and business models. It is important for every company to have within its portfolio, products and services that cover the range from core, adjacent and transformational innovation. Nagji and Tuff propose a magic ratio for companies to allocate resources within a balanced portfolio; i.e. 70 per cent in core, 20 per cent in adjacent and 10 per cent in transformational.

This ratio is not fixed and can be adapted depending on company and industry. The goal is for each company to make explicit its innovation ambitions, and then work towards balancing its investments accordingly. It is also important to make clear that the ratio is not about the exact number of the different types of products within a
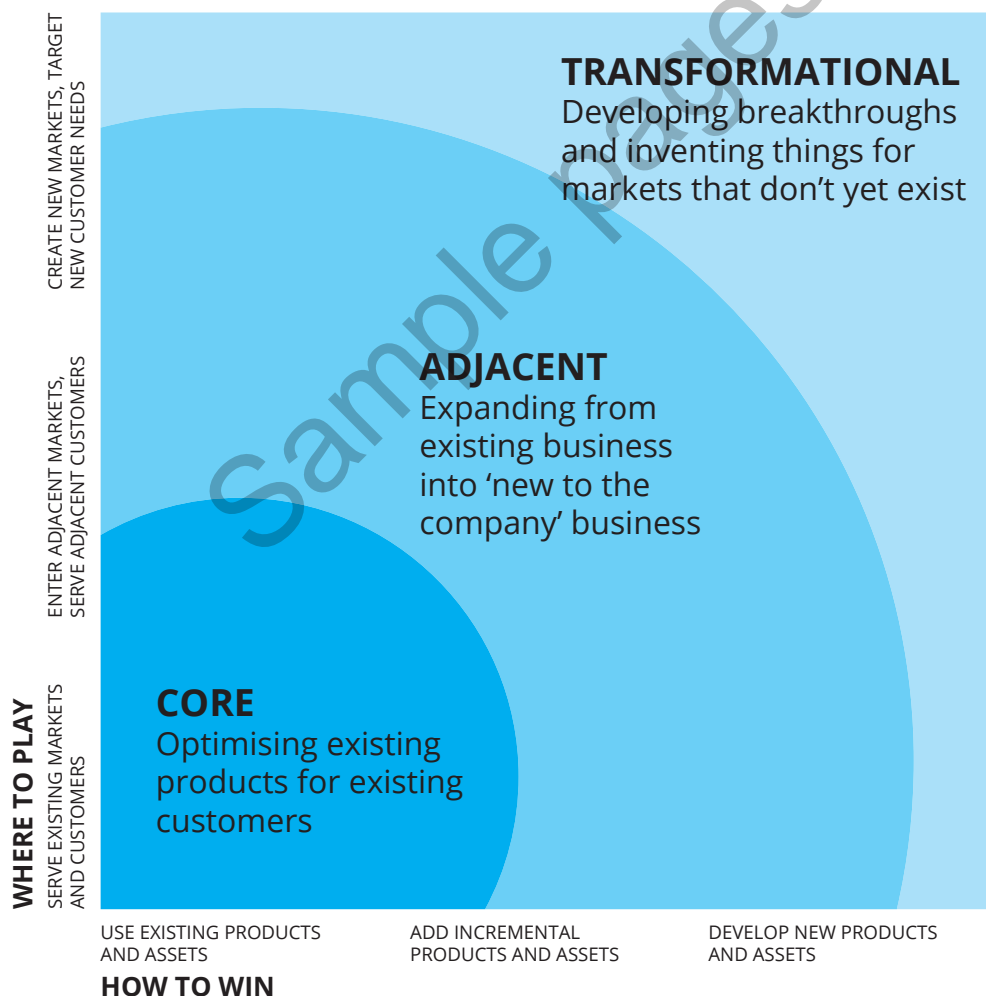
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[5] Nagji, B. and Tuff, G. (2012). Managing your innovation portfolio. *Harvard Business Review, 90*(5), 66–74.

