One size does not fit all

Increasing intrapreneurial learnings from ING's innovation methodology

Graduation report
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8th of May 2018

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Colophon

Glossary

Term	Explanation
CInO	Chief Innovation Office, all staff and people driving innovation at ICEC. CInO consists of three teams, innovation management, transformation office and ICEC.
Horizon 1, -2, -3	Degree of disruptiveness of an initiative. Horizon 1: improve the core, Horizon 2: extend the core, Horizon 3: disrupt the core
ICEC	ING Customer Experience Center, ING office in Amsterdam where teams develop solutions to transform ING's way of working.
Initiative	Internal start-up within ING
Initiative lead	The leading person, often the one at the forefront of the initiative. Initiative leads are vital for convincing management of progress and motivating the team.
Innovation Fund	Fund to support breakthrough innovations that take ING forward. It is delegated to assess progress of initiatives pitching at stage-gate decision moments.
Innovation funnel	Visual representation of innovative initiatives within a corporate organisation.
Innovation management	Team responsible for guarding the vision and budgeting of CInO, ensuring stage-gates are held to assess initiative progress.
Innovator	A driver of innovation. Relating this to ING's practice, this describes PACE coaches and intrapreneurs.
Intrapreneur	An entrepreneur within a corporate context. An intrapreneur at ING is someone within an initiative driving ING's disruptive strategy by building a new solution proposition. Intrapreneur is used to describe initiative members.
KPI	Key Performance Indicator, indicator to measure the success of a solution or organisation.
MVP	Minimum viable product, prototype integrating several elements of a solution in order to gain more valuable data from user-testing.
PACE	ING's structured innovation methodology combining design thinking, agile way of working and lean start-up.
PACE coach	Innovation coach feeding the PACE process to intrapreneurs and supporting their innovative journey.
PX (P1, P2, etc...)	Interviewed participants; Participant 1, participant 2...
Transformation Office	PACE coaches are part of the transformation office, delegated to transform ING's way of working. Supports the development of disruptive solutions.

Abstract

This thesis explores what it takes to make innovation at ING's PACE accelerator more effective. PACE is ING's innovation methodology, combining design thinking, agile working and the lean start-up approach into one whole. Within ING's corporate accelerator track PACE is used to develop disruptive value propositions.

Case-study research shows that the eighteen weeks described in guides to develop a solution from problem exploration up until a validated minimum viable product recurrently fails to be met. A major variable affecting the development time required is the elaborateness of PACE. When joining the accelerator, a multitude of guides condense to about 150 pages on innovation in the PACE accelerator.

Twenty interviews with PACE coaches and intrapreneurs indicate that this way of describing innovative practice is too elaborate for new innovators to grasp. Intrapreneurs struggle to understand their design process as the theory seems too linear to unlock the full potential of creative divergence and to react to emerging insights from user-tests.

A literature study shows that intrapreneurial skills are vital for the effectiveness of innovation. To achieve success, intrapreneurs need to become more skilled at balancing the five design activities of formulating, representing, moving, evaluating and managing.

To conduct these activities, intrapreneurs benefit from reflexive practice on their use of innovation methodology. Based on design expertise theory, reflection on an intrapreneur's design process allows for frequent transitions between the five design activities. By doing so, a higher cognitive level is fostered and tacit knowledge is turned into explicit learnings.

This project envisions Dash, a platform for innovation learnings, bringing:
▶ An integration of all PACE offerings through a visualised overview,
▶ A low-key way of reflecting on the design process, and
▶ An encouraging enviroment for innovators to share key insights

By integrating these functions in an online platform, the possibilities of PACE analytics open a new way of exploring causes of less-effective innovation. Propagating a data-driven way of measuring intrapreneurial transformation.

Although the current way of applying PACE is effective to generate disruptive solutions, its presentation through elaborate guides fails to resonate with intrapreneurial expectations. To better leverage intrapreneurial skills and make innovation more effective, I urge a personalised way of presenting PACE to allow for the autonomous design process exploration to flourish.

From here, further research is required to assess the impact of intrapreneurial reflection on the effectiveness of innovation.

Acknowledgements

Fig. 1 - Thank you very much

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Pre-readings

The project

Internal analysis

Data analysis

Literature review

Discover

Analysis

Design challenge

- Insights from discover
- Causes of PACE's elaborateness
- The hopeful situation
- The design challenge

Define

Designing

- Design for planning
- Design for planning
- Design for overview

Develop

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Fig. 2 - Visual representation of this thesis' design process, see paragraph 1.3 for more on this methodology.

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Discover

Define

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The project

What if banking as we know it would change completely? With the rise of new technologies, the requirement of changing the ways of banking needs to change. As Ralph Hamers, CEO of ING group says about this changing market: "*Consumers want banking, but not necessarily banks.*" (Lawrence, 2017). The threat of digitization to banking is recognized by ING and it prepares the grounds for a focus to disrupt their own core of banking through innovation.

"*Consumers want banking, but not necessarily banks.*"

- Ralph Hamers, CEO ING group at money 20/20 conference

1.1. Context

During the recent financial crisis, ING took some serious hits, being a bank. Since 2008 the number of employees dropped from 124.000 to 54.000 (ING, 2017a). To cope with these setbacks, ING chose to embrace an agile way of working, inspired by successful companies such as Spotify, Zappos or Google (Jacobs, Schlatmann & Mahadevan, 2017). This transformation enforced their way of working to better meet practice of a corporate start-up (Viki, Toma & Gons, 2017).

Parallel to the agile way of working throughout all ING businesses, the Chief Innovation Office (CInO) is tasked with the challenge to drive ING's disruptive innovation (ING, 2017b). The goal is to create new solutions in order to reach new customer segments and disrupt the current business model.

To create a structured process for this, ING developed PACE as their way of innovating (ING, 2017e). It integrates three best-practices of innovation: agile working, the lean start-up and design thinking. Empowering their own people to become better at innovation is exactly what ING is attempting to achieve with PACE.

No longer will ING stay put and look at what they are currently doing, but proactively will they approach and explore new areas to expand their business. Current accelerator practice shows that they have been successful at realising multiple innovation tracks. Ranging from an innovation bootcamp to foster employee ideas to an actual innovation fund to manage budgeting for disruptive innovation within the accompanying accelerator track.

These practices revolve around ING employees driving innovation, something which is not in everybody's blood by nature. However, being an innovator is not something decided by biology, but something we can learn and become more skilled at (Cross, 2004).

1.2. The assignment

The challenge for intrapreneurs at ING's CInO is to develop disruptive products and services. To support this, ING's innovation methodology PACE is presented to new intrapreneurs through various documents and by PACE coaches who take the role of guiding the PACE process.

The initial assignment is to: '*Improve the effectiveness of initiatives within ING's PACE accelerator'*. This forms the base of exploration how to reduce costs, improving satisfaction for intrapreneurs and PACE coaches while driving innovation and to find causes of ineffective innovation.

In chapter 2 on page 8, the internal analysis, I explicate how innovation at ING's accelerator program is set-up and the role PACE plays. Based on this analysis, a problem is formulated in paragraph 2.3 on page 17, ultimately leading to the definition of a design challenge in paragraph 5.3 on page 46, indicating the start of the design phase.

Since the study of Strategic Product Design involves creating tangible solutions, chapter 6 on page 48 kicks of by proposing solutions to make innovation at ING's corporate accelerator track more effective.

1.3. The approach

The thesis' methodology consists of two parts, analysis and design. Appendix A provides a more elaborate description of the complete methodology followed.

Analysis - Discover:
During the Discover step, the goal is to understand the context of ING and literature within the frame of the assignment. Through case-study research, exploratory- and in-depth interviews an internal analysis and data analysis is conducted. The methodology for Discover is based on Eisenhardt's (1989) recommendations for case-study research. Without a set hypothesis I explore the context to identify emerging topics of interest and find the most relevant problem to solve.

Analysis – Define:
Based on the conclusions of the literature review, the data from the internal analysis and my gut feeling as a designer, I define the design challenge, describing the solution frame.

Design – Develop:
As the name suggests, solution development starts here, through ideation in two solution directions *design for understanding* and *design for planning.* Resulting in two solutions, the innovation methodology canvas and initiative profiling. To enhance both solution directions, the lean start-up methodology (Eisenmann, Ries & Dillard, 2013) forms the base of further development, going through quick build-measure-learn cycles with users. Eventually, the choice is made to pivot the direction towards *design for overview* and rapid prototype an interactive prototype.

Design – Deliver:
Deliver's focus is on creating the final product proposal. I assess whether the solution meets the design challenge and validate the desirability, feasibility and viability of the solution (Calabretta, Gemser & Karpen, 2016). By interviewing PACE coaches and innovation management I conduct these tests.

2

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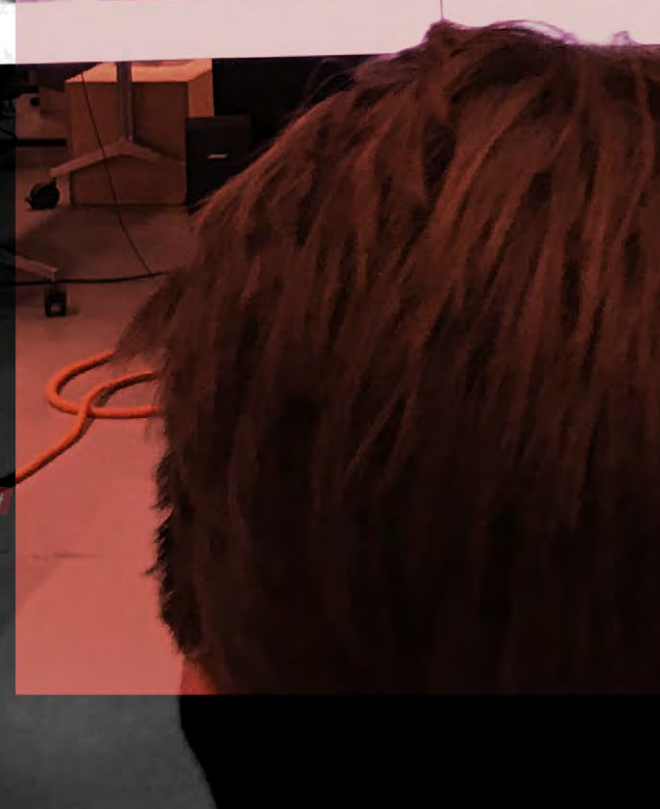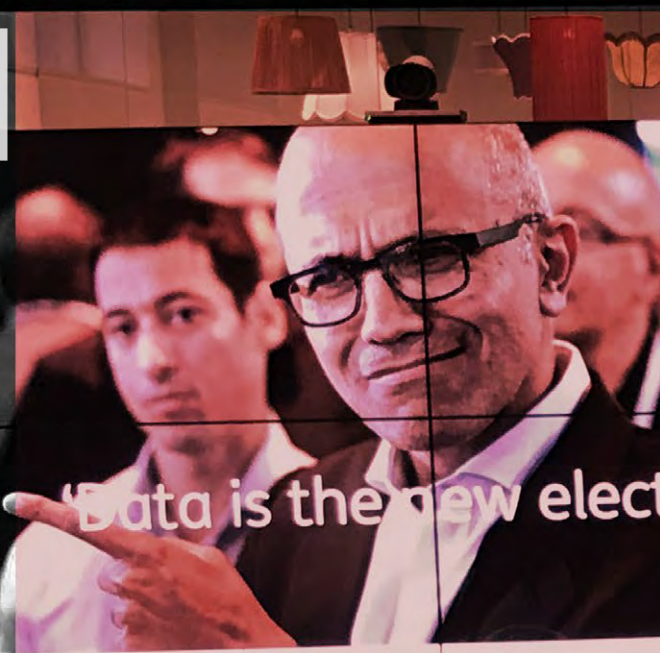
Internal analysis

Traditions...

Traditionally, ING would be called a bank, taking care of monetary requirements for retail and wholesale banking services. However, following ING's 2015's Think Forward strategy, this vision is expanded by one of the strategic priorities to *"increase the pace of innovation to serve changing customer needs"* (ING, 2016a). To better understand ING's context, I deep-dive into ING's current and future business with innovation.

2.1. ING - the agile bank

Being a large multinational bank in a competitive market means you have to stay on top of your game constantly. Innovation pops up anywhere, including new threats, but also opportunities. This paragraph explains the story of ING in the most recent years and how innovation plays a role in this.

It is the year 1991, ING merged into existence originating from NMB Postbank group and Nationale Nederlanden. This resulted in the Internationale Nederlanden Groep, in short ING (ING, 2017c). Building from its roots going back to 1845, the ING we know now is active in over 40 countries worldwide, with their headquarters situated in Amsterdam.

ING's focus is on clear and easy banking, providing an as seamless as possible experience to their customers throughout all of their channels (ING, 2017c).

In the previous ten years, since the 2008 financial crisis, ING faced several major challenges. Since, ING reduced their employees to less than half and in 2009 they merged with the Postbank (Yue & van Halderen, 2013). Both having large implications on ING's way of banking and business development.

For retail- and wholesale banking, ING is market leader in the Benelux. Globally employing more than 54.000 people (ING, 2016a). One of the pillars of their Think Forward strategy is customer centricity supports the drive to maintain this position. Their mission is to: "*Empower people to stay a step ahead in life and business*". This ambition seems successful from Net Promoter Scores (NPS), placing ING on first place in seven of their thirteen retail banking countries (ING, 2016a).

Faced by an increased pace of innovation this Think Forward strategy came with a shift of their way of working. Launching on the 15th of June 2015, ING started working agile. This meant no more traditional marketing or IT departments, but project-based teams including tribes, squads and chapter leads (ING België, 2017). The transition proved successful and is gaining traction throughout the world at ING domestic banks.

	Horizon 1 **Improve the Core**	Horizon 2 **Extend the Core**	Horizon 3 **New to the World**
Customer Segment	Existing	New and existing	New
Business Model	Existing	New (potential) and existing	New
Product / Service	Improvements to existing ING products or services	Extension of existing business	New to the world

Fig. 3 - The innovation fund focusses on horizon 2 and 3 initiatives

2.1.1 Innovation at ING

Squads and tribes constantly develop new value propositions for ING's products. Being a large organization, leads to ideas emerging from various places. The Chief Innovation Office (CInO) is appointed to structure the focus on disruptive innovation.

CInO ensures the vision of innovation, consisting of all staff and people driving innovation at ICEC, ING's Customer Experience Center. This way innovation is seperated from regular business, reducing chances of encountering bureaucratic barriers which may slow down development (Kuratko, Montagno & Hornsby, 1990).

Within CInO, internal start-ups, called initiatives, develop new to the world solutions to disrupt ING's business. These teams consist

of four members: an initiative-, customer-, experiment and technology lead (ING, 2016c). Each delivering unique knowledge to create these disruptive solutions.

To join CInO, initiatives must meet several criteria of disruptive innovation based on McKinsey's three horizon model (2009). To be marked disruptive (horizon 3, Fig. 3), initiatives need to approach new customer segments and business models through a new to the world product/service (ING, 2017b). By meeting these criteria, initiatives are eligible to enter the PACE accelerator.

The PACE accelerator is a corporate accelerator track ensuring solution development speed and providing resources to new internal start-ups (Yerkes, 2016). Many accelerator programs embrace a certain innovation methodology to ensure development speed. ING uses PACE to guide exploration of potential areas to delivering a solution within several months.
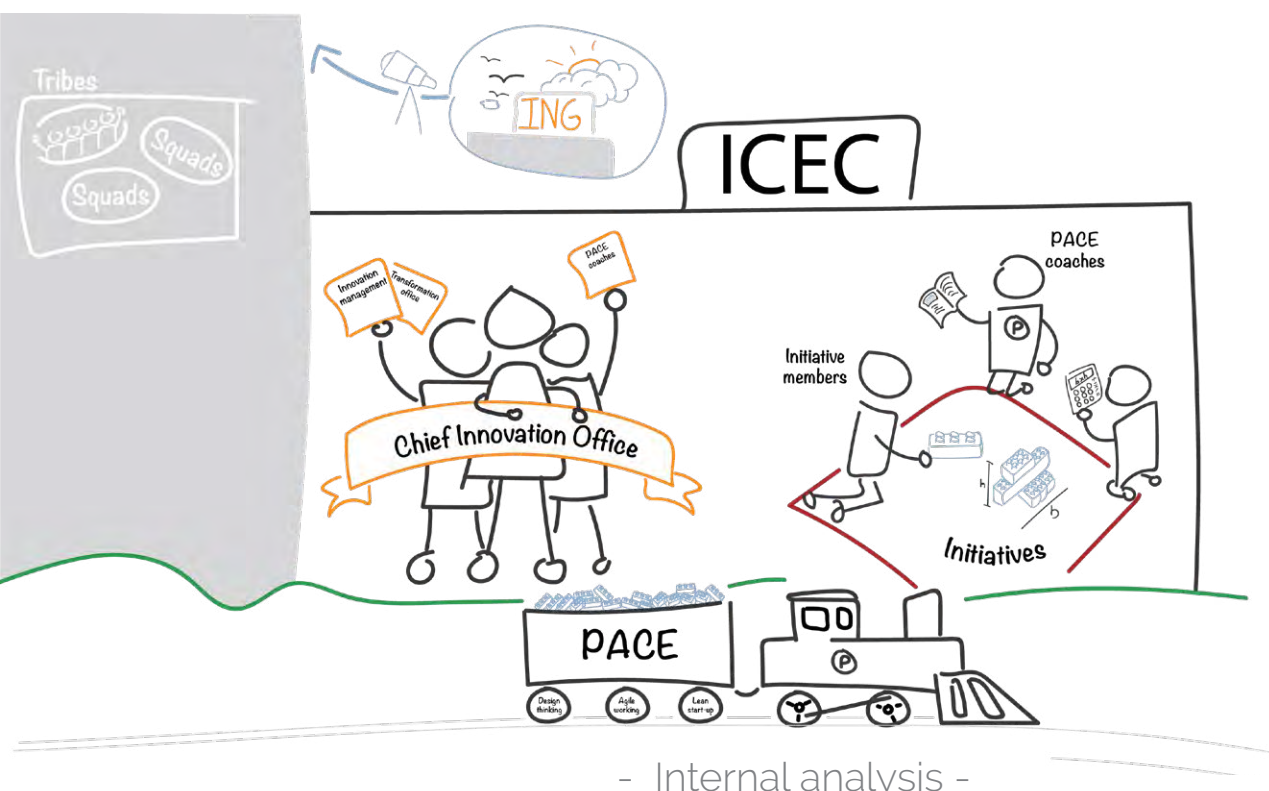
Fig. 4 - Position of ICEC within ING

Fig. 5 - Four sources of innovation fill the innovation funnel
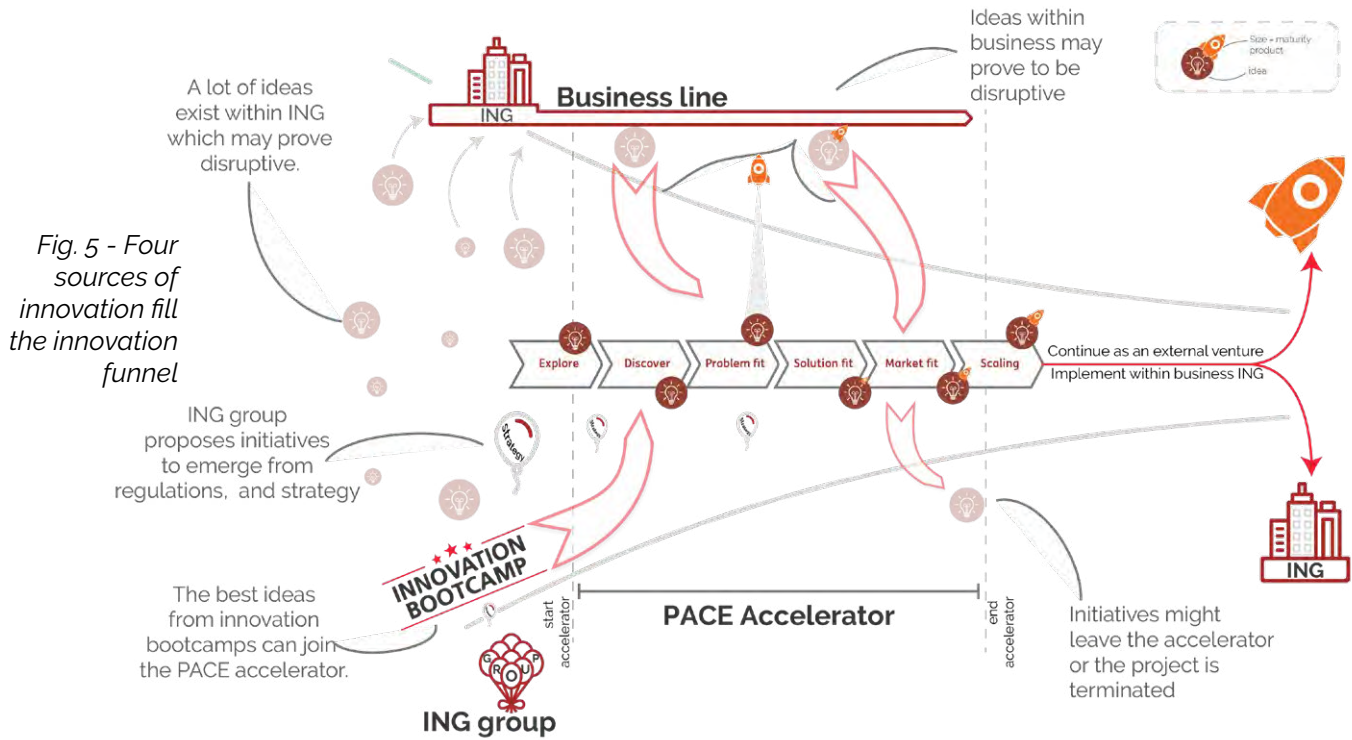
2.1.2　The innovation funnel

An innovation funnel is a way of visualising current initiatives and how these progress towards scaling their solution (Institute for Manufacturing, 2017). Fig. 5 represents ING's funnel. The amount of ideas is large in the beginning and as the solutions develop, only a few solutions make it to launch as a venture or to be embedded within business. The time set to go from start to finish differs per accelerator, some take ten weeks, others take eight months. At ING the goal is to take eighteen weeks going from defining a problem with users to developing a Minimum Viable Product (MVP). Regularly between 25 and 30 initiatives are within the CInO funnel and PACE accelerator simultaneously.