[6] Nagji and Tuff's framework in similar to McKinsey's three horizons model. Baghai, M., Coley, S. and White, D. (1999). *The alchemy of growth: practical insights for building the enduring enterprise.* London: Orion Business.

company. It is about resources and how they are allocated across the different types of innovation.

In fact, a relatively small investment with just 5 per cent of company resources in transformational innovation can result in a larger number of new product ideas compared to core products, if the company uses incremental investment methods and innovation accounting. More on that later! We will now turn our attention to how companies should be managing the range of products within their portfolio, by doing the right things at the right time.

Figure 1.1

TRANSFORMATIONAL
Developing breakthroughs and inventing things for markets that don't yet exist

ADJACENT
Expanding from existing business into 'new to the company' business

CORE
Optimising existing products for existing customers

CREATE NEW MARKETS, TARGET NEW CUSTOMER NEEDS

ENTER ADJACENT MARKETS, SERVE ADJACENT CUSTOMERS

SERVE EXISTING MARKETS AND CUSTOMERS

WHERE TO PLAY

USE EXISTING PRODUCTS AND ASSETS

ADD INCREMENTAL PRODUCTS AND ASSETS

DEVELOP NEW PRODUCTS AND ASSETS

HOW TO WIN

1.4 Right thing, right time

It is important for us to recognise that the tools and methods for managing innovation are different from those that have traditionally been used to manage core products. The clue to this difference lies in the distinction we have already highlighted between *searching* and *executing.* Products that are still searching for sustainable business models should not be managed as if they are already at scale in the market. However, within that general distinction between searching and executing, there are key steps that companies need to follow.

To help articulate these steps, we first need a shared definition of what represents successful innovation. From our perspective, *successful innovation is the combination of creative new ideas with sustainable business models.*[7] A sustainable business model is made up of two parts: (1) products that serve real customer needs and (2) the ability to create and deliver those products to customers in a repeatable and profitable way. This definition of innovation allows us to break *searching* into three key steps: *ideation* during which we generate creative new ideas, *exploration* during which we test whether our ideas serve real customer needs and *validation* during which we create the solution and develop a profitable business model.

Once a sustainably profitable business model has been discovered, we have achieved so-called *product–market fit.* Only then are we ready to begin *executing* and taking the product to scale. In the early days of scaling, success is measured by how well we can *grow* customer numbers, revenues and profits. Over time, the product will reach its maturity and growth will slow down. At the point, the focus will move to *sustaining* revenues while optimising costs. As time moves on, the product starts to decline significantly it can be *retired* and moved out of our portfolio.

It is important to note that waste can occur during execution as well (e.g. adding features to product that don't add value to customers). As such, lean thinking applies across the whole lifecycle of a product. Doing the right thing at the right time means recognising the lifecycle stage that the product is in and using the correct product development methods and investment decisions for that stage. This is now *Management 101* for contemporary companies.

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[7]   Viki, T., Toma, D. and Gons, E. (2017). *The corporate startup.* Amsterdam: Vakmedianet.

Figure 1.2
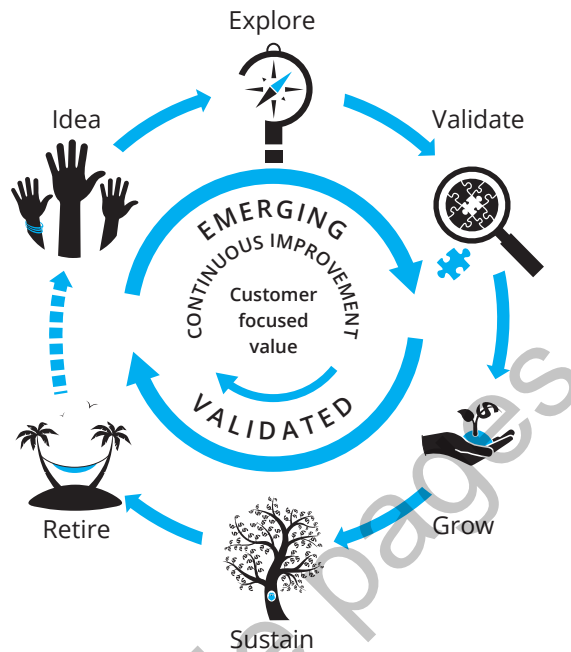
1.5 How the Lean Product Lifecycle works

This idea of a product lifecycle is not new. The concept was first developed by Raymond Vernon in 1966.[8] Vernon saw products going through four stages; *introduction, growth, maturity* and *decline.* In this model, there is no requirement for innovators to search for a profitable business model before moving onto the growth stage. The Lean PLC was design to deal with this key shortcoming.

Our framework has six stages. The first three stages are on the left side: *idea, explore, validate.* This side of the Lean PLC is focused on searching for a profitable business model with the ultimate goal of getting to product–market fit (i.e. the dotted line). On the right side of the Lean PLC are the last three stages: *grow, sustain, retire.* This side of

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[8] Vernon, R. (1966). International investment and international trade in the product cycle. *The Quarterly Journal of Economics.*

the Lean PLC focuses on executing on a known business model, exploiting it with efficiency until the product is ready to be taken of the market.

We will now briefly describe each Lean PLC stage from the product development perspective. To really understand the practices that underlie the Lean PLC, it is always key to remember that *no product or service should be taken to scale in the market before its business model has been tested and validated.*

Idea: During this stage, teams use customer and market insights to generate ideas. After coming up with a number of ideas, they should then choose one idea to work on, review that idea for risky assumptions and brainstorm ways to test these assumptions.

Explore: During this stage, teams get out of the building and test their risky assumptions. The main focus of Explore is to test assumptions about customer needs, problems and job-to-be-done.

Validate: During this stage, team use the insights from Explore to develop a solution for customers, starting with a minimum viable version. The point is to iteratively develop a product that delivers value to customers. The solution development process is also used to test aspects of our business model including pricing, costs and channels.

Grow: A key consideration for entering the Grow stage is the traction we demonstrate during Validate. With a validated business model, now it's time to take our product to scale. The main focus during Grow is on increasing customer numbers, revenues and profits.

Sustain: Over time, all products reach a level of maturity as markets get saturated, competitors enter the market or the technology changes. When this happens, the products enter the Sustain stage, during which the focus shifts to sustaining revenues and profits, while optimising operations and reducing costs.

Retire: Nothing last forever! Eventually, there comes a time when a product must be retired. During this stage, it is important to ensure that customers are not inconvenienced by putting in place a plan to mitigate negative effects on customers.

These are the product development best practices connected to the six stages of the Lean PLC. However, for teams to engage in such practices they need access to the right resources at the right time. As such, connected to product development are the ongoing investment decisions that are made by management. How managers make decisions to invest in or manage projects will have an impact on how well teams can use the Lean PLC to develop their products.

1.6 Spend less upfront

Premature scaling does not happen by itself. It is a problem that is fuelled by how companies have traditionally invested in new ideas. At the heart of every investment decision they make is the business case or plan. No new product is ever developed until the product team creates a plan that demonstrates a good return on investment (ROI), projected over three to five years. At the heart of the business plan is a request for an investment amount. This number is usually quite large, because it includes all aspects of developing, marketing and scaling the product.

We have seen companies invest millions in untested ideas on the basis of the business case alone. This is premature scaling, fuelled by corporate resources. Business planning works well for established products with a known trading history upon which to base our five-year projections. And even then, we have to be careful of potential shifts in our business environment. But when it comes to new ideas, especially transformational innovation, business planning is an exercise in fiction writing. When a plan is created that early in the process, most of what is in the plan are assumptions; even if they are written in the document as facts.