2.1.3　The people of CInO

Within CInO there are five teams responsible for its innovative efforts: the transformation office, ICEC, Innovation Management, FinTech and ING Ventures. This thesis focusses on the first three.

PACE coaches are part of the transformation office and are responsible for PACE coaching and -development. They ensure initiatives follow the structured approach to innovation by appointing PACE coaches to teams and facilitating trainings. ICEC are all initiatives developing disruptive solutions within the accelerator. They focus on developing actual products and business propositions. Lastly, Innovation Management guards the vision and budgeting of CInO, Taking care of the Innovation Fund and -council through stage-gates. At these meetings, decisions are made to continue, adjust or terminate initiatives.

The role of PACE coaches
As aforementioned, PACE coaches feed the innovation tools and methodology to initiatives during the development process. The coach chooses what type of tools and workshops are used for solution development. PACE coaches are experienced innovation coaches. They have experience running or managing innovation projects and know the innovation tools of methods like design thinking, lean or agile scrum. Their goal is to transform as many teams as possible to maximise learnings from PACE (P04) and transform intrapreneurs to make themselves obsolete, enabling autonomous innovation.

2.2. The accelerator track

Accelerator tracks provide all resources a start-up needs to develop their solution. These resources include amongst others office space, start-up coaches, seed capital, networking opportunities and often end with a demo day (Cohen, 2013). Except for the finale demo days, initiatives within the PACE accelerator receive similar resources. Many accelerators use a structured approach to drive high-speed innovation in an effective way.

2.2.1   Accelerated innovation methods

To accelerate corporate innovation, three approaches dominate the landscape: design-thinking, the lean start-up approach and agile scrum. Design thinking offers a user-centred approach to innovation, gaining insights from customer research while employing diverging and converging iterations. The lean start-up approach focusses on fast build, measure & learn cycles, with a strong focus on quick experimentation to validate with users through Minimum Viable Products (MVP). Finally, agile scrum is defined as "t*he engine that brings speed to the process*" (ING, 2017e). By setting up scrum boards, alignment between initiative members is improved and it keeps teams focussed towards the next development while maintaining speed. These three approaches combine into the innovation method of ING, PACE (ING, 2016b, see fig 5).

Fig. 6 - The way PACE combines agile scrum, lean start-up and design thinking (ING, 2016b)

PACE combines **Design Thinking**, **Lean Startup** & **Agile Scrum** into *a single process*.
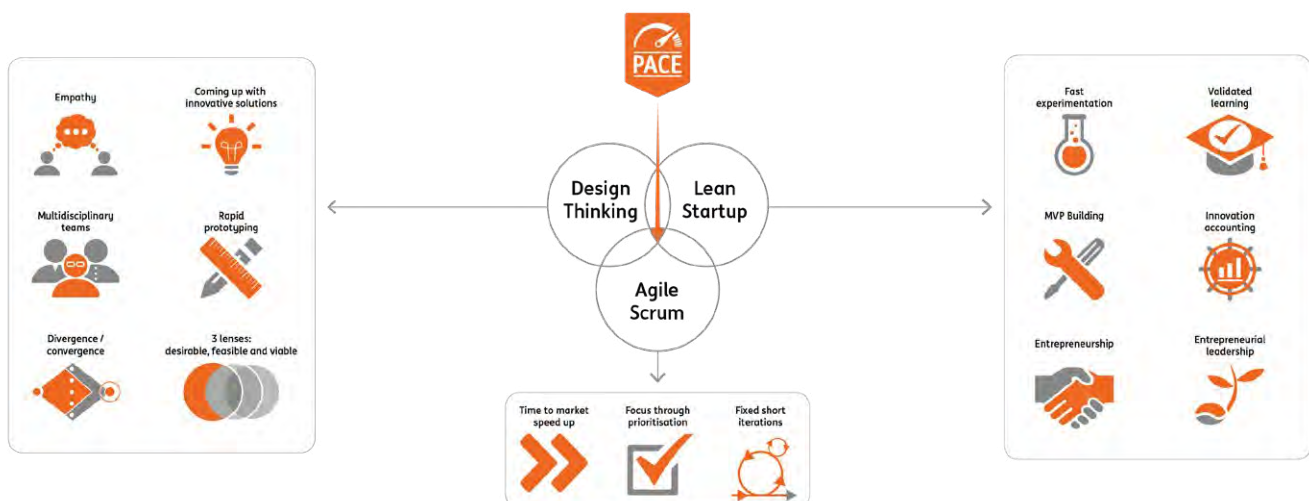
2.2.2 Start innovating through PACE

Initiatives tasked to develop disruptive solutions are not left completely in the dark. A key characteristic of accelerators is intense mentorship. Innovation coaches support teams to innovate and develop their solution. In many occasisons, learning how to innovate starts by going through books and articles explaining how innovation theory works.

New initiatives within the PACE accelerator receive a PACE playbook, Accelerator playbook, Innovation Fund guide and a Discover playbook. These present at least four guides suming up to 110 pages, providing an elaborate description of PACE. Based on the need of teams, other guides can be added, like the Explore guide[1] (22 pages) for team from the Explore track. The guides describe in total 54 unique innovation tools used for workshops and solution development.
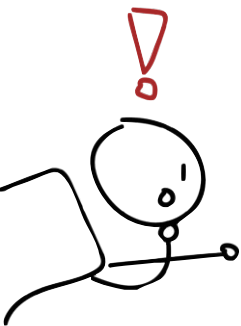
[1] *Some reader's comfort. When referring to PACE phase, look at the capital letter. The difference is "PACE" and "pace" or "Explore" and "explore".*

2.2.3 The mission of PACE

The mission of PACE is to "*Transform the way we develop new products and services to make sure we bring only relevant solutions to the market fast.*". To transform, means not only changing the process of innovation, but also achieve a transformation of the people applying PACE. A key performance indicator (KPI) for PACE coaches for instance is the impact they have on the way ING employees work.

Another characteristic of this mission is to "*develop solutions to the market fast*". Deadlines are strict, and stage-gates are subsequent to each other in very short time spans. This defines the challenge for an initiative as well to hesitate as little as possible and keep developing solutions, going forward at all cost.

2.2.4 5 PACE phases

A common method to manage progress of innovation is through stage-gates. Stage-gates are defined at the beginning of a development process and define the goal initiatives should meet in order to progress (Cooper, 1990). As initiatives develop through stage-gates, solution development continues, resulting in more dedication of resources for further
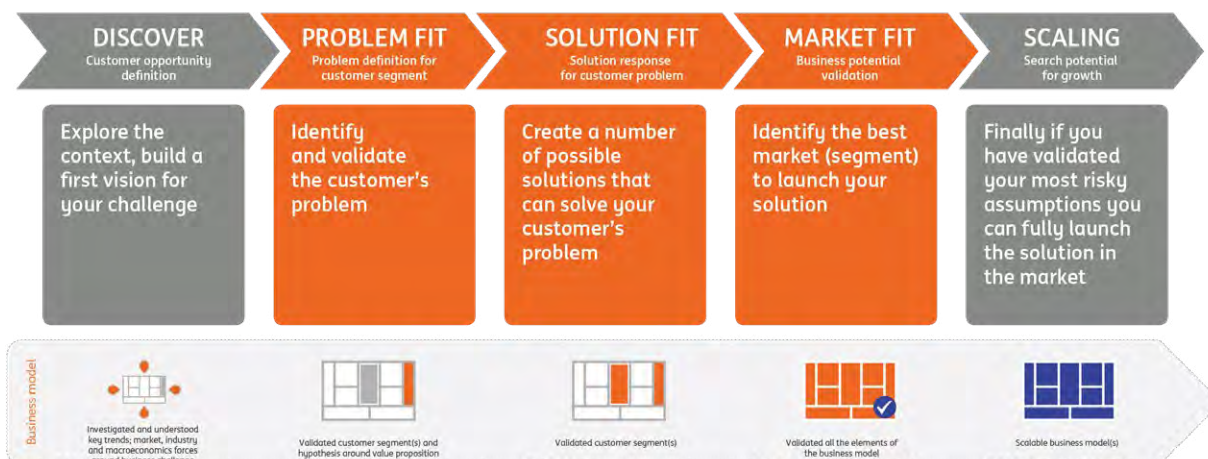
Fig. 7 - The five PACE accelerator phases (ING, 2016b)

development. Stage-gates within the PACE accelerator are defined at every transition of PACE phases or at intermediate steps based on solution development to request additional resources.

How PACE is applied, depends on the phase an initiative is in. As seen in the innovation funnel (Fig. 5), PACE guides development of an idea up until scaling the solution. PACE's five phases are Discover, Problem fit, Solution fit, Market fit and Scaling[1]. These phases revolve around validation of an increasing amount of information within Osterwalder & Pigneur's business model canvas (2013) (See Fig. 7).

"*The PACE accelerator is a program designed to accelerate innovation projects*" (ING, 2016c). This paragraph further explains the five PACE phases To explain how prioritieis of initiatives shift.

Discover (±4 weeks)
An initiative starts in Discover, having set the initial challenge of gaining an understanding of their context. The exit criterion of Discover is to find the riskiest hypotheses to be tested in the subsequent phase, setting the challenge for the first steps of development. These hypotheses include a value- growth- and technology hypothesis respectively for the areas of customer, business and technology.

To gather data intrapreneurs conduct customer interviews and brainstorm sessions. This provides the initiatives with a more elaborate understanding and a shared vision of the context. Discover is the most elaborately described PACE phase, containing multiple

suggested innovation tools and guides to understand an initiative's place within the accelerator program.

Problem fit (±6 weeks)
Following the Discover phase, Problem fit starts, with the focus on exploring and validating the customer's problem. Through prototypes testing functions of the solution, hypotheses are validated. At the end of Problem fit the initiative knows the problem they intend to solve is real and that customers would be willing to pay for it.

Solution fit (±8 weeks)
After ten weeks, an initiative should be in Solution fit. Since the problem is validated, actual solution development is the main goal of this phase. Stepping away from the prototypes to test only small elements, they create a first Minimum Viable Product (MVP 0.1). This MVP is used to assess the value the solution delivers through user-tests. Exiting Solution fit, both the customer segment and the value proposition are validated.

Market fit
Market fit is all about getting to know the feasibility of building a scalable solution within the proposed market. Integrating all insights from previous PACE phases into one live solution. As the PACE playbook refers to Market fit: "T*his is typically the most difficult and uncertain of the PACE phases*" (ING, 2016b). Referring to the continuous development of a solution while validating the complete business model canvas.

During Market fit many teams increase in size, requiring more developers and testers to build

the MVP 1.0. Exiting Market fit means the initiative found something valuable with large potential to be implemented within ING's business or start as a new venture.

Scaling

In Scaling, the initiative finds a scalable business model in order to deliver a functioning and marketable product through business building and growth hacking. By choosing to integrate the solution within ING's systems a close collaboration with the relevant business units or tribes is established. Creating a seamless integration of all back-end protocols and systems to launch the product as a new function of the current business.

As an external venture, the initiative builds the company outside of ING, ING being the main stakeholder. By choosing this option, a stand-alone product is developed. As an external venture, the start-up is able to sell to a broader range of customers without being limited to ING's existing customer base.
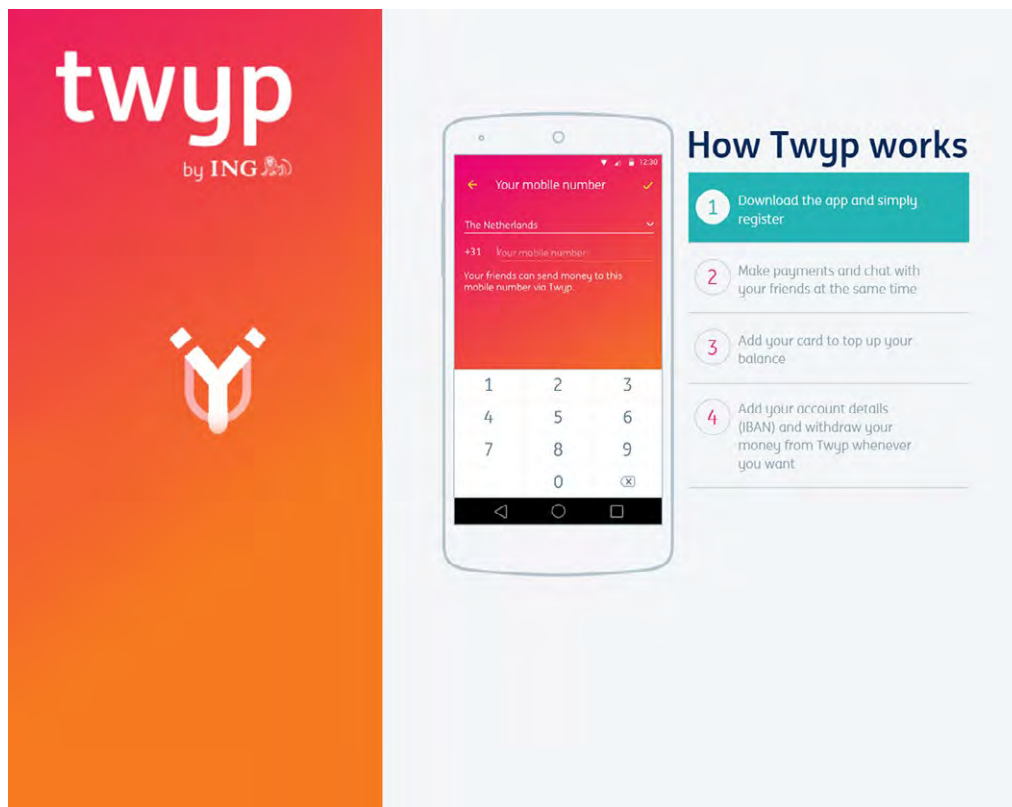
Fig. 8 - Twyp is an instant messaging payment request application, currently exploring the Spanish market after exiting Scaling (Twyp, 2017)

2.3.Concluding internal analysis

This internal analysis provides an insight into ING's way of innovating and the role the PACE accelerator plays. It sketches the context for developing solutions and the topics to be investigated in the data analysis and literature study.

Assignment definition: Improving the effectiveness of innovation

The initial assignment of this thesis is to "*improve the effectiveness of initiatives at ING*". To achieve this, I focus on PACE.

Based on PACE documentation, initiatives receive eighteen weeks to go from Discover to Solution fit. Reality shows however that initiatives often require more time. Several examples show initiatives needing up to six months instead of the theoretical six weeks for Solution fit. With four full-time team members, this leads to a large gap between projected budget and the actual budget required.

PACE's ever-increasing documents

One cause of this gap is the elaborate PACE description. Starting PACE, initiatives receive 110-154 pages of innovation methodology documentation, presenting 54 unique tools for innovation. The transformation office focusses on continuous development and building of PACE. Currently, there is no way to cope with the increasing abundance of PACE documentation. This affects solution development due to the focus intrapreneurs have on understanding the documentation, rather than understanding product development.

The mindset gap

There is a gap between PACE's mission of becoming a mindset and the current accelerator practice. PACE coaches coach teams for them to become better at self-directed innovation. To achieve this, intrapreneurs should focus on developing intrapreneurial skills. However, the time it takes to run the project takes away the possibility to do so. This thesis further investigates how these intrapreneurial learnings can be increased without compromising project development.

3

Analysis

Design

Project specific knowledge

Toolkyres used for development

Data analysis

A total of 24 interviews[2] were held with PACE coaches, innovation experts and initiative leads. First to explore the innovation context and how ING compares to other practices. Second to deep-dive into reasons for PACE's elaborateness and the effects it has on innovative practice.

This chapter expatiates on the insights and design implications found. For a full description of the insights per participant and the data, appendix E offers a table enumerating this.

[2]*All participants are recognized by the statement "Px". This means "P1" stands for participant 1*
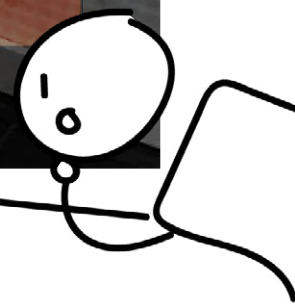
3.1. Experiences with PACE

A key factor of design is user-centricity, understanding a user's needs and desires. I mainly focus on the elaborateness of PACE and where this problem comes most apparent. This paragraph presents experiences with PACE and describes the context of the PACE accelerator.[3]

Presenting PACE to intrapreneurs

To start within the PACE accelerator, intrapreneurs receives several guides and a training to understand its basic construct. These basics include tools and canvasses, trying to transfer the mindset PACE strives to achieve. A mindset of true innovators, being able to recognise customer data and adjust their innovative development to it.

This way of PACE onboarding is not experienced by all participants in the same way. Refering to this, P15 said: "*(PACE is used as) a shit storm of books all dropped on one big pile*". The sentiment of the education of PACE revolving around guides instead of the mindset is felt by several participants. Per guide 20- to 40-pages present the information new initiatives need to start their PACE journey. The topics range from an explanation of what PACE is (44 pages) or how the accelerator works (37 pages) to what the innovation fund encompasses (29 pages).

As P14 describes his concern: "*It (PACE) should not become a dogma*", the opposite is achieved. By describing all bits and pieces, many intrapreneurs consider the documentation as an absolute truth, especially in their first PACE steps of development (P01, P02, P12, P13).

P02 for instance thought that by checking the boxes of the Discover stage and filling in a business model canvas all the requirements to pass to the next stage were met. These insights seemingly indicate the intrapreneurs experienced tunnel vision due to documentation's descriptions, making him less capable of assessing the true value of his work. With some bitterness, P02 found out management did not consider the requirements to be met sufficiently and repair work was required before progressing. The intrapreneur indicated to be less motivated to continue working and start to integrate all the suggestions.

PACE as a mindset

To achieve its mission of transforming ING's product development, PACE coaches agree the mindset is most important for intrapreneurs and PACE coaches alike (P04, P14, P15, P16). P15 stated: "*PACE should be a mindset. If it is a mindset, the whole booklet is not relevant anymore. Then everybody starts with the notion of us working on an experiment base.*".

By educating this way of working, intrapreneurs become better at "*discussing what is useful when and why*" (P16). In turn this rejects the possibility of PACE becoming a dogma (P14), being no more than a couple of guides and bundled tools, opening the

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[3]*Appendix E presents all participant statements, summarized per hypothesis or topic*

possibility of PACE to achieve becoming a mindset.

To avert PACE from this dogma, PACE coaches encourage intrapreneurs to start building and testing recklessly. The intrapreneurs should read less and do more (P14, P15), which confuses intrapreneurs due to mixed signals.

The benefit of the guide
"*For a PACE coach it is a piece of cake, a lead does not know what is happening*" (P11). This quote is a great example of the double-edged blade of PACE documentation. For intrapreneurs, reading all the documentation and trying to grasp the complexity of PACE is hard. Their lack of innovative knowledge makes it hard to assess the requirements and implications on their initiative to apply PACE. For a PACE coach, it is great there are so many guides. With their current knowledge of innovation methodology, they increase understanding how PACE compares to other innovation methods they encountered previously. This kickstarts their PACE coaching.

The elaborate descriptions also support management alignment. "*It (questions from management) is all very PACE aligned.*" (P08). When assessing the progress of initiatives, the assessors are provided with a rubric specific for the initiative's PACE phase. By doing so, PACE's goal of a data-driven innovation methodology is pursued and management structures their questions based on an initiative's current deliverables.

Improving and building on PACE
Due to the innovative mindset propagated by PACE, the desire for making improvements emerges. New tools are constantly developed within the global spectrum of innovation, which can clash with PACE. P16 refers to the introduction of a new platform canvas as follows: "*You are noticing that PACE is not ideal for the development of a platform, I am wondering whether that is taken into account sufficiently.*". The PACE coach struggles to coach an initiative, combining new tools with the PACE methodology.

The storage of PACE documentation and additions of new tools is not structured in one centralised place. P16: "*You've got the innovation station, the shared drive, the playbooks are renewed once every while, [person] showed me another toolkit I never used.*". Adding to this, most PACE communication is spread through e-mail threads from person to person, making it hard to track the latest version is of a certain toolkit or guide and the intended way of using it.