Until recently, there has not been any other management framework beside business planning that managers could use to make investment decisions. In 2010, Dave McClure published an article entitled *Moneyball for Startups.*[9] In the article, he outlined an investment process that involves making small initial investments in ideas while

Figure 1.3
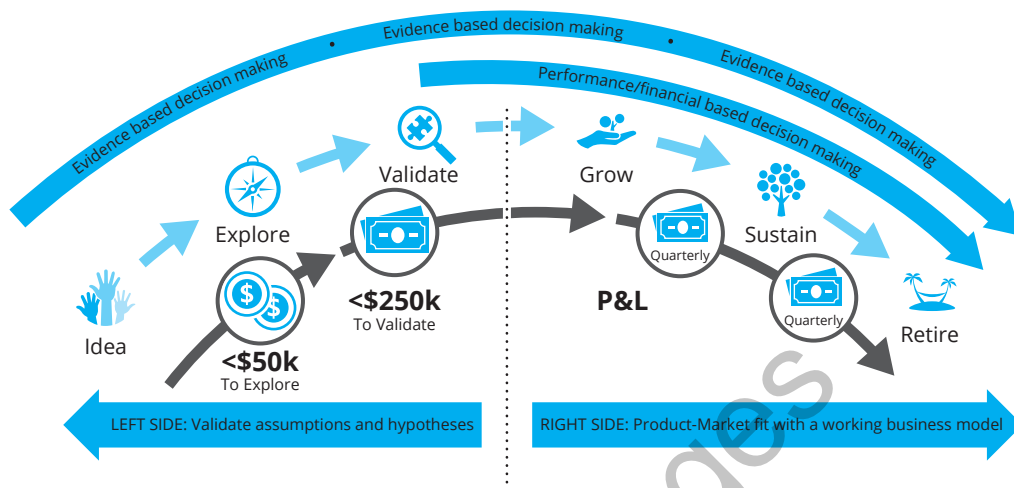
teams are searching for product–market fit. If the teams succeed at searching, investments in their ideas can then be increased. In practice, the small initial investments are used to test whether the product idea has potential before a lot more money is spent.

The Lean PLC provides a framework that can form the basis for established companies to play moneyball. During Idea, Explore and Validate the focus is mostly on testing the market, potential solutions and the business model. As such, small amounts of money can be invested and as ideas start to show traction, managers can then make larger investments. Each company can set its own upper limits for investment depending on industry and types of products. At Pearson, we recommended investing no money for the Idea stage, less than £50,000 GBP during Explore and less than £250,000 GBP during Validate.

When a product crosses to the right side of the Lean PLC, investments can then be based on P&L. This would be a validated P&L and any projections made at this stage would be based on learnings from the first three stages. This approach

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[9] McClure, D. (2010). *Moneyball for startups: Invest BEFORE product/market fit, double-down AFTER.* 500 Hats. Available at http://500hats.typepad.com/500blogs/2010/07/moneyball-for-startups.html

chimes with our message to do the right things at the right time. There is a right time to make a large investment in an idea. It is after it has demonstrated traction. Before that, we make incremental investments to allow our teams to test ideas in the market. This is not to argue that no ideas will fail. Innovation is about accepting some failure. However, incremental investing allows us to learn quickly if an idea has legs and stop investments in failing projects before too much money is spent.

1.7 How to build your product council

So, who is responsible for making these incremental investments in products? It is possible for individual leaders or managers with the budget responsibility to make such decisions. At Pearson, we pioneered the concept of product councils. These are investment boards that are empowered to make decisions across the Lean PLC. Decision making by committee is sometimes frowned upon but we believe that a small cross-functional board can be useful in keeping individual decision makers accountable in terms of asking the right questions at the right time.

It is normal practice within companies that teams requesting funding have to prepare some sort of business case. Most companies use business case templates with the key sections that they expect each team to complete before their funding request is considered. The Lean PLC provides a framework for creating similar templates. The key difference is that we do not recommend using one generic business case template regardless of the lifecycle stage of product. Rather, we believe that templates should be based on the lifecycle stage and ask only the relevant questions for that stage.

In each chapter of this book, we will provide examples of templates that can be used by teams to make submissions and investment boards to make decisions based on the Lean PLC stage. A map of how each template aligns to a PLC stage is presented below. We will recommend specific questions and criteria that can be used to move a product from one stage to another. These criteria also inform the activity we recommend that product teams engage in during any particular stage. This alignment between teams doing the right things as they develop their products and managers asking the right questions before they make investment decisions reveals the power of the Lean PLC.

Figure 1.4
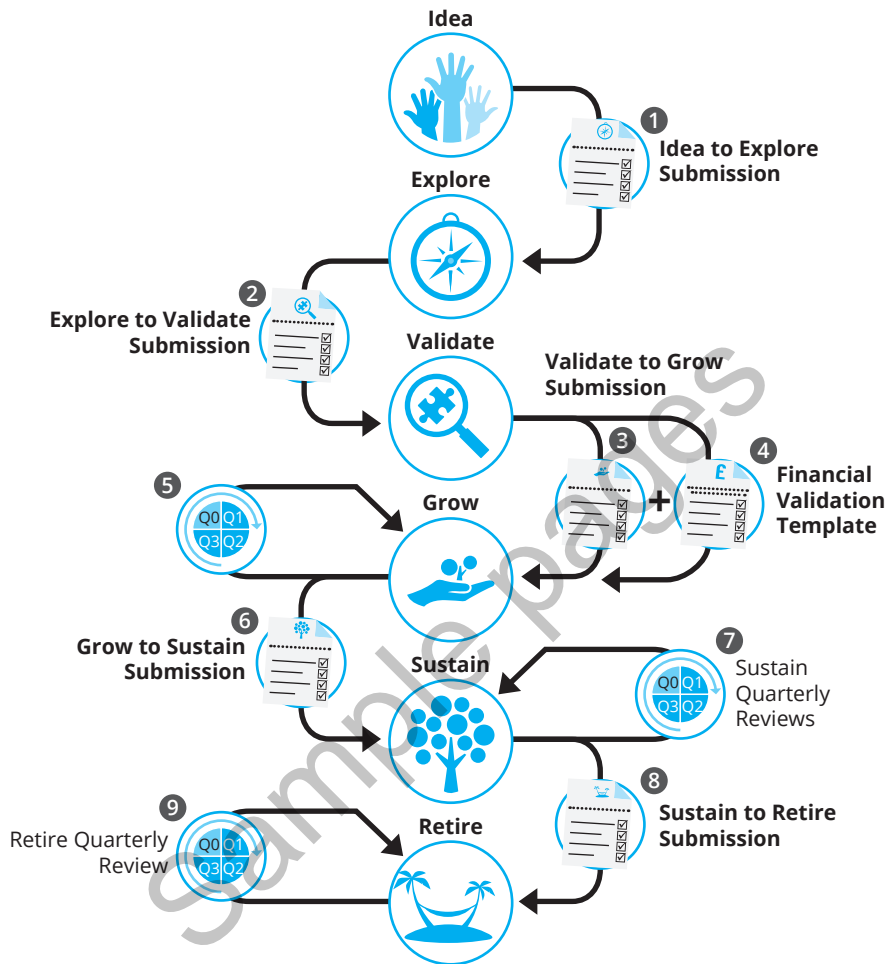
1.8 Not a straight line

The challenge with frameworks is that they are often mistakenly treated as canonical truths. Critics rightly point out that frameworks do not fully represent reality. This is something we fully agree with regards to our own framework. It is highly unlikely that any product team will move through the Lean PLC from stage to stage in a linear fashion. It is also unlikely that product teams and managers will find clear cut

boundaries when trying to move a product from stage to stage. Instead, boundaries will be fuzzy and decisions will have to be judgement calls. This is the nature of innovation and business in general. It is a nonlinear mess that can best be described as organised chaos.

So why have we created a framework at all? And why have we presented it in linear fashion? Luke Hohmann describes frameworks as tools for knowledge workers.[10] Given the non-concrete nature of knowledge work, concepts around innovation and management can be harder to bring to life. Frameworks provide reference points that allow knowledge workers to come to grips with complex and ambiguous situations. The Lean PLC takes principles and practices from multiple disciplines and combines them into a usable framework.