"They told me my business model was vague... this was one of the deliverables"
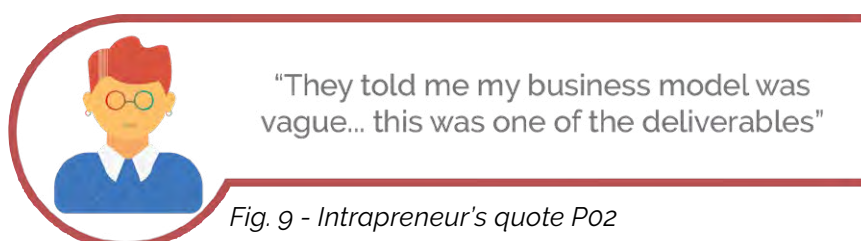
Fig. 9 - Intrapreneur's quote P02

3.2.Segmenting initiatives at ING

Case-study research provides an elaborate understanding of ING's innovation context. This segments the types of intrapreneurs and innovation sources present within the PACE accelerator. This generalisation forms the basic construct of one solution direction to increase understanding of initiatives for PACE coaches (chapter 6.3).

3.2.1   Three (and a half) intrapreneurial profiles

Intrapreneurs entering the accelerator come from different places and bring different skills. The majority of the intrapreneurs are recruited from within ING ($\pm 70\%$). Every type of profile makes for a different type of coaching as P04 states: "*A lot of other people joined with little PACE background, this resulted in me losing more PACE background time compared to this team (business team).*". This variation of backgrounds affects the learnings intrapreneurs gain from applying PACE and the extent they are able to grasp its complexity.

Every profile describes three variables:
► Knowledge of ING's internal politics (Orange)
To what extent they are able to leverage their position within the organisation and unravel what internal stakeholders desire.
► Knowledge of innovation methodology, (Blue)
To what extent they know innovation methods, projecting this knowledge to the current PACE journey.
► Experience creating an actual product. (Green)
To what extent they have developed a product previously, know what it takes to understand a user and the implications this offers for solution development.

Knowledge of ING internal politics
Knowledge of innovation methodology
Experience creating an actual product

Experienced ING innovator

Novice ING innovator

Entrepreneurial creator

Methodology champion

Fig. 10 - Three types of intrapreneurial initiative members describe the PACE accelerator's intrapreneurs

Skills
Knowledge of ING
Knowledge of innovation
Creating an actual product

Skills
Knowledge of ING
Knowledge of innovation
Creating an actual product
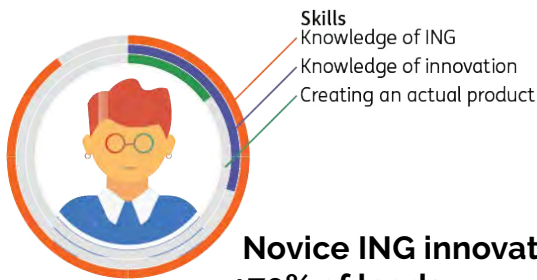
Novice ING innovator
- ±70% of leads

Entrepreneurial creator
- ±20% of leads

- *Knowledge of ING's internal politics:*
Having worked at ING for several years, the ING innovators gained a lot of ING specific knowledge. They are well aware of the challenges ING faced in their journey towards embracing the agile way of working.

- *Knowledge of innovation methodology:*
The knowledge of methodologies is mediocre. Some have heard of PACE and the promise it may bring, but no ambassadors of PACE are to be expected.

- *Experience creating an actual product:*
The ING innovator became a part of the initiative due to the knowledge they hold of the subject or their drive towards new experiences. They have little to no experience of employing a design-driven way of product development.

- *Quotes:*
P04: "*An internal brings information from earlier initiatives or knowledge internally*"
P04 v2: "*I think they (intrapreneurs) are very good at product development, but they validate too little whether the characteristics meets the needs of the actual clients.*"

- *Knowledge of ING's internal politics:*
The entrepreneurial creator is hired as an external professional. They are little aware of the internal politics or how to approach key stakeholders within the organisation.

- *Knowledge of innovation methodology:*
They created a venture previously, where they were challenged to apply innovation methodology. They bring decent knowledge of innovation methodologies, but they are no ambassador of the nifty details.

- *Experience creating an actual product:*
Their previous venture they created a product and tried to bring this to the client. They know how to conduct user-centric research and how to derive design implications from customer insights.

- *Quotes:*
P14: "*What I would do maybe, is build a little ING context... like laws and regulation.*"
P15: "*An entrepreneur looks at the opportunity, he does not care what the stakeholders wants. It matters that it works as long as we all take the same direction.*"

Ski ls
Knowledge of rchre
Knowledge of innovation
Creating an ac tua

- *Variation: experienced ING innovator*
The experienced ING innovator is a less-common profile, but increase in numbers as more employees get familiar with PACE. They know how PACE works from previous projects and are much better than novice intrapreneurs at knowing what it takes to create an actual product.

Skills
Knowledge of ING
Knowledge of innovation
Creating an actual product

Methodology champions
- ±10% of leads

- *Knowledge of ING's internal politics:*

The methodology champion is hired as an external professional. They are little aware of the internal politics or how to approach key stakeholders within the organisation, which is similar to entrepreneurs.

- *Knowledge of innovation methodology:*

The methodology champion knows how to explain innovation due to a background of innovative practice, often as a consultant. They have worked with companies to implement innovative ways of working or previously guided start-ups. They are great at explaining certain elements of innovation, depending on their expertise.

- *Experience creating an actual product:*

The methodology champions have average knowledge of solution creation. Since they mostly advised on innovation, they have less experience building a design from scratch themselves. They leverage their theoretical knowledge of innovation to cope with this gap, to assess research data for design implications.

- *Quotes:*

P01 v2: "*I understand that pressure. I have worked long enough in a corporate to understand how that works.*"

P15: "*A consultant looks at the form, the message and only then looks at how they will sell it.*"

Fig. 11 - Four different innovation sources fill ING's innovation funnel

Innovation bootcamp

Development has been conducted in the bootcamp, resulting in a solution direction. This direction should still be pivotable.

Explore track

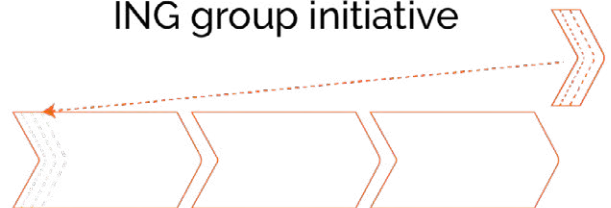*Research by the explore team is transferred to a new lead. The team needs to create an understanding of the challenge.*

Business line initiative

The initiative was developed within business and proved to be disruptive. The challenge is to sustain this disruptive focus.

ING group initiative

Starting with a strategic priority, the dot on the horizon has been set. Going from abiguity to concrete steps for development.

3.2.2   Four innovation sources

As seen in Fig. 11 four innovation sources fill the funnel of ING. This paragraph describes the four innovation sources and combines them into experiences of intrapreneurs and PACE coaches. Initiatives enter from the business line, ING group, the Explore track and Innovation Bootcamps (see Fig. 5 on page 12). For a more elaborate description of all sources, see appendix B.

Business line

Ideas emerge from within ING's business. Employees think of ideas to improve INGs business, or consider emerging areas in which ING should venture.

Within ING's business an idea is crafted to improve the way of working by an employee or sponsor.

The solution development within business proves promising to disrupt ING's way of banking.

The employee takes the idea further and enters within the accelerator to develop it further.

Experiences:

Since employees from within the business carry the initiative, involvement of business stakeholders is key for development and implementation. P08 stated: "*Both the business sponsor, direct manager and the innovation board for that matter were very supportive.*". "*Business line initiatives can have very clear touchpoints and opportunities for the business line*". Since the initiative started close to business, keeping a disruptive focus can be challenging as it may lean towards meeting the needs of business stakeholders.

ING group

Based on strategic priorities set by ING group, initiatives start. These priorities result in initiatives focussing on for instance banking regulations like PSD2.
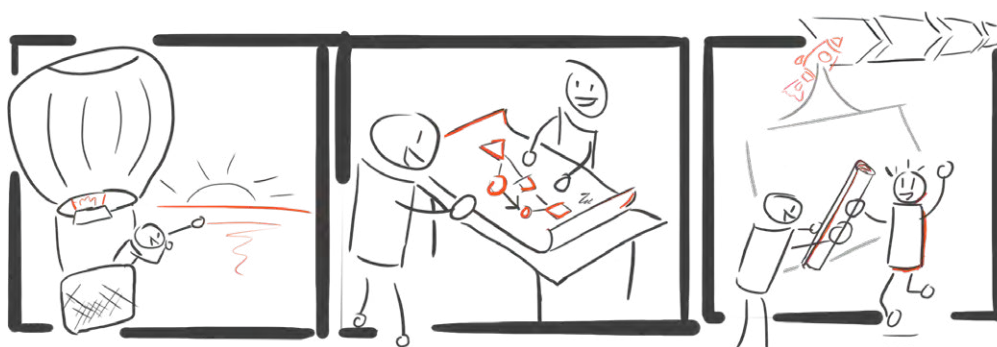
The ING group strategy team places a dot on the horizon. Choosing priorities or regulations ING should venture in.

The trend, priority or regulations are mapped and the role ING could play is defined.

A lead is chosen to champion the initiative. Going towards an embodiment of the vision

Experiences:

The group initiatives start with a dot on the horizon, as P16 told: "*The PSD2 board had given an assignment that they wanted to see x amount of initiatives relating to PSD2*". Thus, employees are encouraged to explore valuable business cases based on this priority and start by gaining an understanding of its context.

Explore track

Based on an analysis of emerging business opportunities, the Exploration team proposes solution areas ING should play a part in.

Experiences:

Ideas for the initiative are

A new technology or trend emerges seemingly promising for ING to venture in.

It is considered an Emerging Business Opportunity (EBO) and they set out to explore it further.

A team is delegated to take the idea to the next level. They start their journey with documentation explaining the EBO.

transferred from the explore team to the eventual initiative members, resulting in repair work to be conducted. As P04 demonstrates: "*I think you do many things in Explore that need to be repeated in discover*". Many Explore initiatives maintain the disruptive focus, but often do pivot from the initial initiative proposal (P01, P02).

Innovation Bootcamp

As a fast-track for innovation, intrapreneurs champion an idea in Innovation Bootcamps. After pitching the idea, a prototype is built is a manner of days to explore the potential of the solution.
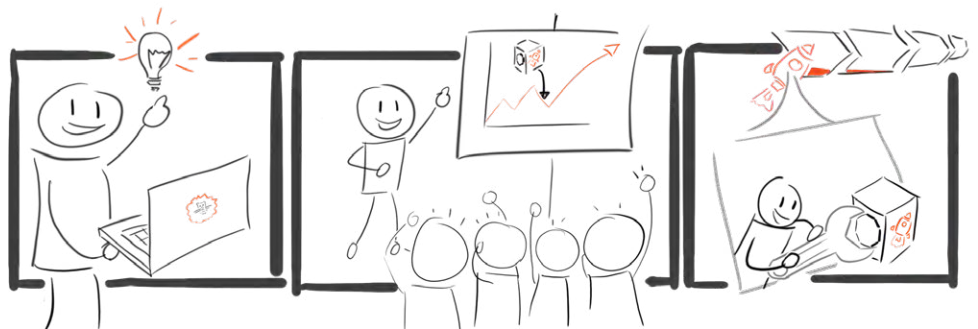
An employee or external has an innovative product idea.

By pitching the idea, it is considered disruptive, receiving sponsorship to prototype the solution.

The prototype and the team prove promising, nominating them to enter the accelerator.

Experiences:

Since initiatives having a working prototype already, they want to continue development where they left the Bootcamp. However, as P15 stated: "*(the initiative) thought they were in Market fit coming from the Bootcamp… In the detailed process of PACE they started in Problem fit however*". Initial assumptions in the Bootcamp require too little validation, which is great for development speed, but not preferred for venture creation. Met with some resistance the initiatives have to go "*back to the drawing board*" (P04) when entering the accelerator.

3.3. Concluding data analysis

To enable successful intrapreneurial innovation there are three vital factors: intrapreneurial skills, user centricity and the design process (Griffin, Price, Maloney, Vojak & Sim, 2009).

Within PACE documentation the design process and user-centricity is deeply embedded. However, these two factors do not always describe the mindset intrapreneurs hold. In order to develop this, closer integration of user-centricity, the design process and intrapreneurial skills is required.

To develop these skills, the data shows not all intrapreneurs have the same expectations and skills when applying PACE. Using their gut feeling, PACE coaches seemingly adjust their coaching based on an initiative's source and on intrapreneurial profiles. In order to understand how skill transformation is realised, I investigate the development of intrapreneurial skills and what it takes to foster them in chapter 4.

Based on the intrapreneurial profiles and innovation sources, I will explore implications of profiling intrapreneurs. The goal is to find better ways of describing initiatives to support PACE coaches.
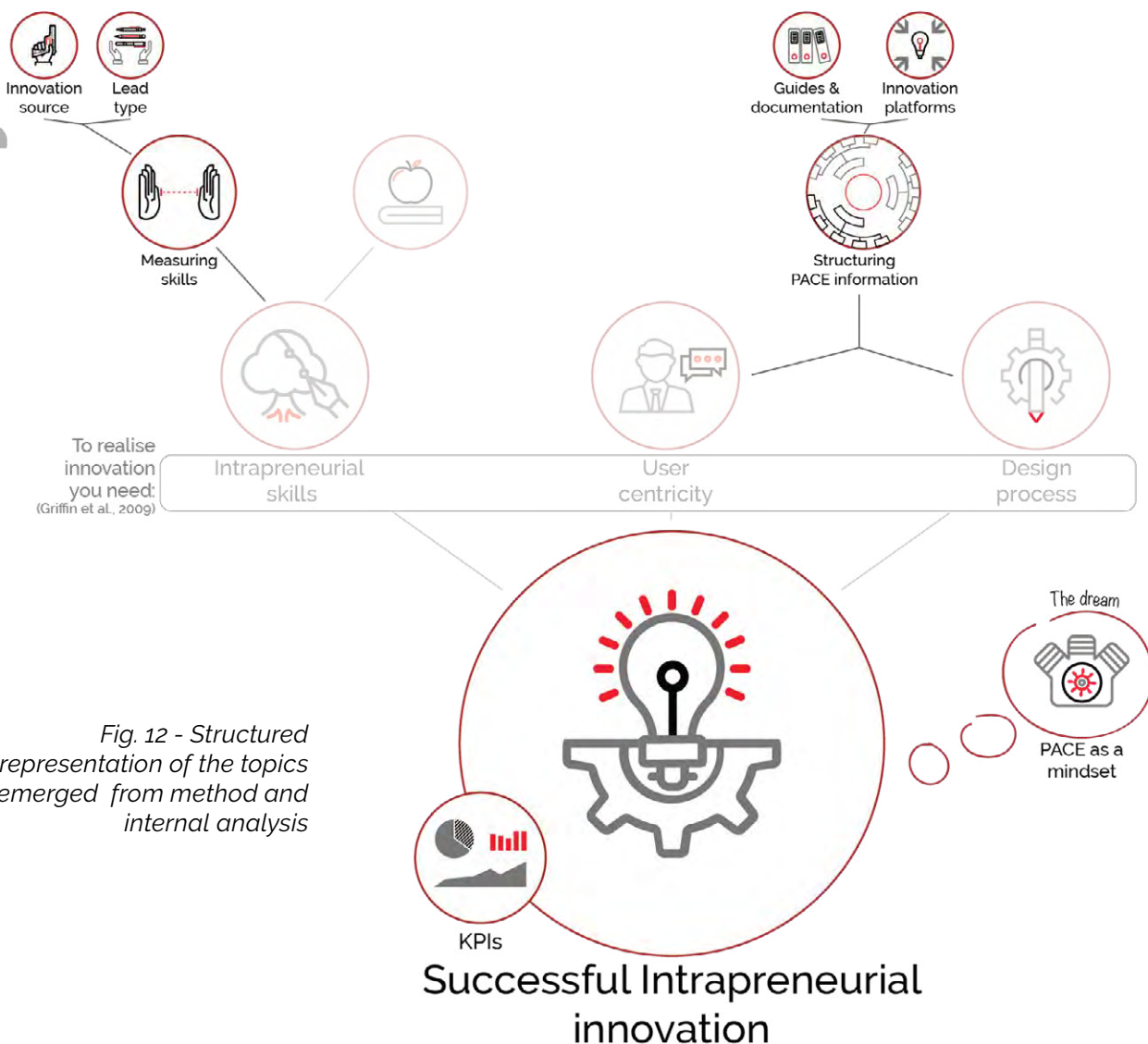
Fig. 12 - Structured representation of the topics emerged from method and internal analysis

4

Discover

Analysis

Define

Develop

Design

Ch4 - innovatieframework
Google ventures werd gelinkt met projecten die zij moonshots noemden. Dit betrof investeringen waravan ze niet per se het einddoel voor ogen hadden, maar wel het nastreven van baanbrekende projecten.

Het framework voor de corporate startup.
Ideeën vormen:
om tot fantastische ideeën te komen moeten organisaties de zuilen van specialistische afdelingen afbreken en multidisciplinaire teams oprichten.
Ideeen komen overal vandaan, bedrijven kunnen sessies hiervoor organiseren. wedstrijden kunnen worden uitgeschreven. onderzoekslaboratoria behoren ook tot de opties. alle ideeen moeten samengebracht worden in een open platform, zelfs die die het niet midden in de markt (ING dashboard innovation funnel.

Het testen van ideeën:
het moet geteste worden of het levensvatbaar is in de markt. Hierbij test je of de klantenbehoeften of problemen ervaren worden die de aangenomen behoefte? Hier kunnen welke taken ervaren ze, wat bied onze oplossing aan deze klantenbehoefte?
MVPs gemaakt worden.

Ideeën schalen:
Er zijn verschillende groeimotoren te definiëren door eric ries:

1. Retentie groeimoter (sticky): Richt zich op vasthouden aan klanten. Snelheid waarmee nieuwe klanten worden aangetrokken moet groter zijn dan de snelheid van het verliezen van klanten.
2. Virale groeimoter (viral): grotendeels van marketing afhankelijk via mond-tot-mond of netwerk marketing

Hiervoor heb je rep

Ch6 - ideen v
Je moet faciliteren doen

• brainstor
• Ideen b

Als je ideeen model.

Ch7 - ide
Er zijn versch

• Bure
• Kla
• Kla
• La
• P

Literature Review

This literature review discusses three topics:
- ▶ Understanding what intrapreneurship is
- ▶ Assessment of intrapreneurial profiles and their design skills
- ▶ Educating design skills in order to achieve intrapreneurial transformation

Each topic results in design implications for concept design.

4.1. The successful intrapreneur

Intrapreneurship is the practice of being an entrepreneur within a company's boundaries. A successful intrapreneur builds their internal start-up from scratch and finds a great place for it to land. They shape the landscape of successful corporate innovation. This paragraph reviews what it takes to make intrapreneurship possible and the implications that come with this desire.

What is intrapreneurship?

Intrapreneurship is defined as simple as entrepreneurship inside of a corporation (Kuratko et al., 1990), often described as a variation of entrepreneurship (Sayeed & Gazdar, 2003; Zhao, 2013).

By developing a solution, it brings benefits to both the intrapreneur as well as the corporate organisation. For a corporate it increases the chances of holding onto employees longer (Aaserud, 2017) and leverages the corporate's striking power (Bajwa, Wang, Duc & Ambrahamsson, 2016; Zhao, 2013; Mazzone, Okrent, Kennedy, Biekman, Merguei, 2016). Compared to those who lack this focus on intrapreneurial development, ING gains a more competitive position (Moriano, Molera, Topa & Mangin, 2014; Viki et al., 2017).

To become an intrapreneur requires a certain confidence towards risk-taking and a drive for innovative projects to become a reality (Moriano et al., 2014). Compared to entrepreneurs, the personal risks of venture creation are much smaller. The company is responsible for most financial risk to develop the solution, so the intrapreneur does not have to. For increased chances of successful venture creation, intrapreneurs hold an active mind towards gaining new skills and know how to manage the politics internally (Griffin, Price, Maloney, Vojak & Sim, 2009).

The corporate start-up

Although there are challenges facing the realisation of an intrapreneurial program, the benefits can be great. It requires clear guidelines to enable development, while keeping focus to shape the environment required to encourage this innovative behaviour (Kuratko et al., 1990). The next section discusses the elements required to create such corporate innovation.

Viki, Toma and Gons (2017) provide the definition of a corporate start-up as an established company that is successful in creating innovative ecosystems. Griffin et al. (2009) identified three vital elements for realising innovation as an intrapreneur to make this a reality: A design process, intrapreneurial skills and a user-centred approach. The design process supports the creation of the solution, the intrapreneur's skills leverage their political influence within the organisation and a user-centred approach has positive influence on their motivation to solve the problem of actual customers.

Problem solving intrapreneurs

Most intrapreneurs have little experience with the creation of actual innovative products. The initial challenge within the PACE accelerator is to solve a problem which is yet to be discovered and defined. This brings high levels of unpredictability making development challenging for inexperienced intrapreneurs (Digenti, n.d.).

New intrapreneurs are most used to solving well-structured problems (Cross, 2004), finding logical solutions to problems through deduction (Dorst, 2011). In innovation however, the problems faced are often considered ill-structured. They do not always have one right or wrong answer nor one approach suitable for all situations to solve the problem (Dorst, 2006). To find solutions to these problems, intrapreneurs need to find new ways of applying existing knowledge (Taylor & Greve, 2006).

For new venture creation, PACE supports the definition of the solution's context and to find solutions within this (Sarasvatyh, 2008). By applying PACE, not only a data-driven approach is propagated, it also paves a way for intrapreneurs to cope better with the uncertainty of solving ill-structured problems.

To an intrapreneur new to innovation, two ill-structured surface. First the challenge of defining the frame to develop a solution within, second is the design process to be used for development. ING creates multidisciplinary teams supported by a PACE coach, to cope with the uncertainty of the design process. These teams are most effective if the team supports each other to unravel the relationship between cause and effect through reflexive practice (Seidel & Fixson, 2013).

This collaboration offers an integration of knowledge frames (Dorst, 2011) allowing them to access knowledge in new ways (Taylor & Greve, 2006). Every team member brings their own expertise to add to the project's development. A coach playing a vital part by facilitating guidance for teams in order to integrate their methodology, maintain focus during brainstorms and enhance this reflexive practice (Seidel & Fixson, 2013). This underscores the key role a PACE coach plays in the effectiveness of initiatives during product development.

Design implications for intrapreneurs

1: Leverage collaborative design practice to solve ill-structured problems

PACE's role as a structured approach to innovation proves vital for solution development and it flourishes through collaborative design in multidisciplinary teams. In order to leverage an intrapreneur's expertise they should be encouraged to share and expand their frames of knowledge. A PACE coach's position to facilitate solution development is ideal to support these mutual frames by sharing individual considerations of cause and effect relations. The implication involves leveraging the position of a PACE coach and improve ways of applying their knowledge to facilitate effective innovation.

4.2. Design for understanding

By getting to know a team better, a PACE coach is able to personalise their coaching. Various psychologists propose tests to model how a person reacts or where they develop their ideas from. These provide insights into how a person develops their drives and personality. In this paragraph, I explicate various ways of profiling for innovation to increase understanding of intrapreneurs for an innovation coach or management.

Intrapreneurial traits
According to a study by Rauch & Frese (2007), traits associated with entrepreneurial behaviour are:
- ▶ Innovativeness,
- ▶ proactive personality,
- ▶ generalized self-efficacy,
- ▶ stress tolerance,
- ▶ need for autonomy
- ▶ degree of project involvement.

Mirroring this to intrapreneurial practice, involves intrapreneurs to radiate these traits. Although this creates a model of good intrapreneurship, it lacks an unambiguous way of measuring. What researchers do describe extensively is ways to measure the expertise a designer holds. This expertise is an important indicator for an intrapreneur's ill-structured problem-solving ability.

The promise of design expertise
Looking at the design expertise spectrum there are novice and experience designers, both employing different problem-solving techniques (Cross, 2004; Griffin et al., 2009; Ahmed et al., 2003; Ho, 2001; Lawson & Dorst, 2009).

An experienced intrapreneur knows how to enable the creation of new designs and is acknowledges the value of tools and methods for solution development (Cooper, Junginger & Lockwood, 2009). They approach problem in a holistic way rather than analytical (Albers et al., 2012) accumulating knowledge of similar problems and situations (Cross, 2004). In stead of thoroughly defining the problem, the experience intrapreneur rapidly shifts between design activities to test various assumptions.

The novice intrapreneur executes a trial-and-error way of iterating, trying to find solutions without a clearly defined goal in mind (Cross, 2004). In contrast to the novice intrapreneur, the experienced embraces a generative approach, starting development of early solutions from the beginning of a project. Comparing the cognitive ability of both, shows that the novice expresses a peak in the early project steps, declining gradually. The experienced shows rising cognitive ability, being up to three times higher during idea generation (Kavakli & Gero, 2002).

To measure design expertise, Albers et al. (2012) propose four questions to establish design expertise on a five-level scale.

▶ How design knowledge is disposed?
Whether they are able to apply their current knowledge in a new context
▶ Can the relevance for a specific design task be detected?
The exnt to which they refer to the present or use no frame of reference at all.
▶ How design problems are solved?
Designing in an analytical way, all elements one by one, or by designing holistically, integrating various possibilities simultaneously.
▶ How decisions are made, when designing?
Based on intuition, or by trying to create a rationale.

Personality testing

Personality tests offer an interpretation of someone's personality and can be used as a starting point for forming design teams (Dym, Agogino, Eris, Frey & Leifer, 2005). It provides PACE coaches with a better understanding of the one they are coaching and how they adjust their coaching to the specific situation.

Based on an extensive review of personality tests (see appendix D), two axes are chosen to identify a personality test suitable for

intrapreneurial profiling. The test should focus on the possibilities of intrapreneurial development and the role a person plays within business. Two personality tests meet the requirements to achieve this: Lessem's intrapreneurship assessment (1986) and Kakabadse's politics of management (1983).

Kakabadse's perception/action model consists of four profiles, based on two variables: the determinants of perception, where one develops their views from, and action strategies, the way someone's actions can be predicted. This results in four profiles: traditionalist, team coach, company baron and visionary (Kakabadse, 1983).

Lessem developed the spectrum of personality and intrapreneurship, describing seven intrapreneurial types (Lessem, 1986). The scale identifies characteristics of a person and how these could play a role within an organisation (Sayeed & Gazdar, 2003) These types are the innovator, enabled, leader, entrepreneur, animateur, adventurer and change agent.

A study by Sayeed & Gazdar (2003) debunks the statistical validity of Lessem's test. Three of the seven profiles showed consistently poor reliability, calling for the designer scale to be removed in whole.

Fig. 13 - *Measuring design expertise on a five level scale (Albers et al., 2012) .*
Is added based on Dorst's framework for design expertise (2011)

Two studies are found successfully applying Kakabadse's model without raising concerns for its validity (Sia & Bhardwaj, 2007; Cox, 1995). The study by Cox is especially interesting for increasing understanding of intrapreneurs as it links the profiles from Kakabadse to intrapreneurial and entrepreneurial backgrounds. The study with senior executives proved that the visionary and team coach profiles were more often entrepreneurs, while the company baron and traditionalist especially correlated with intrapreneurial backgrounds.
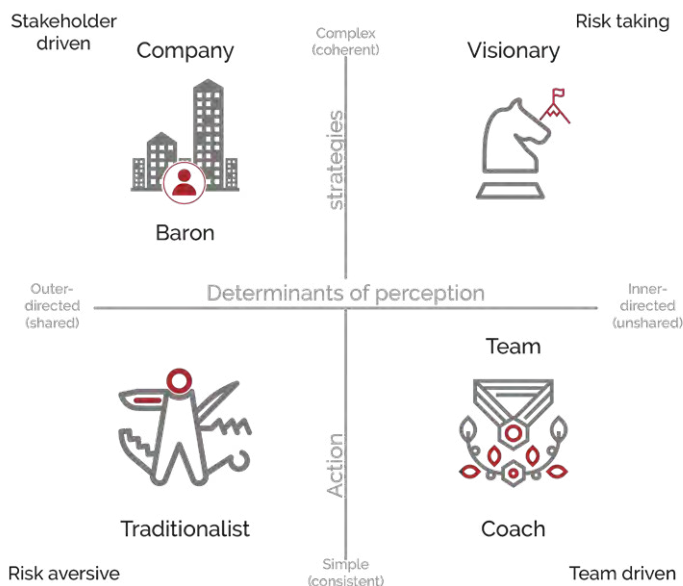
Fig. 14 - Perception / action model by Kakabadse (1983)

Design implications for understanding

2: Change ways of coaching based on design expertise

Most intrapreneurs at ING have little experience with innovation. By taking expertise into account, coaching can be adjusted to an intrapreneur's knowledge of innovation and ability to handle the complexity of design problems. This way PACE coaches are able to reduce time to unravel how they should change their style of coaching to support an initiative.

Novice ING innovators should for instance be supported in creating a broad view of the subject through a generative solution development approach (Cross, 2004). Also, to enhance the data they receive from testing, a coach should encourage the novice to dig deeper and find latent knowledge from their user-tests (Ahmed et al., 2003; Sanders & Stappers, 2012).

3: Increase understanding of intrapreneurial skills and activities

To support the success of design teams and create a better understanding of intrapreneurs, personality tests seems promising for intrapreneurial practice (Dym et al., 2005). The Kakabadse perception/action model (1983), helps to define ways of coaching and governance for intrapreneurial profiles. This enables PACE coaches to increase their knowledge of their intrapreneurs from the start of their PACE journey and reduce time required to start effective PACE coaching.

4.3. Design education

The internal analysis has shown that the goal of PACE is to create more experienced intrapreneurs by transforming their way of working. PACE coaches facilitate PACE education by providing all tools, methods and constructs that come with this design process. This paragraph describes how teaching innovative behaviour is achieved and how to design effective tools for this.

Teaching objectives for design

One of the most popular frameworks to classify what students learn is Bloom's taxonomy (Bloom, Engelhart, Furst, Hill & Kratwohl, 1956). Bloom's taxonomy describes a typology using six levels of cognition ranging from simple to complex educational objectives. To explain the taxonomy, I follow the revision by Kratwohl[4] (2002).

As a learner is educated towards more complex cognitive behaviour (synthesis), they are taught to better be able to judge the value of ideas within the current context. The six classes identified are knowledge (simple), comprehension, application, analysis, evaluation and synthesis (complex)[4] (Kratwohl, 2002).

To increase the efficacy of educating innovation, coaches should focus on developing design competencies such as coping with complexity (Albers et al., 2012). Based on Bloom's taxonomy, to reach higher levels of complexity in education, learners should learn to justify their stance of the design process (Evaluation) or even design new toolkits (synthesis).

Teaching design and innovation

Any designer experienced with innovation agrees that reading one blog-post and using a business model canvas, does not make you a good intrapreneur. To achieve this involves gaining experience by running design projects. In design education literature this practice is called Project Based Learning (PBL) (Dym et al., 2005), which forms the base of how design is taught at the faculty of Industrial Design in Delft as well.

PBL starts through collaboration of multidisciplinary teams applying divergent and convergent thinking to solve complex problems. By combining various intrapreneurial skills into one team, enables the application of existing knowledge in new situations (Dym et al., 2005; Conley, 2007). This opens the possibility of creating new solutions for existing problems and encourages continuous solution creation.

Level of cognition:	Example:
Synthesis	Produce new or original work
Evaluation	Justify a stand or decision
Analysis	Draw connections among ideas
Application	Use information in new situations
Comprehension	Explain ideas or concepts
Knowledge	Explain facts and basic concepts
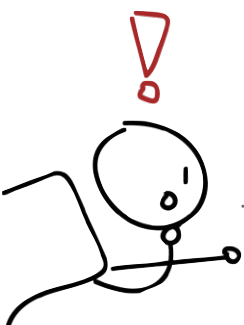
[4] *In Bloom's original taxonomy, synthesis was considered less complex, being between application and analysis.*

Fig. 15 - Bloom's revised taxonomy (Kratwohl, 2002) examples from Vanderbilt (2014)

To increase learnings from projects using design tools and methods, Seidel & Fixson (2013) suggest employing a reflexive manner. By debating ideas, processes and solution development, multidisciplinary teams become more successful at making innovation happen. This enables innovators to connect tacit knowledge to explicit knowledge, enhancing learnings (Cunliffe, 2002, see Fig. 16). Helping the intrapreneurs to become more aware of the knowledge gained and become better at applying their design methods in future situations (Scarbrough, Bresnen, Edelman, Laurent, Newell & Swan, 2004).

The activities of great intrapreneurs
To develop new solutions, intrapreneurs should create value by practicing design activities in new and unknown contexts. This involves solving ill-defined problems, problems with not one definitive answer (Cross, 2004). To do so, designers transition between five design activities:

▶ Formulating:
Identify, frame, formulate and reformulate relevant information of the problem at hand.
▶ Representing:
Visualise and write up multiple ideas to solve the problem at hand for learning and iterating on the final design.
▶ Moving:
Making design choices and develop solutions to challenge the status quo.
▶ Evaluating:
Knowing when to judge whether a solution performs well enough objectively and subjectively.
▶ Managing:
Merging all previous design activities, designers continuously reflect in-action, deciding what directions to take and choosing design implications.
Based on Lawson & Dorst (2009)

Experienced designers express great dexterity when it comes to these design activities, by making more frequent transitions than the novice (Atman, 1999). This study also presents
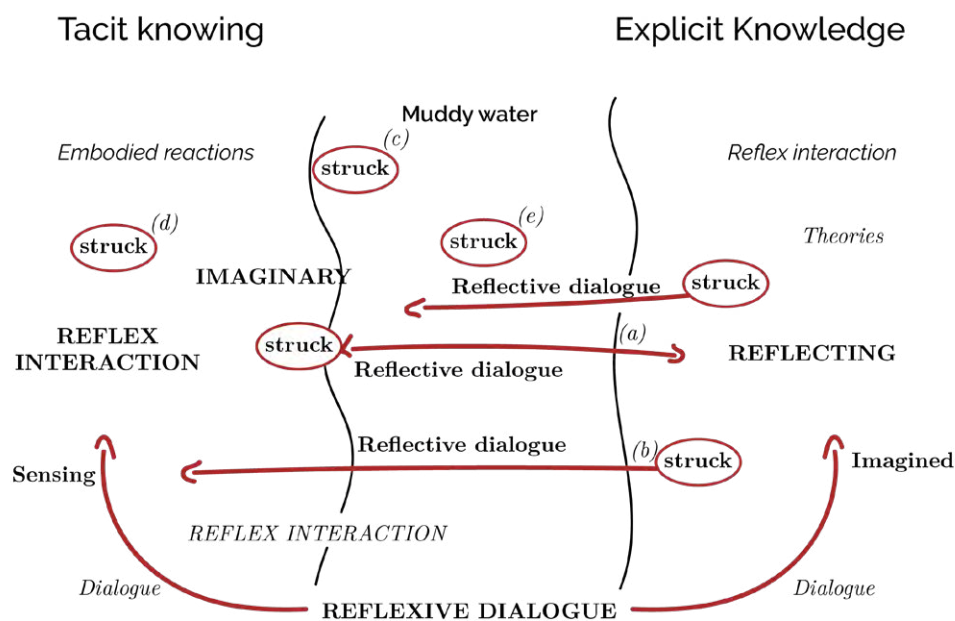

Fig. 16 - Using reflexive dialogue to interact between tacit and explicit knowledge (Cunliffe, 2002)

an explanation why novice intrapreneurs tend to require more time to solve innovation problems. Facing an ill-structured problem, the novice focus on completely defining problem before transitioning to solution creation. This costs significantly more time than experience designers who make assumptions in order to progress.

Designing tools for innovation

Innovation tools are an excellent way to provide design methods in a structured way through comprehensive frameworks which intrapreneurs are able to relate to (Kumar, 2004). This promotes connecting knowledge and insights to their project in a structured way. To use a tool and maximise its learnings, Von Hippel's (2001) proposes five objectives for effective toolkits:

▶ Enable user to carry out complete cycles of trial and error
▶ Offer a solution space for which they are creating
▶ Learners understand it without additional training because of its user friendliness
▶ Contain libraries of commonly used modules which people can incorporate
▶ Ensure that the product is producible without requiring revisions

The promise of innovation toolkits is a strong focus on learning by doing. This educational method is widely recognized as more effective than simply a lecture or reading a book (Von Hippel, 2001; Bloom, 1958; Shneiderman, 2007; Dym et al., 2005). The design of an effective toolkit, reduces learning barriers by facilitating the transition between more- to less-reflexive practice. Thus, intrapreneurial teams become more successful at applying design thinking (Seidel & Fixson, 2013).

The true value emerges when the tool is immersed within coaching, leveraging toolkits to evoke a higher level of design expertise and consequently increase effectiveness of innovation.

Design implications

4: Increase reflexivity of innovation methodology

To improve learnings from applying PACE, intrapreneurs should be encouraged to reflect on their design process. By focussing on evaluation, intrapreneurs achieve a higher level of congition, achieving more complex learnings (Kratwohl, 2002).

Since reflexivity towards the design process is no standard in current PACE application, the final solution should not make applying PACE more time demanding. The design should encourage intrapreneurs (and PACE coaches) to connect tacit- to explicit knowledge of PACE methodology. By standing back and looking at the bigger picture of applying a methodology, intrapreneurs can be encouraged to make more sense of their innovative experience (Cunliffe, 2002).

5: Create an effective tool for innovation

The solution should adhere to Von Hippel's (2001) five objectives for effective toolkits. It should not be a standalone solution replacing PACE coaching, but leverage a PACE coach's facilitation.

4.4. Concluding literature review

This literature study proposes five design implications for further development:

1. Leverage collaborative design practice to solve ill-structured problems
2. Change ways of coaching based on design expertise
3. Increase understanding of intrapreneurial skills and activities
4. Increase reflexivity of innovation methodology
5. Create an effective tool for innovation

With the investment in testing and developing innovative solutions, ING establishes a great project-based way of working. Not only does this prove as a fertile way of teaching design skills (Dym et al., 2005) it also brings intrapreneurs from different background together, creating effective multidsciplinary teams (Seidel & Fixson, 2013). However, looking at the intended intrapreneurial transformation of PACE there is no way currently to measure intrapreneurial skills.

The assessment of design competencies (Albers et al., 2012) can provide valuable insights into the degree of achieving this transformation. Another possibility is the use of the Kakabadse perception/action model. By balancing team perceptions and ways of acting, novice intrapreneurs can accelerate their learnings through close collaboration with more experienced intrapreneurs or -PACE coaches.

The current educational system of PACE application revolves around intrapreneurs comprehending the design process. The consequence is that they are excellent at describing what they used, but it does not achieve PACE's mission to transform intrapreneurial learnings. In order to achieve this transformation and increase learnings, PACE's education should evoke a higher level of cognition, with intrapreneurs to be able to justfiy their design process (Kratwohl, 2002).

One way to achieve a higher level of cognition is by encouraging intrapreneurs to reflect on their design process. By sharing knowledge of how problems are encountered within an initiative, the latent insights are made into explicit learnings (Cunlife, 2002), resulting in more effective initiatives when similar situations occur (Seidel & Fixson, 2013).

The transformation of intrapreneurial skills improves the way they tackle design activities and approach ill-structured problems (Cross, 2004). Through frequent reflections, novice intrapreneurs can perhaps 'mimic' expert intrapreneurs by making quick transitions between design activities (Atman, 1999).

Concluding Discover phase

The findings from case-study research, interviews and literature study present several clusters: becoming a better innovator, understanding intrapreneurship, increasing innovation learnings and making PACE feel less elaborate. These clusters conclude the analysis phase and form the base for defining the design challenge.

Pre-readings

Discover

The project

Internal analysis

Data analysis

Literature review

Analysis

Concluding!

Design challenge

Insights from discover

Causes of PACE's elaborateness

The hopeful situation

The design challenge

Define
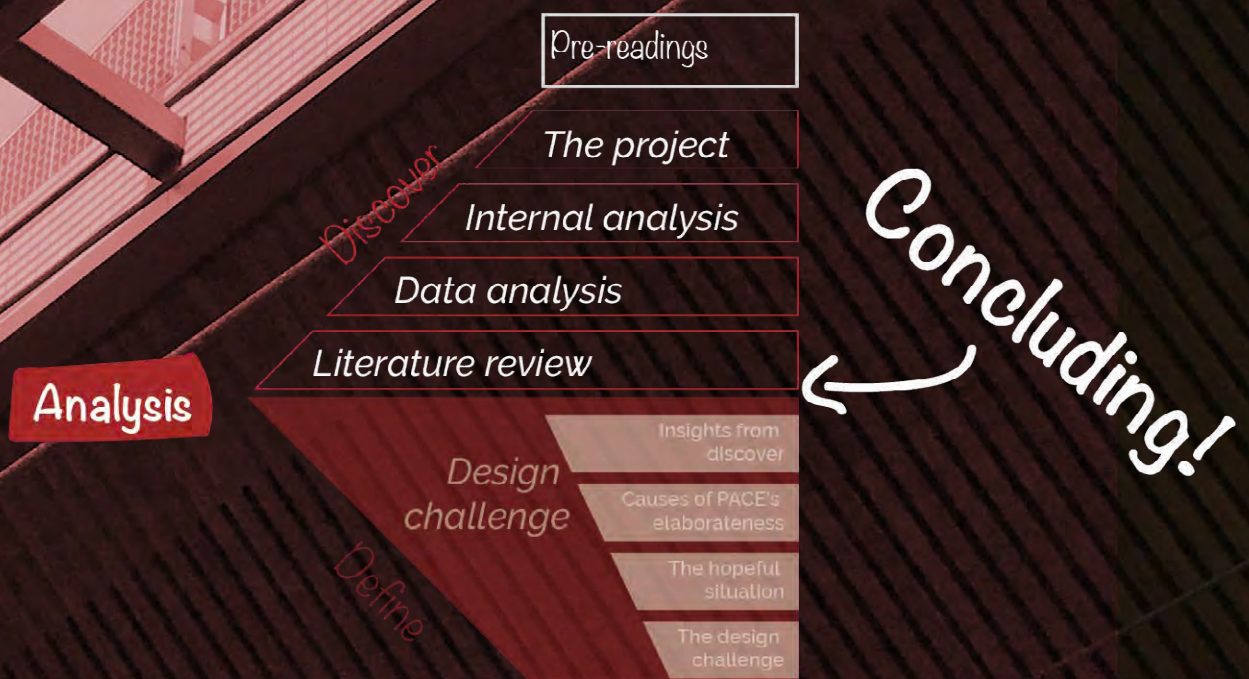
Becoming a better innovator

ING successfully practices project-based learning (Dym et al., 2005) by applying PACE to run projects, develop new solutions and gaining actual customer insights. For intrapreneurs this opens the possibility to transition from being a novice, knowing little to nothing of innovation. To becoming an experienced intrapreneur being able to handle the complexity of innovation (Albers et al., 2012).