That being said, it is important to recognise that the Lean PLC is described in a linear fashion for story-telling purposes only. This lifecycle story makes it easy for people to understand how the Lean PLC works. In practice, however, the Lean PLC is a nonlinear. Not all products in a company will enter the Lean PLC at the idea stage. In every company we have worked with, there has been a portfolio of products that were at different lifecycle stages. Each product enters the PLC at the appropriate stage. What we provide are a series of questions and analytical tools to help businesses classify their products.

The journey of a product along the Lean PLC is also nonlinear. Products do not move between stages in one direction only. It is possible for product to skip a stage or move back a stage. For example, a team can get strong signals around customer needs. However, when they create the solution, they then find that customers are not as willing to buy as the initial signals may have indicated. This means that the team may have to go back to Explore and examine whether they got their understanding of customer needs wrong.

There are also times when a product is scaling well in the markets; but a change in the environment scuppers growth. This may be a time to go back to Validate and rethink the business model. Products in Sustain can get a boost by the discovery of a new market

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[10] Hohmann, L. (2006). *Innovation games: creating breakthrough products through collaborative play.* New York: Pearson Education.

and move back to Grow. These are all possibilities within the Lean PLC. What we bring to the table are a set of tools that allow companies to understand where their product is on their lifecycle journey and make informed decisions about what to do next.

1.9 The lean mindset

We hope you enjoy this playbook and find it useful in your day-to-day work. But before we begin our journey with you, we need to get in the right mindset. So here are some basics tips and guidelines.
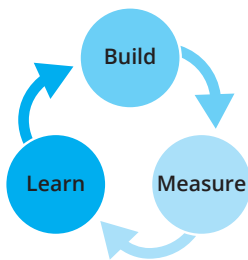
At the heart of the Lean PLC is the build–measure–learn loop.[11] This will help you identify your assumptions and test them on an ongoing basis. Across the Lean PLC, iteration and continuous improvement are key principles.
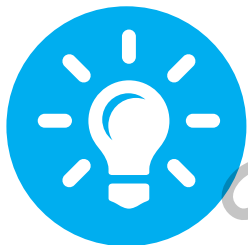
Question every assumption. No business plan survives first contact with customers. Ship experiments fast, small and soon! Test assumptions and business models before entering new markets, even with an already growing product.

Get out of the office! There are no facts in the office. Go out to the real world, meet and talk with customers. Keep engaging with the market throughout all stages of the Lean PLC. Build–measure–learn!

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[11] Reis, E. (2011). *The lean startup.* New York: Crown Business.
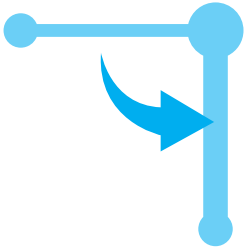
Push hard as long as you can but PIVOT or STOP if you need to. It's about doing the right things at the right time. We want to be building the right product the right way; not building the wrong product the 'right' way!

You need to create cross-functional/multidisciplinary teams in which every member's contribution is valued. Keep teams as small as you can during the early stages of the Lean PLC and bring in more people as you need them.
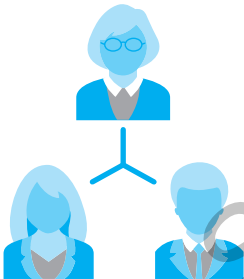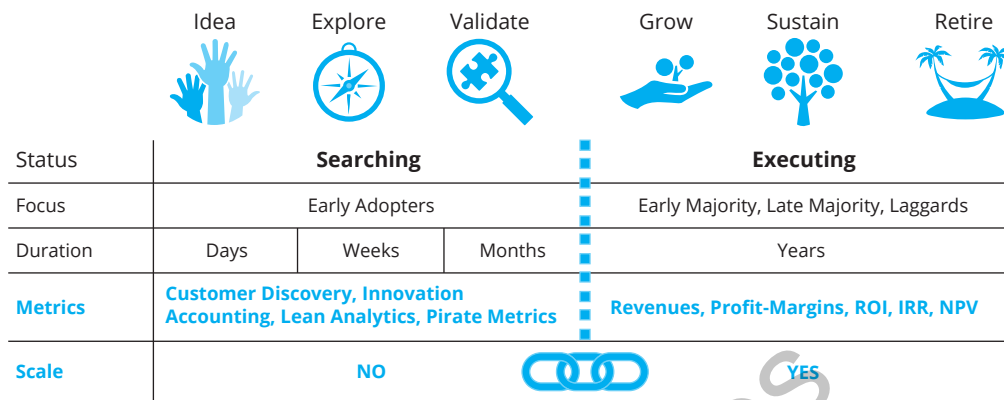
Make decisions as a team where possible. This includes both product development decisions and investment decisions. All decision making should be based on data and learning. As your product and team grows, you have to maintain the discipline of testing and iterating.