An interview exemplifying this was with P13, an experienced ING innovator who was about to start his second PACE accelerator initiative. During this interview he was able to indicate clear expectations of a PACE coach and his expected approach towards the innovation process. The learnings from his previous experience offer great perspectives to the intrapreneurs eager to learn new skills and seems to deliver upon the promise of transforming innovation.

Understanding intrapreneurship at ING

To profile intrapreneurs at ING three elements comprise a profile description:

▶ Kakabadse's political styles test:
Support a PACE coach's understanding of an intrapreneur's perceptions and the source of inspiration to take action.
▶ Intrapreneurial type:
The unique expertise, skills and background of intrapreneurs. Including motives to join an initiative.
▶ Innovation source:
Present implications for solution development for assisting certain teams based on where their idea emerged from.

These three elements combine into a generalised description of intrapreneurs and the requirements of their projects.

Making PACE feel less elaborate

PACE and the PACE accelerator is described very elaborately. The allocation of resources to actively improve and document PACE showcases ING is serious about their innovative efforts. However, the feeling of PACE being too elaborate emerges, leading to uncertainty for intrapreneurs (and some PACE coaches) towards the design process.

The extent to which intrapreneurs embraced the design process of PACE can improve by improving understanding of their needs and desires with PACE coaches. This alignment makes for more effective communication, and understanding of PACE, enabling more effective multidisciplinary teams.

Increasing innovation learnings

By taking the decision to start intrapreneurship, you dedicate your time and efforts into venture creation. This showcases the intrapreneur's eagerness to learn new ways of working and expand their knowledge on the initiative's subject. In order to transform an intrapreneur's and eventually ING's way of developing products and services, this active mind should be leveraged. However, "*In the playbooks there is nothing in team development*" (P15) and PACE coaches mainly structure retrospective based on accelerator requirements (P16).

Intrapreneurs are currently taught to comprehend PACE tools through execution of the method. This comprehension allows them to explain what they use and how the methods come together (Comprehension), but does not teach them to justify why these are right ways of progressing (Evaluation). By adjusting the design of PACE 'education' towards evaluation of the design process, the track can be design to achieve higher levels of cognition (Kratwohl, 2002).

Fig. 17 - To increase learnings for intrapreneurs the desired educational objectives focus on evaluation of PACE.
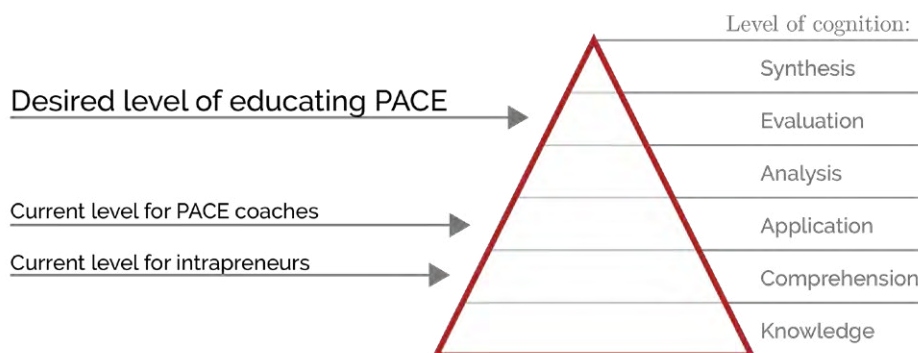
Through this reflexive practice, intrapreneurs can become better at justifying the design decisions and thus for more explicit design process knowledge (Cunliffe, 2002). Sequentially, by enabling an intrapreneur's design process knowledge, their pace of personal development will be more effective. Transforming the way ING's intrapreneurs (and possibly PACE coaches alike) are taught to innovate and develop solutions in a time-effective manner.

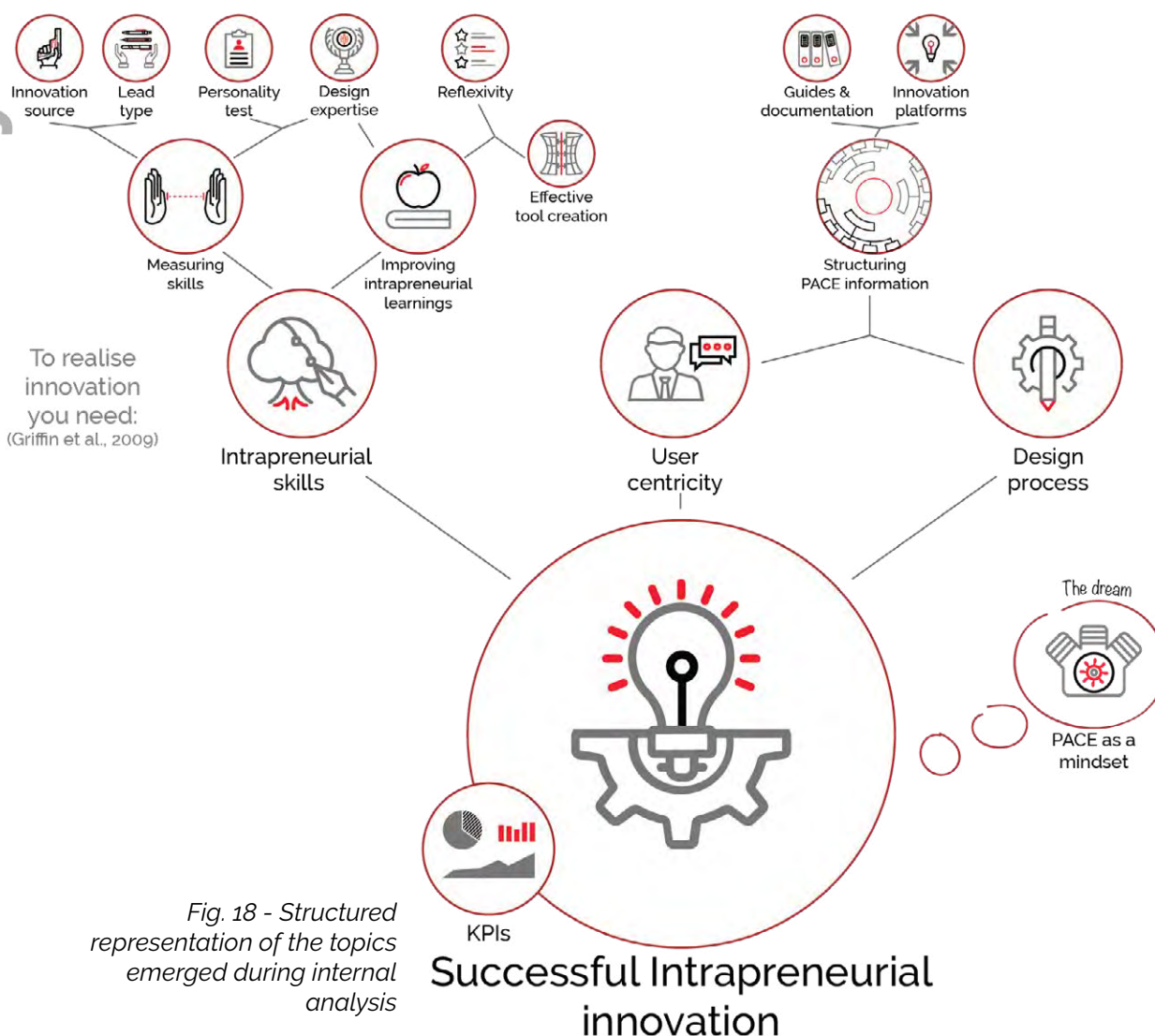Fig. 18 - Structured representation of the topics emerged during internal analysis

5

Design Challenge

The design challenge defines what direction I focus development on. It defines the value the final solution needs to deliver.

5.1. Causes of the elaborateness problem

During analysis, three causes are found affecting the effectiveness of PACE innovation: the abundance of information, wayfinding the right information and reflection of the design process between PACE coaches and intrapreneurs.

▶ So many documentation, intrapreneurs get lost

Enumerating what a starting accelerator initiative receives, there is: an innovation fund-, accelerator-, PACE- and Discovery-guide totalling up to 157 pages. Adding to this, based on the initiative's specifics they receive an additional Explore-guide (22 pages), pitching-guide (20 pages) and innovation portfolio guide (20 pages). Within all documentation the intrapreneur finds at least 54 unique innovation methods and toolkits, including all canvasses. Propagating the mindset of PACE makes this a challenging endeavour, the documentation being in the way of intrapreneurial learnings.

▶ Information is scattered throughout multiple sources

To locate the right tools and documents, the PACE coach has search an online innovation station, a shared drive and their e-mail. This variation of sources makes it challenging for a PACE coach to know whether they are using the latest version, resulting in a lack of overview of all PACE offerings. Consequently PACE coach lose precious time to locating the right workshop materials and use mainly the offerings they are most familiar with. Solving this problem supports the desire to grow the amount of PACE offerings, since a reduction of the amount of innovation tools is unlikely to occur.

▶ Lack of reflexivity of the design process

In retrospectives, initiatives and PACE coaches discuss the progress made project-wise. The main discussion is the development of the solution, with little focus on the design process. The current design of PACE as an educational program for innovators is not designed to provide this structured way of increasing understanding of innovation.

These insights lead to the understanding that PACE is a too elaborate innovation methodology, leading to a gap between the theory PACE presents and actual practice. Coaches and intrapreneurs struggle to understand the structure and the interaction between all its elements. Simultaneously, management expects intrapreneurs to develop within the time presented in documentation. To make this desire a reality, PACE needs to become a mindset, which is not achieved through current practice. Intrapreneurs can become much better innovators and learn more from applying PACE by better embracing reflexive practice. Let's make PACE a mindset!

5.2. The future situation

The future situation describes the hopeful situation this graduation thesis tries to achieve. This is described in Amazon's press-release style (Rossman, 2017), presenting the story of my solution's implementation a year hence.

ING introduces intrapreneurship education programme

Amsterdam, 8th of May 2019

ING's Chief Innovation Office starts fighting the ever expanding abundance of innovation documentation. Their newest addition to their innovation methodology transforms how internal innovators drive innovation.

For the intrapreneurial type within large corporate organisations a common pain, elaborate documentation. Intrapreneurs from all major corporations agree, the docs should go!

Their risk-aversiveness makes it no exception to expect over 100 pages to start 'innovating'. Or at least to read up about the way their corporate accelerator works, what their innovation methodology is or how every single innovation tool works.

"*This had to stop*", says the initiator of the disrupt disruption project: Pieter Lenselink. "*At ING we kept describing all the bits and pieces of innovation, until we realised the effect it had on our intrapreneurs*".

Their Chief Innovation Office therefore started an intrapreneurial programme to help intrapreneurs and innovation coaches to stop reading and start reflecting. This programme encourages innovators to collaboratively approach the design process. Discussing what design steps worked really well, and the ones we should simply refrain from using in the future.

ING explains their programme in three simply steps:
1. Understand an initiative's requirements,
2. Make the design process comprehensive through visuals,
3. Reflect on the design process collaboratively using their special toolkit.

Lenselink gives us some tips to start for yourself. "*Go talk to your intrapreneurs and ask them what is their biggest pain with the current way of innovating. Then start investing in solving it*".

The programme proves successful so far. Since last year's launch it has achieved a shift in innovation education, achieving a higher satisfaction and success rate amongst their intrapreneurs. Some start-ups are even developing faster than the time between stage-gate describes. One taking two weeks shorter than expected, rolling out their second minimum viable product within sixteen weeks of development.

As ING keeps developing, we look forward to seeing the live products which will disrupt banking as we know it.

5.3.The design challenge

The design challenge is defined as follows:

Develop a **personalised PACE application** that meets the needs of new initiatives to **enable their understanding of the design process**. Do so by providing a way for PACE coaches to **feed and structure information** when coaching an initiative.

Personalise PACE application

By personalising PACE, it moves away from being a one size fits all methodology. The solution must take all PACE offerings and better meet the desires of individual intrapreneurs. Improving the comprehension of innovation for intrapreneurs (and PACE coaches) and how they apply PACE.

Enable understanding of the design process

Intrapreneurs should become an ambassador of their design process, being able to explain their design process and justify steps taken. It should engage them to actively achieve learnings from their design process. To achieve this, a higher level of cognition needs to be promoted.

Feed and structure information

The solution should focus on making it easier to find the right information by presenting it in a comprehensive way. Through a visually appealing solution, the PACE offerings need to be integrated, allowing intrapreneurs and PACE coaches to autonomously reflect on the design process.

"The faster we make our ideas tangible, the sooner we will be able to evaluate them, refine them, and zero in on the best solution.

- Tim Brown, CEO of IDEO

6

Discover

Analysis

Define

Develop

Design

Deliver

Designing

Based on the analysis phase, designing starts in two directions. Design for understanding and design for planning, each led to the development of a solution specific for the direction. To get to the development of solutions, I ideate in both directions, choosing the most promising idea from both.

This chapter presents all the materials per solution, how it works and insights from testing. Concluding, I choose to pivot the solution direction to design for overview in which I present the final concept.

For all detailed materials and steps of development for the directions, see appendix F, G and H.

6.1. The Design Directions

Analysis

Design

To realise innovation you need:
(Griffin et al., 2009)
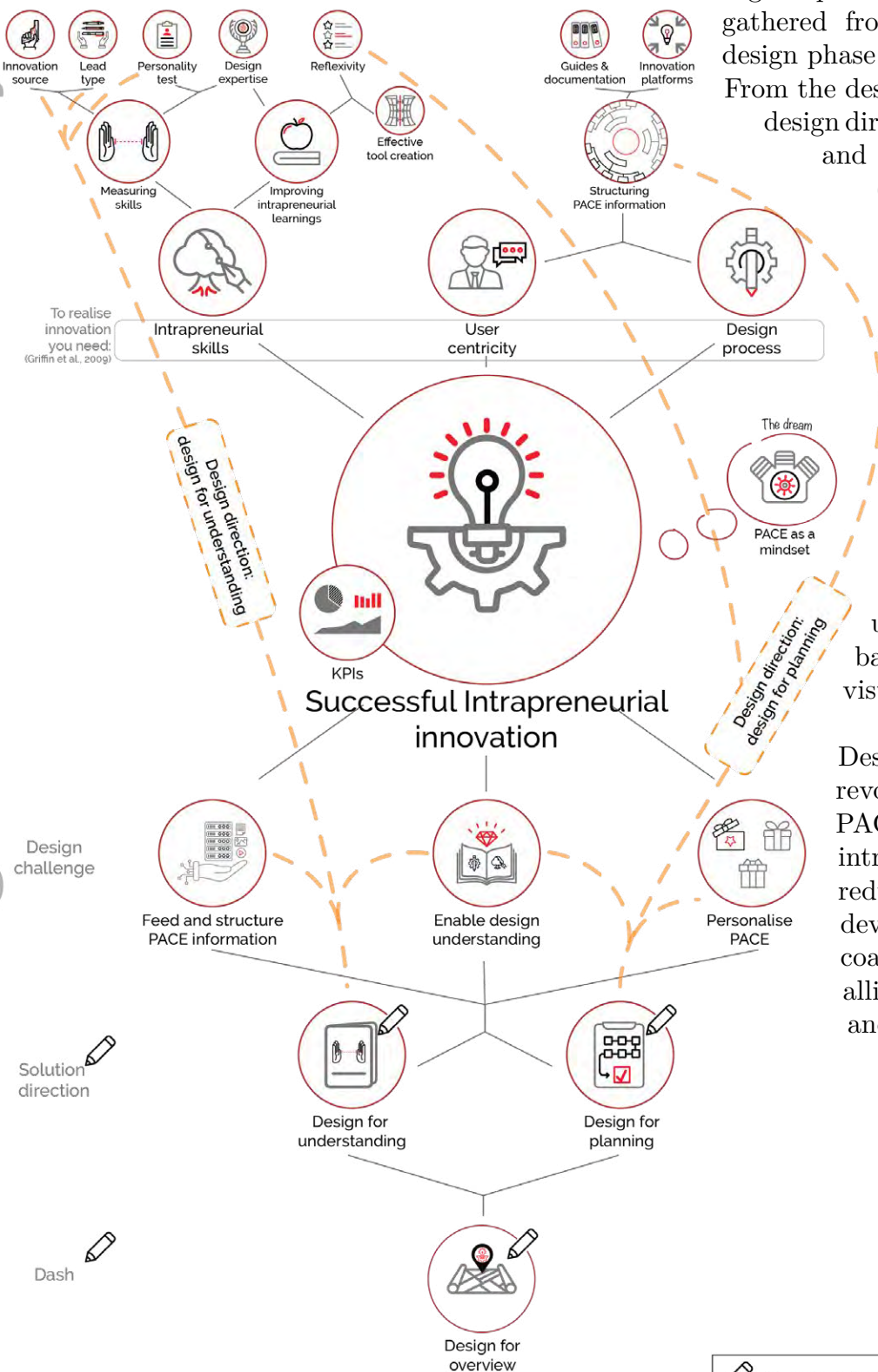
Fig. 18 presents an overview of all data gathered from the analysis- and the design phase and how these interrelate. From the design challenge I choose two design directions, design for planning and design for understanding (see the orange dotted lines in Fig. 19).

Design for planning attempts to increase knowledge intrapreneurs and PACE coaches have of their design process. Based on the benefits of reflexive practice from the literature study, the focus is to improve understanding of PACE's basic principles through visualisation of thought.

Design for understanding revolves around the knowledge PACE coaches hold of intrapreneurs. The focus is to reduce time to start solution development by helping PACE coaches and intrapreneurs to allign their lines of thought and expectations.

Fig. 19 - Structured representation of the topics and relations in between

- Designing

6.1.1   Ideation

Within the design directions of design for planning and design for understanding, I start ideation. By combining several ideas within each design direction, I integrated multiple solution elements from ideation. I rapid prototyped my concepts to ensure quick iterations, making adjustments after every interview/test.

For design for planning, the focus is to structure and feed PACE's information, presenting it in an easy-to-understand manner. The red encircled ideas from Fig. 20 are PACE restructuring mapping, methodology logbook and PACE planning tool. These three combine into the 'innovation methodology canvas'.

For design for understanding, the four encircled ideas are source boundary profiling, initiative lead understanding, personality assessment and pre-accelerator assessment. The assesses intrapreneurs before entering the accelerator based on their intrapreneurial background, Kakabadse's personality test and the source of the initiative. Providing a PACE coach with preliminary knowledge of a new initiative.

The paragraphs 6.2 and 6.3 present the embodiment of both directions into a concept.

Fig. 20 - Design for planning ideation
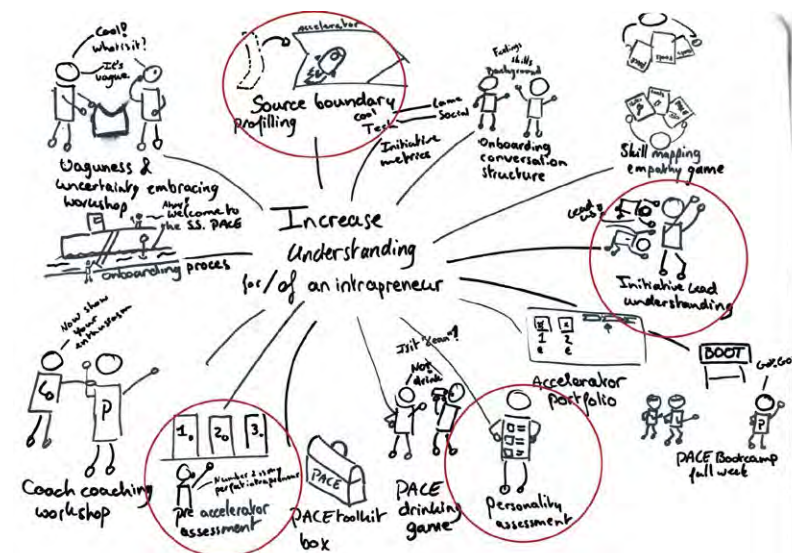*(Red encircled are ideas chosen)*

Fig. 21 - Design for understanding ideation
(Red encircled are ideas chosen)

6.2. Design for Planning

The design for planning concept is the Innovation Methodology Canvas. This canvas is a tool engaging intrapreneurs and PACE coaches in a dialogue about their current- or upcoming design process. Through collaboration, they create a visual roadmap, being facilitated by the canvas for an exchange of intrapreneurial learnings. This dialogue offers reflection of the design process and helps to improve understanding of applying PACE.