Fail fast and learn fast. The Lean PLC is not a linear process, it's a fluid one. At any stage of the PLC it is possible to go back to earlier stages. Make these decisions quickly using evidence or validated learning.

Figure 1.5

	Idea	Explore	Validate	Grow	Sustain	Retire

Status	**Searching**			**Executing**		
Focus	Early Adopters			Early Majority, Late Majority, Laggards		
Duration	Days	Weeks	Months	Years		
Metrics	**Customer Discovery, Innovation Accounting, Lean Analytics, Pirate Metrics**			**Revenues, Profit-Margins, ROI, IRR, NPV**		
Scale	**NO**			**YES**		

? An interview with:
Sebastian Cadell, Partner at Nosco

Nosco is a software and consulting company. Since 2006 they have helped some of the most forward-thinking companies bring their employees' ideas to life. This includes companies such as Danfoss, Volvo, Evonik, Heineken and Allianz. In addition to the Nosco platform, a social platform for innovation, Nosco helps clients design and run corporate innovation competitions, develop corporate entrepreneurship, build innovation communities, and leverage the possibilities of open innovation. Nosco has been cited as a leader in innovation management by Forrester (The Forrester Wave™, 2016).

In your experience, what are some of the top challenges large companies face when it comes to generating new ideas for products or services?
In most companies, only 'the select few' (the SWAT team) know about the process and really get to contribute to generating ideas. Some companies also have a stage gate approach that is too rigid and places too much emphasis on analysis and business planning in the early stages, instead of exploration and experimentation. There is often

insufficient involvement of observations, perspectives and ideas from across the organisation; and insufficient involvement of executive management in terms of decision making, commitment, risk taking, resource allocation and allowing exemptions from standard operating procedures.

As a company, what best practices do you recommend companies put in place to help their teams generate great ideas?

There should be a clear focus of the innovation effort driven by a specific and important business challenge. People should not generate ideas in a vacuum. There should be involvement of people across the organisation: the front-end and the back-end, the veterans and the newcomers, the experts and the generalists, the top and the bottom. This helps the company to benefit from multiple perspectives. Teams should not just be made up of the 'usual suspects'. Instead, there should be a process that allows for identifying relevant people in the organisation based on their ideas as well as their contributions to ideas.

Companies also need a process that allows for exploring, refining, testing and learning before passing judgement on the ideas. First ideas will often be poorly articulated and almost always be flawed. But the answer is not to have your smartest people analyse them and shoot them down. The answer is to find inexpensive ways to test the most promising ideas and learn.

Finally, there should be a process that brings ideas forward to executive management to ensure their commitment, and which motivates people to share their best ideas by letting them be part of the realisation of the idea within the company.

Without giving away too much detail, can you share a story of a company that you have worked with that ran a great idea campaign? What did they do well?

The good companies we have worked with do a lot of what I spoke about above. But they also institutionalised the process so that it became a recurring thing that could be developed and improved and could deliver better results through increased awareness, understanding and skills in the organisation. They also extended the process from innovation challenge, to implementation challenge and value realisation challenge in order to keep up the momentum in the subsequent stages of innovation.

Finally, what do you think companies should do once they have great ideas in order to actually bring them to life?
Companies need to adopt more iterative and agile approaches to bring ideas to life. They need to clearly distinguish between the process for core product execution and the process for new product development. Companies also need to provide the right structures and resources to increase the chances of success; and to keep executive management closely involved to provide air-cover and strategic support.

Sample pages