6.2.1 The materials

Innovation Methodology Canvas

PACE Tooltype map

11 Tooltype Cards
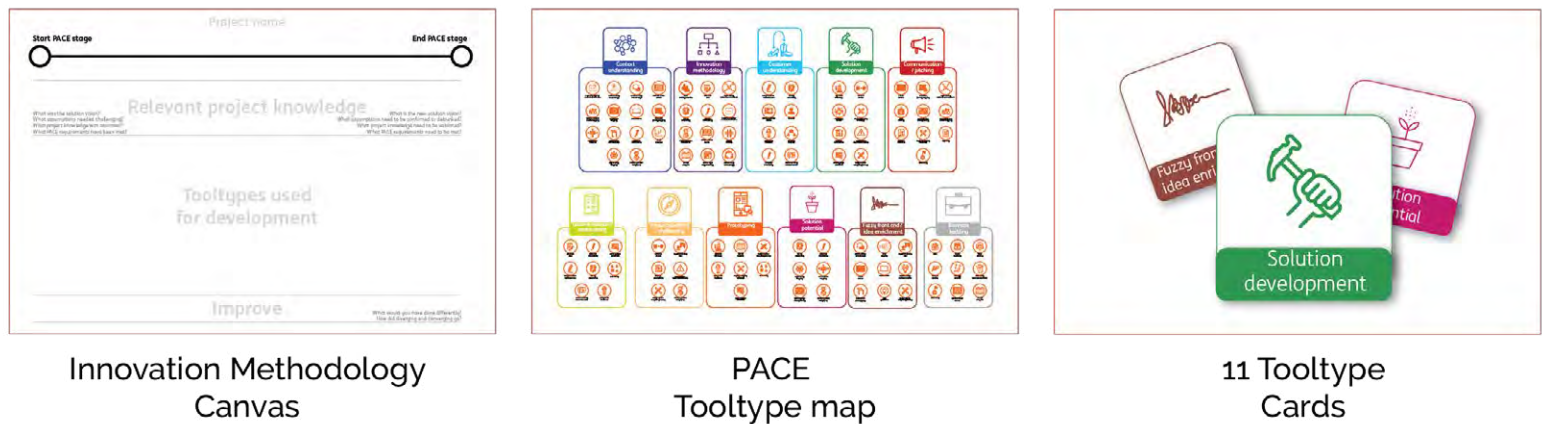
Fig. 22 - All Innovation Methodology Canvas materials

The Innovation Methodology Canvas consists of a canvas on which the design process is mapped, a PACE tooltype map visually presenting all innovation tools condensed in PACE and eleven tooltype cards. A tooltype clusters the main goal a group of tools attempts to achieve. For instance, the tools "survey researching" and "empathy mapping" are grouped under the tooltype "Customer Understanding".

6.2.2 How it works

The PACE coach notices the intrapreneur finds it hard to grasp how the design process works. He decides to dedicate a retrospective to reflect on the design process.

Using the innovation methodology canvas they start filling in the relevant project knowledge at the start and end of the PACE stage. They discuss their assumptions.

They place the tooltype cards on the canvas based on the tools they actually used and what their goals were.

In the improve box, they write down what they could've changed or improved for a smoother design process.

During the discussion, the PACE coach and intrapreneur reflected together how they underwent their design process. Creating explicit learnings from the design process.

Fig. 23 - Step by step description of the Innovation Methodology Canvas

6.2.3   Testing, insights & development

The Innovation Methodology Canvas is developed through four rapid prototyping tests, making improvements after every test based on the insights gained. Testing was halted after the fourth test due to insights invalidating the value of the canvas. Appendix F presents the considerations and insights for every individual test.

The tests show promising results for the reflection of PACE and the tooltype map. Within 10-15 minutes, all PACE coaches were able to shape their design process by de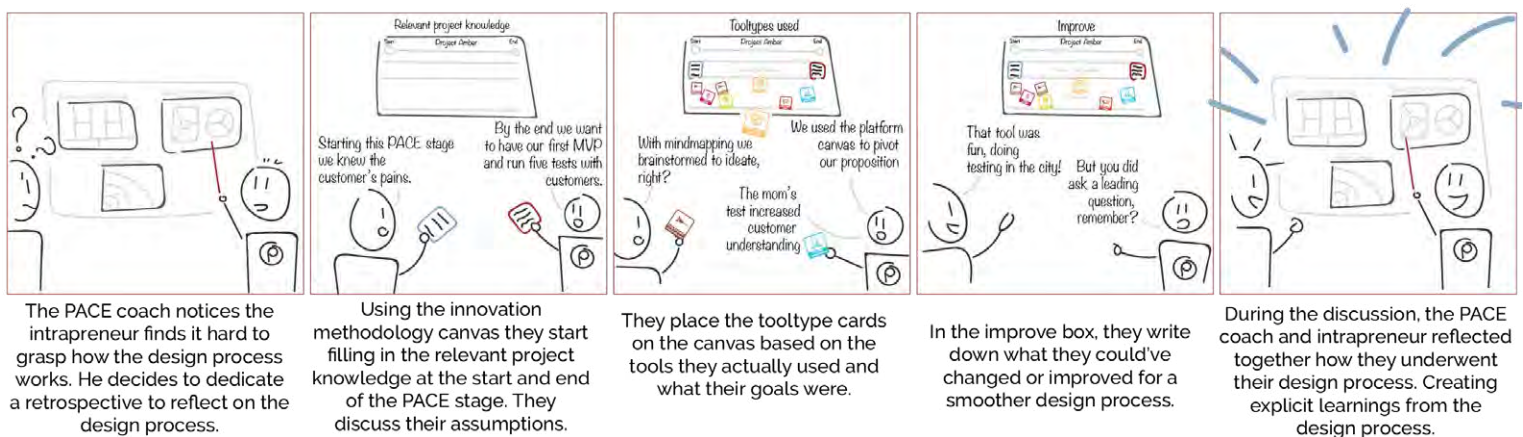scribing the project knowledge and placing tooltype cards. This gave deep insights into the application of PACE and coached showed reflexive practice on their PACE application. PACE coaches displayed increased reflexive practice during the test: "*they leaned towards making it too big, too complex. It was challenging to keep the scope small.*" (P04).

Without any explanation, the moment P15 saw the tooltype map, he stated: "*This is the clearest visual representation I have seen (of PACE)*". Afirming the value the tooltype map delivers for increasing understanding of PACE. Understanding the clustered tooltypes came natural to the PACE coaches without explanation as well: "*Yeah, this gives me an idea*" (P16).

In contrast to the tooltype map, the most important part of the Innovation Methodology Canvas, the canvas itself, received less positive reviews. It required elaborate explanation and step by step guidance, to take the PACE coach through every little step. When discussing its implementation possibilities, P16 described precisely why the canvas was not working: "*There is so much written and available already. People will think it is interesting, but not now and not for me.*". The canvas only added to the abundance of PACE tools, instead of achieving the opposite.

6.2.4   Valuable insights for further development

Although the innovation methodology canvas did not prove to be as valuable as intended, various insights were gained which are used for future solution development.

▶ The visual representation of tooltypes provided clarity. PACE coach autonomously understood how the tools were sorted and what the shared characteristics of tools were.

▶ By shaping their PACE journey, placing tooltypes on the canvas, PACE coaches were able to present their design process. Explaining how encountered situations were approached or certain tools would be used differently in the future.

▶ PACE coaches were able to indicate what tools were and were not effective for the initiative's development based on the journey they created. The coach proved to reflect on their PACE application and was better able to transfer this compared to the explorative interviews.

6.3. Design for Understanding

PACE coaches need to be able to transfer innovation knowledge as efficiently as possible to intrapreneurs for them to develop their solution. The Initiative Profiling concept focusses on increasing a PACE coach's understanding of the boundary conditions for a new initiative, providing preliminary coaching insights. Gaining this knowledge, PACE coaches are better able to propose tools more accurately and reduce PACE onboarding time.
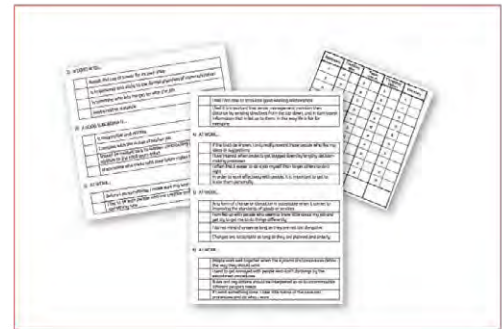
6.3.1 The materials

Initiative Profiling template
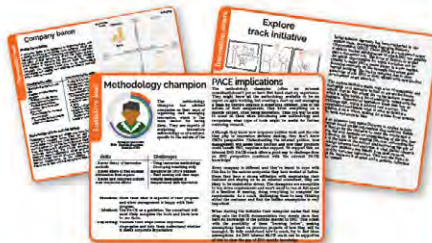
Initiative Explanation Cards

Kakabadse Personality Test

Fig. 24 - All Initiative Profiling materials

The Initiative Profiling Template is a template to place Initiative Explanation cards on. The template contains a step by step description how the tool works. By choosing the right Initiative Explanation cards based on Kakabadse's personality test, the initiative's innovation source and the type of intrapreneur and placing them on the template, a story line is crafted. This describes the initial topics PACE coaching should address in order to successfully develop a solution.

6.3.2 How it works

An initiative is approved to join the PACE accelerator and is appointed a PACE coach. The PACE coach proposes to use the Kakabadse personality test to start the journey.

The intrapreneurs fill in the test. After receiving the results, the PACE coach discusses the insights with the intrapreneurs.

The PACE coach chooses the right explanation cards based on the personality test, type of initiative lead and the source of innovation. He gathers them on the initiative lead template.

The PACE coach reads all cards, crafting the story of the initiative's needs for PACE coaching. He creates a proposition of PACE tools for the innovation journey.

The moment the initiative starts in the accelerator, the PACE coach shows the plan he made. The initiative kickstarts their PACE journey without further ado.

Fig. 25 - Step by step description of Initiative Profiling

6.3.3 Testing, insights & development

Through four months of case-study research and gathering insights from interviews the data emerged to create this solution. The segments integrates paragraph "3.2. Segmenting initiatives at ING" on page 22, describing the content for ING specific knowledge, and the literature study's outcome of using Kakabadse's perception/action model.

Development of Initiative Profiling started with the hypothesis of onboarding taking too much time for initiatives entering the accelerator. Initially, this seemed to be the case: "*I did not know what to do with the team, I found that out two weeks later.*" (P15). Because the PACE coach was unaware of the initiative's Innovation Bootcamp background, he struggled to convince the team to halt solution development before going back to initial assumptions.

The insights from research proved in line with PACE coach's image of innovation sources and intrapreneurial types, making Initiative Profiling an accurate generalisation of ING's initiatives. However, by asking how they would adjust their coaching, P14 told me: "*This is for intrapreneurs, entrepreneurs and consultants. I do not see the difference.*" PACE coaches base their coaching much more on gut feeling and would not accept use the concept of Initiative Profiling.

Since Initiative Profiling did not solve the problem of PACE being elaborate and since it did not resonate with a PACE coach's needs and desires, development was halted. Although the stereotyped images match, PACE coaches are unable to state precise ways to adjust their coaching based on the three variables within the concept.

6.3.4 Valuable insights for further development

For future solutions, these insights are valuable:

▶ A novice PACE coach does not know implications by heart. Experienced PACE coaches know implications based on their knowledge as a PACE coach, novices could benefit from this knowledge to reduce time to start solution development.

▶ Kakabadse's test can be embedded into the available PACE tools. Currently, only one personality test is used frequently by PACE coaches.

▶ When being asked to discuss what PACE coaches do to coach an initiative, they tend to use stereotypes similar to the generalisation I created. I want to develop a more in-depth way of discussing the design process.

6.4. Pivot – Design for Overview

Overview: *"a general description or an outline of something." (Oxford learner's dictionary, 2018)*

Both solutions failed to solve the problem of PACE being too elaborate. This means they were not able to meet the design challenge of developing a personalised application of PACE. Based on a study by Bajwa et al. (2017) I explored pivoting possibilities, choosing to do a platform pivot. The pivot takes valuable insights from previous solutions and integrates them into a new platform solution. This results in the new solution direction: Design for Overview.

6.4.1   Why pivot?

By pivoting, a change is made in the value proposition offered. In contrast to killing the project and starting over, the valuable elements from previous development are taken and integrated into a new solution. The parts which proved to insufficiently solve the problem are adjusted or removed.

Reasons to drop both directions
The Innovation Methodology Canvas proved to add to the elaborateness of PACE as it was just one of many tools PACE coaches could use.

The Methodology Canvas also required a lot of intervention and steering. The tooltypes map however proved easy to use and -understand. Based on the design challenge a deeper level of reflections needs to be evoked for the solution to be valuable.

The Initiative Profiling Template proved to be a good generalisation of the accelerator initiatives. However, through multiple tests no proper way of embedding it in a PACE coach's way of working was found. The generalisation presented did not prove to align sufficiently with a coach's way of educating PACE.

Fig. 26 - A PACE coach testing the Innovation Methodology Canvas

6.4.2 Design for overview

Design for planning focussed on the intrapreneur's affiliation with the current design process. Design for understanding focussed on a PACE coach's initiative knowledge to improve their coaching. Design for overview increases intrapreneurial learnings by making PACE's structure easier to understand. Facilitating overview revolves around encouraging reflection through clarity of the design process.

**Shanghai, the city of overview – Pieter's story**

Shanghai, a city not well known for its bright colours and playful architecture, but by bleak grey-shaded buildings and smog. At a previous visit to Shanghai, we decided to visit the Shanghai tower, the second tallest building in the world. Standing proud at 632 meters high, the tower provides unimaginable views of the city.

After an hour of gazing through the constant smog, hope of seeing a beautiful view was considered lost. However, just as we were about to leave for the elevators, the smog lifted, and the sun started shining. Turning he city of smog from a bleak sober city into a colourful palate of architecture. Apartment blocks, separated by bright paints, and luxury hotels with diamond blue pools appeared. This was a different Shanghai from before. So, what changed?

As the view became clearer, I started understanding the city better. I understood how the city embraced the mighty Yangtze river and got a look into the excellence of Chinese city planning. This visit changed how I oriented in Shanghai and how I looked at the city in general.

City overview is not that different from understanding innovation. Through abundance of documentation, intrapreneurs struggle to find their way through PACE. Standing on PACE's ground floor, all tools seem unrelated and it is hard to understand its structure. If only we were able to see PACE from a bird's-eye perspective, it would make wayfinding much easier.

Design for overview, bridges PACE's elaborateness through clarity. Helping intrapreneurs to stand on top of PACE's world, understanding its structure as the fog of documentation lifts. My overview of Shanghai drastically changed my understanding of the city. Maybe, through overview, intrapreneurs see PACE clearer than before. And maybe, as the fog of abundance lifts, they see a bit of PACE's colourful beauty underneath.
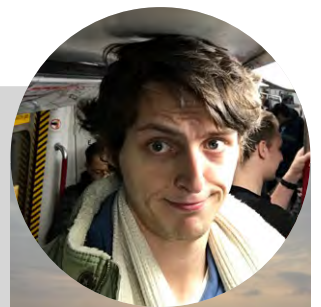
6.4.3 Ideation for overview

For a fresh ideation round, eight insights from the analysis phase form the base of the pivot towards design for overview.

1. The initiative explanation cards accurately describe ING's innovation funnel's intrapreneurs and initiatives.
2. ING's innovation priority focusses on platform development.
3. Intrapreneurs lack reflection of their design process, leading to less explicit knowledge from the tacit learnings of applying PACE.
4. PACE coaches struggle to find the tools they need for workshops, the moment they need it.
5. PACE coaches lose track of all new tool introductions sticking to the familiar tools, limiting development of PACE.
6. PACE coaches lack integration of all PACE offerings in one visualised place.
7. Now that the boundary conditions of initiatives are known innovation can be personalised for their needs and desires.
8. There is no structure for PACE coaches to reflect upon their design process with each other.

Fig. 27 - Insights combining into a context describing the new ideation spectrum

6.5. Dash – a platform for PACE coaching

Resoltuing from ideation (see Fig. 27) I choose to follow-up the design challenge by designing an online learning platform. The possibilities of reducing elaborateness of PACE through integration and the ease of personalising PACE seems promising to make innovation more effective.

Based on the speed of delivering intrapreneurial learnings, the platform is referred to as Dash. Fig. 28 presents its first concept draft. The four highlighted integrations take the promising parts of both previous solution directions and embed this within Dash's DNA.

Fig. 28 - Four key functions of Dash are based on the innovation methodology canvas and initiative profiling
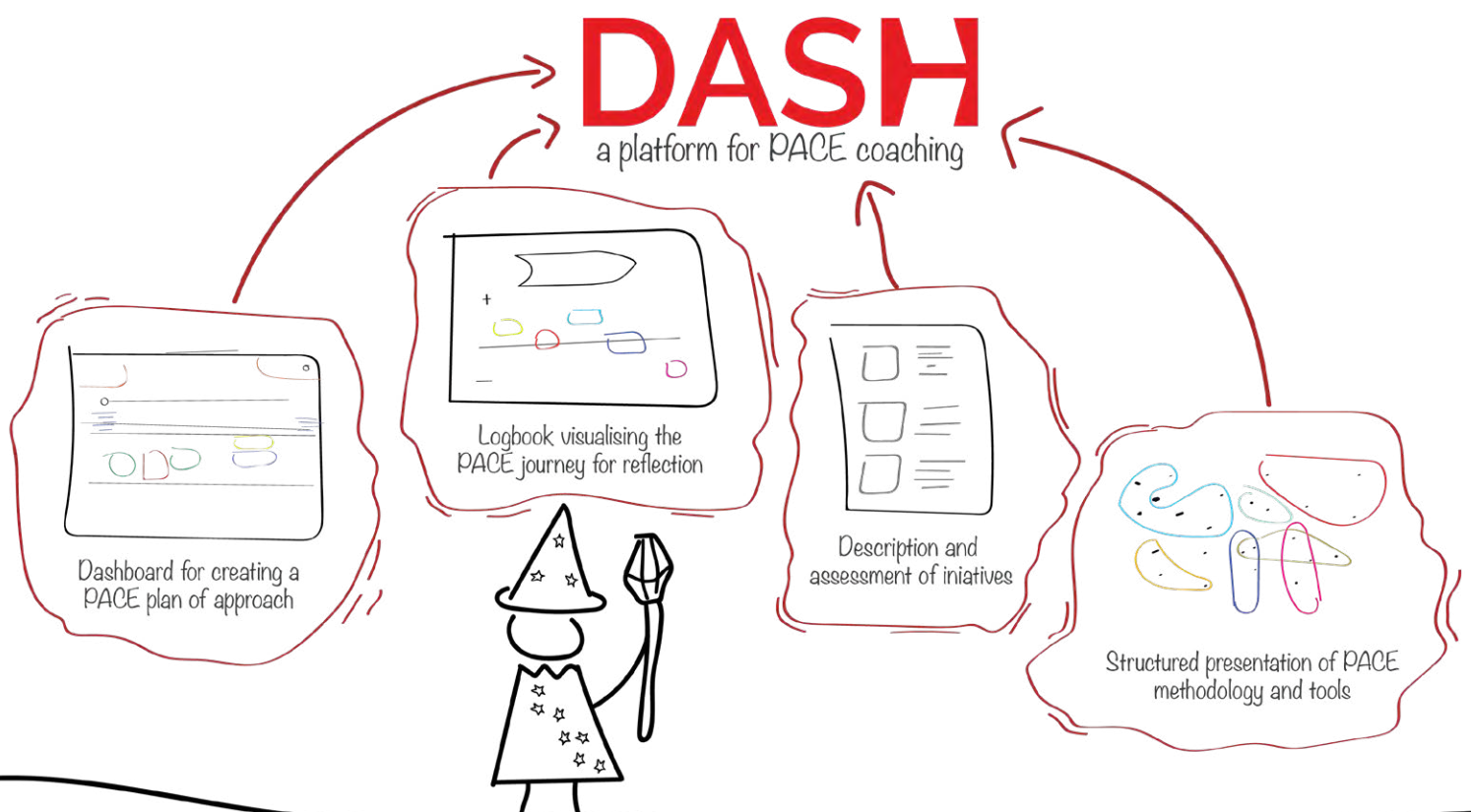
Pre-readings

Discover

The project

Internal analysis

Data analysis

Literature review

Analysis

Insights from discover

Design challenge

Causes of PACE's elaborateness

Define

The hopeful situation

The design challenge

Design for planning

Develop

Design for planning

Designing

Design for overview

Design

Pivot

The solution - Dash

Deliver

Evaluation

DA

a platform for

The solution

Dash is based on the premise of intrapreneurial learnings. By integrating all PACE has to offer in a clear and structured overview, it becomes easier to understand what PACE is. To increase intrapreneurial learnings even further, intrapreneurs and PACE coaches are encouraged to learn from each other. Educational lectures by PACE coaches are integrated to present and share insights in tools. Also, a simple reflection tool makes reflexive practice easy, time-efficient and opens conversation possibilities to discuss the application of PACE.
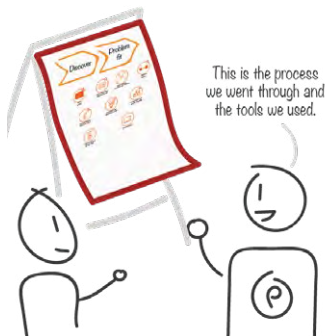
7.1. Dash in one page

7.1.1   Positioning

To describe Dash's offering I position it as follows:

For passionate intrapreneurs, Dash is the go-to platform for gaining intrapreneurial learnings. By seamlessly presenting all PACE offerings, becoming an ambassador of innovation is easier than ever.

7.1.2   "Materials" - Four main Functions

PACE log, displays tools used for a PACE-aligned design process.

Document creator, allows for personalised guide creation.

Reflection stickers, for easy reflection of the design process.

PACE coach lectures, share PACE insights and innovation knowledge

7.1.3   How it works

At the start of a project the PACE coach subscribes the team to dash. The intrapreneurs explore the platform, learning about PACE and its possibilities.

Applying a tool in the field, the intrapreneur doesn't understand an aspect of a tool. He looks up information complementary to the PACE coach's introduction.

The PACE coach keeps track of the initiative's design process and uses reflection stickers to assess the effect of the PACE tools.
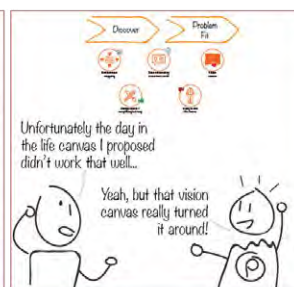
Using the PACE log, the intrapreneur and PACE coach reflect together how the process went so far and make future improvements for the initiative.

Both are able to look back at the journey and take the valuable learnings from it for future projects by exploring how they applied it previously.

Fig. 29 - Several steps explaining the application of Dash

7.2. Value proposition

The value proposition focusses on the value Dash intends to deliver. This chapter describes the user Dash is designed for, after which I elaborate on the core values of the solution.

7.2.1 Dash's users

The initial users Dash is designed for are novice ING innovators and new PACE coaches. These users do not know PACE, making it hard to keep track of all the tools and elements to it. As a learning platform for innovation, Dash speeds up intrapreneurial learnings for both. The following page presents both users through a persona.

A third user – management

During development a third user emerged, namely accelerator management. Since Dash's initial focus is to increase intrapreneurial learnings, this user will not be part of the following persona's. However, the role of management is vital for Dash's implementation and through gathering data, Dash might change PACE management. Due to this important role, paragraph 7.4.1, presents the offerings for management.

Frank[4]
PACE coach

Daniela[4]
Novice ING innovator

About:

Frank is a starting PACE coach, who started four months ago. Before becoming a PACE coach, he was innovation manager at Heineken. He has worked with design thinking and agile, but not with the lean start-up. After four months he coached two initiatives, one of which being Daniela's. He wants teams to learn as much as possible and eventually makes his role obsolete due to autonomous intrapreneurship.

About

Daniela is a novice ING innovator, and pitched her idea within the Innovation Bootcamp. After three years within ING Romania's app development squad, she decided to pitch her disruptive idea. She is eager to use PACE, as she never got the chance of working with it but heard a lot of great stories. She is a critical mind and always looking for the most efficient way of solving her problems.

Frank's pains of applying PACE:

- *"In the playbooks there is nothing on team development."*
- *"I lose a lot of PACE background time explaining what PACE is."*
- *"The platform canvas helps and the toolkit as well, but we started using it too late."*
- *"I struggle to challenge their creativity because they do not accept my challenges."*

Daniela's pains of applying PACE

- *"PACE is used as a shit storm of books all dropped on one big pile."*
- *"I do not like to use this standard template."*
- *"I do not know what is happening, I presumed that after we diverged we would converge in Problem Fit."*
- *"Our PACE coach was a bit reluctant when I proposed a new approach."*

Frank's desires:

- Clear understanding of all PACE tools and guides
- Easy way to explore newly introduced tools
- Become a better coach, enabling divergence for creative ideas
- Allow intrapreneurs to learn as much as possible.

Daniela's desires::

- Know why certain tools are used and what they encompass
- Able to propose new direction for their design process to PACE coach
- Learn as much as possible from the innovation journey

[4] Picture courtesy of *www.moederannecasting.nl*
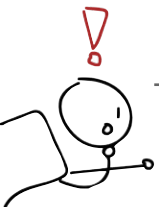
7.2.2   Values

Dash revolves around four values, describing the way a PACE coach supports an initiative. These characteristics represent the core values of coaching for corporate intrapreneurship and are based on ING's way of pursuing disruptive innovation.

Dash's core is to improve an intrapreneur's understanding of PACE. Through integration it feeds and structures all PACE offerings to make the possibilities within the design process more comprehensive. This enables intrapreneurs to choose their own design process and read relevant information when they need it, for instance when they require more information of a tool they are using. For PACE coaches, they are able to choose a PACE journey more effectively, as Dash makes it easier to find tools through filtering functions.

To encourage reflexive practice, a core value is 'co-create'. By visualising the PACE process, PACE coaches and intrapreneurs are better able to discuss its application. They can choose to use the visualized structured in a retrospective conversation or within Dash for reflexive or prospective purposes. Focused on delivering more skilled intrapreneurs and even better PACE coaches.

Fig. 30 - Dash in an inspiring creative business environment

"PACE is used as a shit storm of books all dropped on one big pile."

"You have to discuss yourself what is useful when and why. You do not want all things PACE has to offer to become a goal per se."

Desires
....
Values

PACE tools offer valuable insights to intrapreneurs by structuring their line of thought. Coaches provide these tools when they seem most appropriate as they assess the needs of an intrapreneur.

PACE tools however are only one part constituting PACE. Integration of all PACE offerings makes it easy to find the information you need as an innovator. Overcoming the pain of scattered information, integration creates one centralised place.

One place to find exactly what you are looking for, the moment you need it.

Clear communication is all about the short letter you write instead of the long one. Dash intends to reduce the elaborate PACE stories and condense it into more comprehensive information.

Not for every purpose the same communication is required. If you want to know the range of tools, you just skim over them. If you want to learn the ins and outs of something, you deep-dive and read up.

Dash changes communication based on these needs. Allowing innovators to choose their own path as they assess what they are looking for.

"I lose a lot of PACE background time explaining what PACE is."

"In the playbooks there is nothing on team development."

Innovation is not done on an island were you focus only on your own actions. It comes alive through collaboration, creating solutions that matter with a whole team.

By co-creating the design process, both PACE coaches and intrapreneurs think actively how to improve. The intrapreneur builds upon the knowledge of a PACE coach and the PACE coach gains fresh perspectives.

Dash encourages and facilitates this bond to shape a natural flow of design process reflections.

Intrapreneurs enter the accelerator to learn new skills or explore new fields of interest. The focus on disruptive innovation involves exploration and expansion of this context. PACE coaches train teams to be the best innovators they can and want to achieve the goal of making themselves obsolete.

Dash encourages intrapreneurs and PACE coaches to learn. Learn from each other through clarity of communication and gaining overview of PACE's offerings. Dash supports the transformation of innovative skills and educated the mindset PACE propagates.

7.3. Embodiment

By casting Dash into a live prototype, embodiment makes for better understanding of the offering. This paragraph discusses Dash's branding and solution design. To find the live prototype go to http://pieterlenselink.nl/Dash.html

7.3.1 Branding

Positioning
The first sentences of paragraph 7.1, describes Dash's brand/solution positioning (or see Fig. 31). This positioning describes how a brand tries to achieve a unique position by standing out, delivering something unique. To craft this positioning six elements are combined: audience, category, uniqueness and the benefits it offers, namely functional-, emotional- and self-expressive benefits (Semans, 2009, Van der Vorst, 2017). The interplay between the six elements describe the position it tries to secure and are at the core of all graphic and function design elements. Fig. 32 presents the details of Dash's positioning elements.

The origin of the name
The name 'Dash' derived from 'dashboard' as its first idea emerged by integrating intrapreneurial learnings and presenting through a dashboard. The three meanings perfectly describe the connection of the name to what Dash stands for.

Dash:
1. An act of going somewhere quickly
2. A small amount of something that is added to something else
3. A way of behaving that combines style, enthusiasm and confidence
(Oxford learner's dictionary, 2018)

It showcases speed, making innovation easier, faster and more effective. It provides just that bit of information you require, instead of everything available. Dash tries to evoke enthusiasm and confidence to innovators.

Fig. 31 -   *The elements of Dash's positioning*
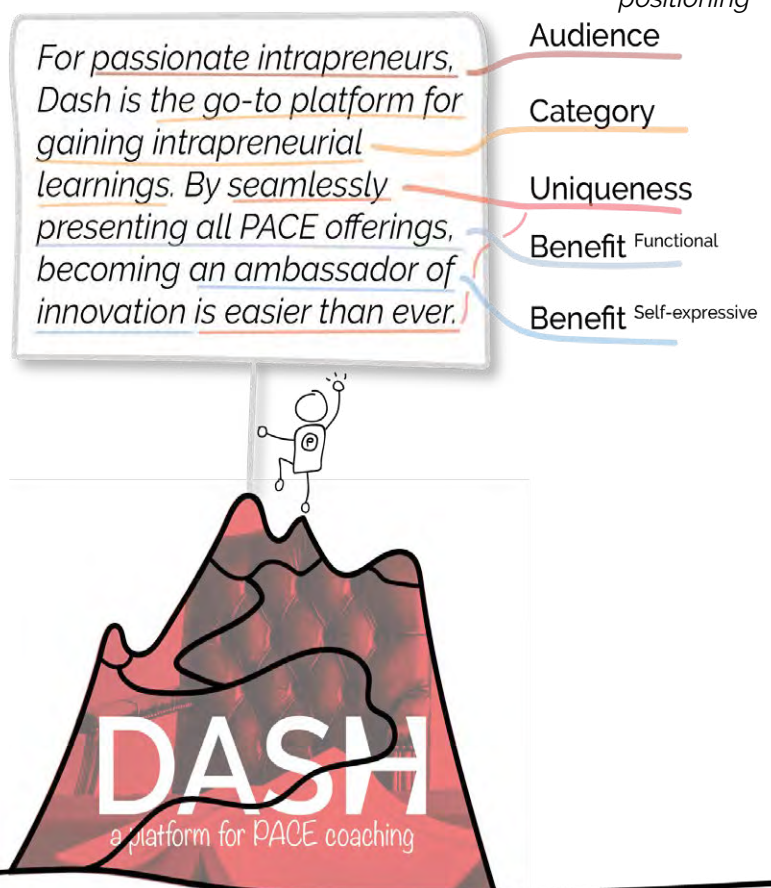
TARGET AUDIENCE:

Passionate innovators eager to gain new innovation learnings

CATEGORY

A go-to platform for innovation education

UNIQUENESS

By integrating all PACE offerings, Dash encourages reflection in a seamless way. Gaining knowledge of innovation is easier than ever.

FUNCTIONAL BENEFITS:

- Present all PACE offerings in a clear overview.
- Keep track of your innovation journey, making it easier to explore previous actions.
- Facilitate joint learning through online tutorials and by offering PACE suggestions to other intrapreneurs.

EMOTIONAL BENEFITS:

Makes intrapreneurs feel more confident by reducing the feeling of being overwhelmed by the elaborateness of PACE

SELF-EXPRESSIVE BENEFITS

By using Dash you autonomously radiate ambition, actively improving your own design process.

Fig. 32 - The details of Dash's positioning

7.3.2   The platform's design – the functions

I talked about several functions embedded within Dash, but haven't shown how it actually looks like. This paragraph shows the embodiment of several design features as I envision it through a prototype. Find the live interactive prototype here:
*http://pieterlenselink.nl/Dash.html*
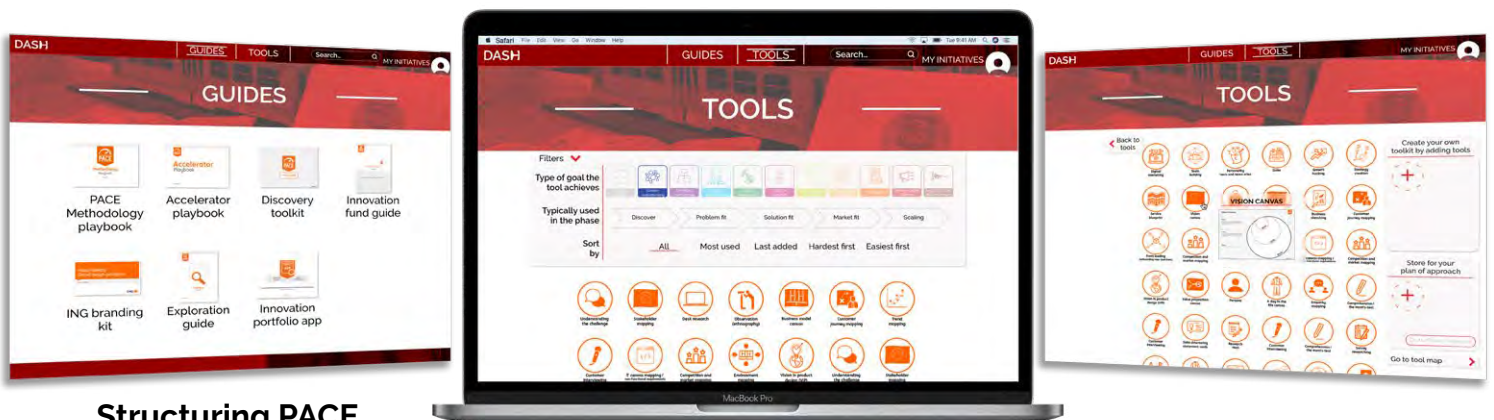
Structuring PACE

Only the *guides* relevant to you are presented. A PACE coach can see all guides, while initiatives only see the ones relevant for their case.

A visualised overview presents all tools PACE has to offer. Either use the filtering system or the search bar to find the one you need.

Export your own workshop toolkit by selecting the tools you need. All materials and explanation you need is summarized in one export.
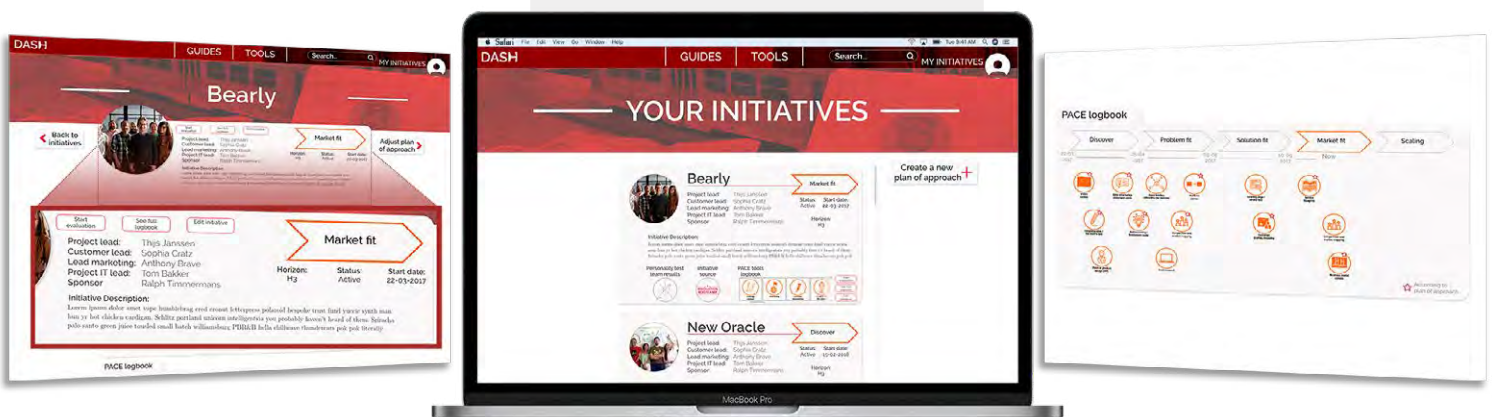
Managing the PACE journey

Initiative details present a brief overview of all initiatives you are part of as a PACE coach, sponsor or intrapreneur.

In the *initiative manager*, find a quick overview of the progress of your initiatives. Presenting only the most important information of the design process.

Explore your *PACE logbook* and see what steps you took to see it all come together. A chronological timeline presents a clear overview of the design process.
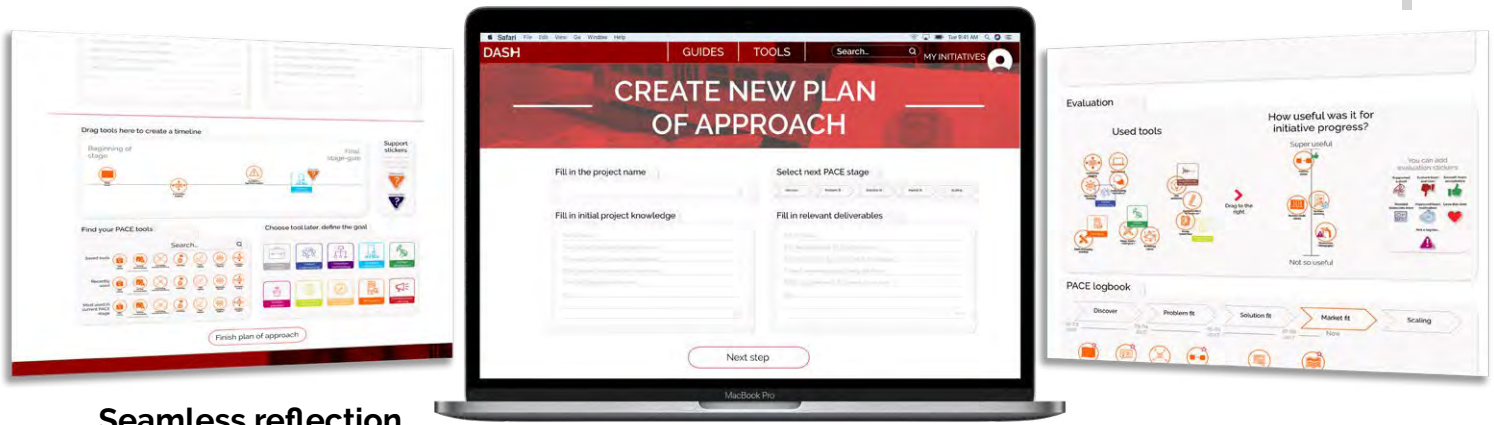
Seamless reflection

Create a *plan of approach* at the start of an initiative or PACE phase. PACE coaches propose a plan of approach to the intrapreneurs. By creating it together, intrapreneurs become part of the design process through joint reflection.

By linking PACE journeys together and analysing the PACE coach's most recent tools, Dash proposes tools to use. If the coach struggles to define a tool, tooltypes can be used to describe the goal he wants to achieve for future evaluation.

The *evaluation tool* presents the tools used and offers an easy-to-use way of reflecting on the application. Through reflection stickers (see Fig. 34), intrapreneurs and PACE coaches describe the sentiment they feel with the tools used.
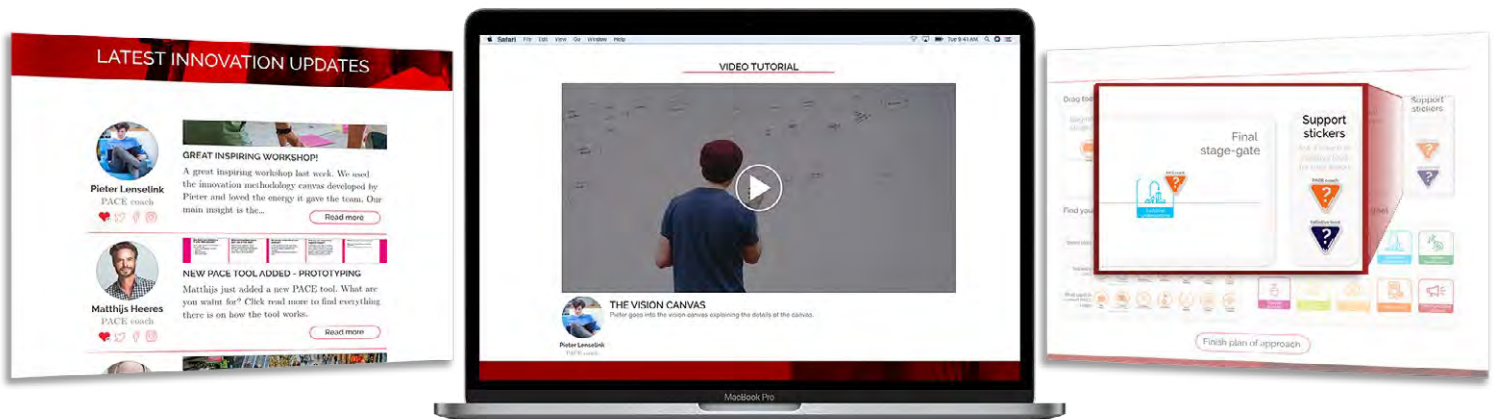
Shared intrapreneurial learnings

The *news updates* provide the latest messag and additions to PACE. Coaches and intrapreneurs share experiences by writing down their insights and learnings.

Video tutorials facilitate mutual learnings and archives. PACE coaches record short videos to present tutorials how they would use a tool or main insights from workshops.

By placing *support stickers*, PACE coaches can request help to create a plan of approach. By dragging a sticker on a tool or placing a tooltype, other innovators can place suggestions.

Fig. 33 - Dash home-page

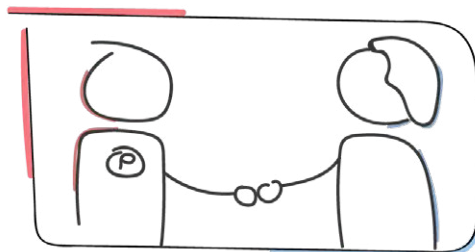Fig. 34 - Support stickers describe the sentiment felt by applying PACE.

- The solution -

7.4. User-scenario

This user-scenario showcases how Dash supports PACE coaches and intrapreneurs to become better innovators. Describing the story of the personas PACE coach Frank and the intrapreneur Daniela and how Dash supports them.

1. Meet

Frank
PACE coach

Frank and Daniela meet each other at the start of a new project.

Daniela
Novice intrapreneur

2. Prepare

Frank prepares by filling in a plan of approach for Discover and proposes the PACE process to Daniela.

Daniela explores the PACE guides autonomously and explores tools she finds interesting

Frank exports all the workshop materials for the upcoming vision canvas workshop.
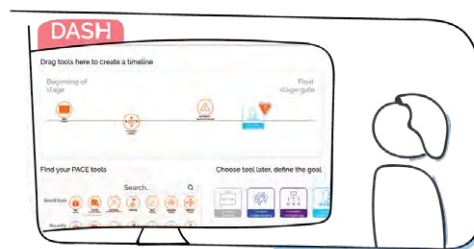
Daniela takes a look at Frank's proposed PACE process and has a look at all the suggested tools.

3. Develop

Build

The PACE journey kicks off with the vision canvas and the team defines their vision based on their knowledge of the subject.

- The solution -

Measure

Iterate

Frank looks at the PACE log and observes from practice how the team tested their assumptions.

Daniela goes into the field to validate assumptions and conduct user-tests.
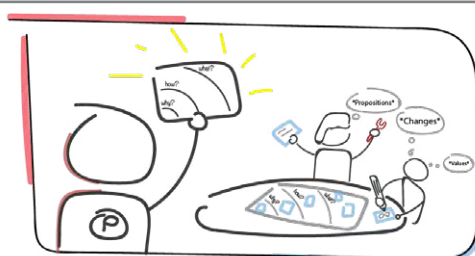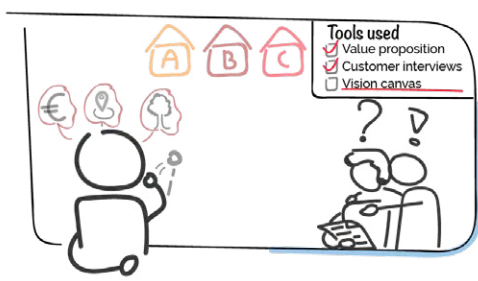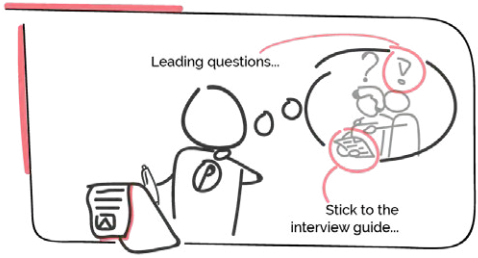
Learn

Frank writes down insights from the team's performance during user-tests.
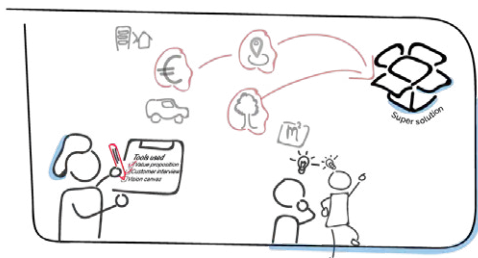
Daniela writes down all insights the team gathered and integrates them in the newly defined vision.

4. Reflect
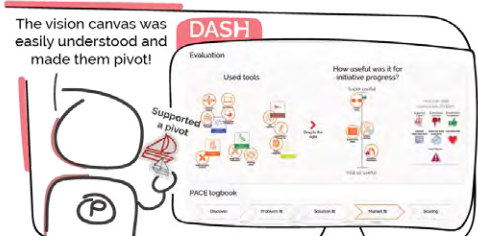
Frank deemed the vision canvas useful, scoring it on the reflection scale. He also adds a reflection sticker that it supported a pivot.

Daniels thinks the vision canvas was not useful at all. She adds the reflection sticker of it evoking team aversion.
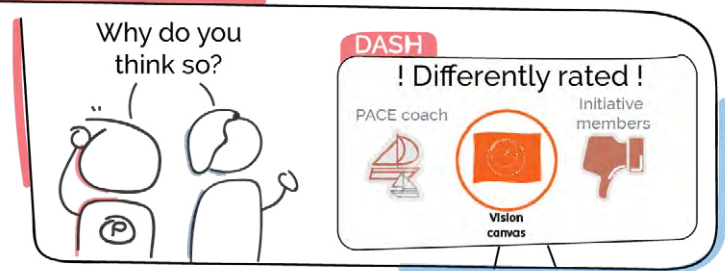
Frank and Daniela compare the reflection's results, discussing why the different perceptions occurred.

5. Be a better Innovator
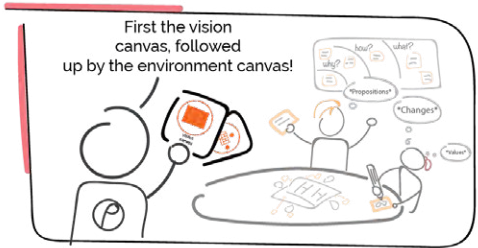
Based on the reflection, Frank decides to follow-up the vision canvas with environment mapping to better meet another team's needs.
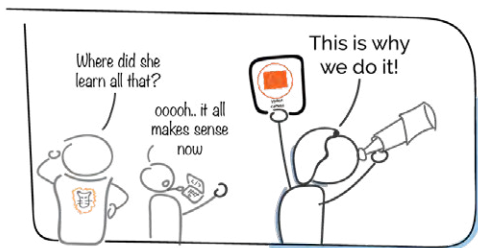
Back in the business Daniela's initiative struggles to define the project goal, Daniela proposes to use the vision canvas. She exports the materials and leads a workshop.

6. Become an innovation ambassador
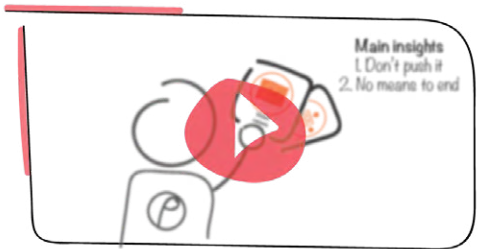
Frank shares insights from Daniela's project by recording a video tutorial.
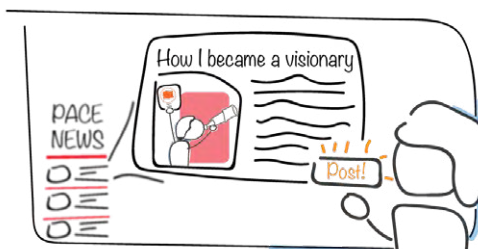
Daniela shares her innovation story within Dash's news feed and expresses how it changed her way of working.

- The solution -

7.4.1   Manager functions

For management, Dash is able to generate unique information on the application and performance of PACE. This data assesses performance of intrapreneurs and PACE coaches, but also improves innovation analytics. Making it easier to understand why initiatives need more time to develop products than PACE theory describes.
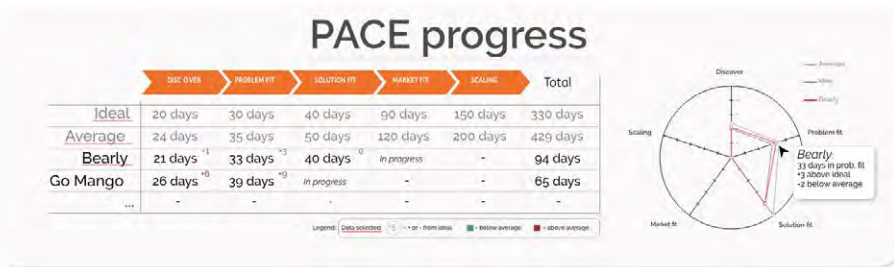
PACE effectiveness analytics
PACE progress summarizes the time required to progress through all PACE phases. Comparing it to the desired situation and initiative's averages.
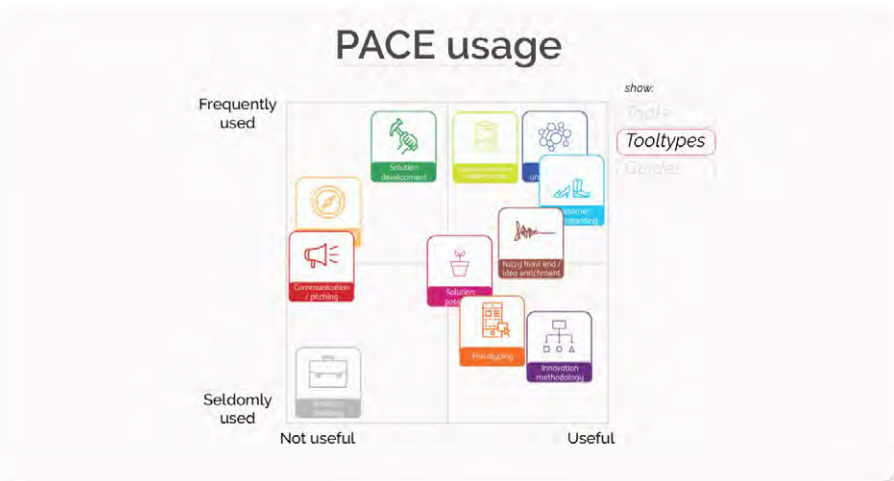
PACE application analytics
PACE usage presents the most used innovation tools and guides. Mapping its usefulness and frequency of use.
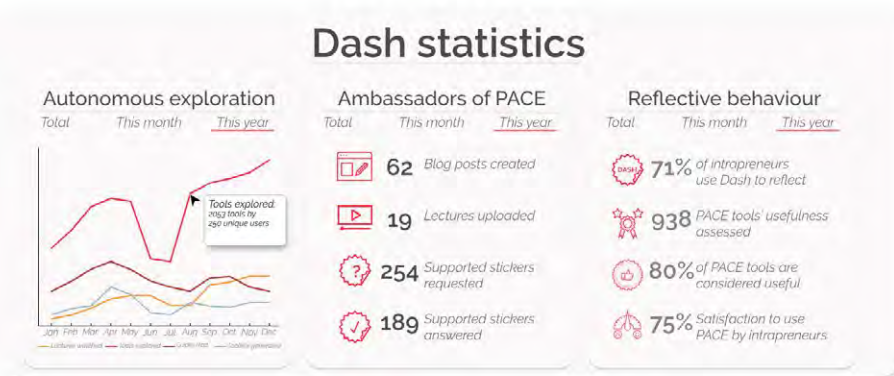
Dash performance analytics
Dash statistics presents the impact Dash achieved and degree of the PACE comprehension. This data makes measuring performance of PACE transformation more attainable and changes the metrics used to assess PACE performance.

Fig. 35 - Three functions within Dash's management dashboard.

PACE coach dashboard
Dash gathers analytics to offer the possibility of assessing individual PACE coach performance. This way specific coaching skills can be leveraged as the need arises within initiatives or situations. Based on this recommendations to improve coaching habbits can be proposed.

Fig. 36 - Vision of PACE coach Dashboard to assess their ways of coaching and performance.

PACE performance

DASH | GUIDES | TOOLS | Search... | MY INITIATIVES

Coaches

Sandra Keuvels · Vincent Mans · Daniela Marca · Kevin Yvel · Frank Blanche · Gabrielle Blanchard

Frank Blanche
Coached 2 initiatives
PACE coach since 1 mar 2018

Expertise:
PACE Accelerator

Intrapreneur's review

Most frequent evaluation stickers

Supported a pivot · Evoked team aversion · Needed elaborate intro · Improved team motivation

Average tools usefulness score

Average PACE coach score · Frank
Not useful — Useful

Wordcloud

High energy · Agile focus · Reliable · Retrospectives · Method focussed · Team dynamics

PACE logs

Bearly
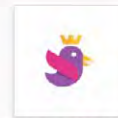
Birdeye view real estate

Coaching profile

Frequently used

Solution development · Unknown · Customer understanding · Fuzzy front end / idea enrichment · Communication / pitching · Solution potential · Prototyping · Innovation methodology

Seldomly used

Not useful — Useful

show:
Tools
Tooltypes
Guides

8

Evaluation

In order to evaluate Dash's performance, I conduct several validation interviews focusing on Dash's desirability, feasibility and viability.

After this I present a discussion of this thesis' construct, conclusions and a personal reflection of my learnings.

8.1. Validation

Now that I have designed the looks, feels and functions of Dash, I validate this through user tests. I assess whether it meets expectations and desires of PACE coaches (desirability), whether it can be realised into a tangible form (feasibility) and if it can be sustained by delivering continuous value to business (viability) (Calabretta, Gemser & Karpen, 2016).

8.1.1 Desirability – Do they want it?

Based on the mom's test (Fitzpatrick, 2013), Dash's desirability is tested with four PACE coaches. The focus of these tests is led by the simple question: "*Would Dash be used?*". I investigated the most frequent pains and causes of ineffective innovation (i.e. gap between PACE-theory and -practice, see interview guide in Appendix I). The data retrieved helps to assume whether a PACE coach's pains, being the first adopter, meets Dash's promised functions.

The cause of less-effective innovation
The main cause of the gap between PACE theory and -practice is the linearity of PACE (P09, P18, P15, P19). The current description does not allow for sufficient embracing of the creative process: "*for more complex initiatives or problems it takes longer*" (P18). Consequently, (new) PACE coaches are less inclined to follow the PACE theory, as they'd rather choose their own ways of approaching the design process. "*You can't stick to the playbook, it is just used to make tangible what the idea behind it is*" (P15). Thus, the problem of PACE's elaborateness relates to the acceptance and understanding of the innovation method for (new) coaches and intrapreneurs.

Achieving transformation of intrapreneurial learnings
Discussing the extent to which intrapreneurial transformation is achieved, PACE coaches are quite straightforward: "*you can't assume that they know how to innovate after six weeks of PACE*" (P17). What is achieved however, is the creation of "f*oundations where (intrapreneurs) dare to make mistakes*" (P15), leading to a slight mindset change for intrapreneurs after joining the accelerator. To asses this performance, there is no structured approach except for the gut feeling of PACE coaches and accelerator management.

Within the accelerator, the practice of hiring external professionals to develop disruptive solutions, showcases the gap between accelerator- practice and PACE- everyday. PACE's intended mission of transformation can only be achieved by educating intrapreneurs, not by teaching innovation to external professionals (P15).

The struggle of reflection
"*It differs per PACE coach whether they use retrospectives or not*" (P17). Based on the literature study, this degree of reflexive practice has large implications on intrapreneurial learnings. Reactions from intrapreneurs consider reflexive practice as a "*deviation of focus*" (P15), they rather focus on project progress.

Currently, "*bi-weekly retrospectives*" (P17-P19) and "*fixer-sessions*" (P19) allow intrapreneurs

to share insights and feedback. These moments are not met with great enthusiasm as it "*is just another thing they must commit to and they have better things to focus on*" (P19). Several PACE coaches "*think they (intrapreneurs) should do it (reflection) more structured*" (P15), because there is no structured way to reflect on the ways of applying PACE.

Concluding – The problem should be solved.
Based on the previous three paragraphs, the value Dash delivers meets the desire of PACE coaches to increase comprehension of the design process. Dash provides an overview of all PACE offerings in a visually appealing way, improving comprehension of the method. For management, Dash tracks performance of transformational impact and the initiative profiling functions seem promising for insights into the gap between theory and practice.

Dash's value for intrapreneurs is a more challenging case to make. The desire to transform skills through reflection is largely influence by the intrapreneurs' eagerness to learn. The reactions from PACE coaches provide sufficient insights to explore this desire further and test the effect Dash has on intrapreneurs as well.

New PACE coaches do not know the background of PACE and how it was developed. Thus, they would rather stick to the knowledge they are most familiar with (P15, P19). Dash's approach to teaching PACE's construct is similar to the way it was developed originally (P19). By logging all tools and providing an overview of all its offerings, PACE coaches slowly developed an elaborate understanding of what is currently called PACE. Dash mimics this and offers the same explorative experience for new PACE coaches.

8.1.2 Feasibility – Can it be built?

To assess the feasibility, I interviewed an experienced UI/UX designer (P20), all quotes come from this interview. P20 indicated ING has the in-house capabilities to continue development up until MVP 0.2 (clickable platform prototype). Until then, the goal is to test with users, focussing on front-end development. He referred to this as the "static part" with guides and tools. For the first MVP, the management analytics and drag-and-drop functions should not be the focus. The effort to develop these does not weigh up to the requirements of this stage's user-tests.

Going from MVP 0.2 to 1.0, back-end development starts. The focus here is on the more advanced functions like "*user-management, log-in, database management, permissions*". The hardest visual function to create is by far the drag-and-drop evaluation stickers "*it is quite a challenge to realise in the browser*". Another time-intensive task is the creation of the graphs and data-visualisation tools for measuring PACE application and performance. "*(This) requires a lot of back-end development... I think up to 200% more time is needed*" compared to the front-end.

The people
To realise front-end development, developers will require approximately two weeks of full-time development for MVP 0.2. The start would be built in the well-known WordPress content manager.

Back-end development involves coding from scratch. It depends on the in-house availability of developers whether an external professional should be hired for this. This developer is mainly required for the step towards an MVP 1.0 (working live platform), for the more complicated functions.

Concluding, yes we can!
Dash can be built from a technological perspective and ING's current capabilities up until a clickable platform prototype. To start front-end development P20 told me: "*I think your clickable demo is a perfect start*" (see http://pieterlenselink.nl/Dash.html).

Figure: Roadmap towards realising Dash, structured along the PACE process phases.

Discover (2 weeks) — **Problem fit** (3 weeks) — **Solution fit** (5 weeks) — **Market fit** (12 weeks) — **Scaling** (24 weeks)

Transfer project information

Top row: Budget assigned, new team chosen · Value Dash 1.0 assessed · MVP 0.1, tested basic functions (*The first step*) · Working Dash 2.0 (MVP 0.2) · Pilots in PACE accelerator · Live, validated MVP 1.0 · Rolled out in all PACE tracks

Bottom row: Explored thesis' context · Validated customer need · Validated MVP 0.2 and customer need · Measure business case performance · Dream: start roll out to the world — ING as the thought leader in corporate innovation

Go-/no-go 1 — Dash is promising, start development
Go-/no-go 2 — Go to prototype (MVP 0.2)
Go-/no-go 3 — Go to working MVP 1.0
Go-/no-go 4 — Roll out across PACE track
Go-/no-go 5

8.1.3 Viability – Should it be built?

This paragraph consists of a roadmap towards realising Dash, the first development step required and KPI's to measure its performance at stage-gates.

The long-term roadmap
The roadmap in Fig. 37 presents the development of Dash based on the PACE process. The most important step in this development is the journey from this thesis up until the MVP 0.1. Assuming all stage-gates are passed, I estimate a total of 46 development weeks to go from installing a new team to launching the live solution. For more details on the roadmap, see Appendix I.

The first step:
Perhaps the most important step towards development is the first phase towards an MVP 0.1. From this test many conditions and project requirements emerge, providing valuable user-insights into prioritised functions. To create the first MVP, the basic construct should test the promise Dash is able to deliver. Based on the 'Wizard of Oz' innovation tool (ING, 2016b), the team is able to bluff the functionalities and conduct user-tests with a manual prototype, changing variables behind the scenes. The users think Dash generates guides or recommends tools, but in fact it is a PACE coach making recommendations by providing all information to users.

The first user-tests should focus on the integrated overview of PACE tools and guides. By building a WordPress-based MVP 0.1, the tools selection function can be tested. Gaining valuable insights without requiring heavy-duty development and large budget allocation. These MVP 0.1 tests continue until data (dis) proves Dash's support towards more effective innovation.

Fig. 37 - Long-term roadmap towards Dash implementation

Concluding, measuring Dash's impact on effective innovation
The choice to continue development of Dash is not mine to take. However, what I can offer is a recommendation on how to approach results from the first tests. The current challenge of measuring PACE performance is the absence of a data-driven approach with pre-defined measurable KPI's (P17, P18, P19, P15, P21).

Current practice is measured through "*vanity*" (P15), a PACE coach or innovation managements' gut feeling. I recommend A/B testing to measure Dash's impact through a control and validation group within the PACE accelerator.

To assess performance of the first MVP, Fig. 38 suggests six KPIs within the areas of: intrapreneurial transformation, impact on innovators and effective innovation.
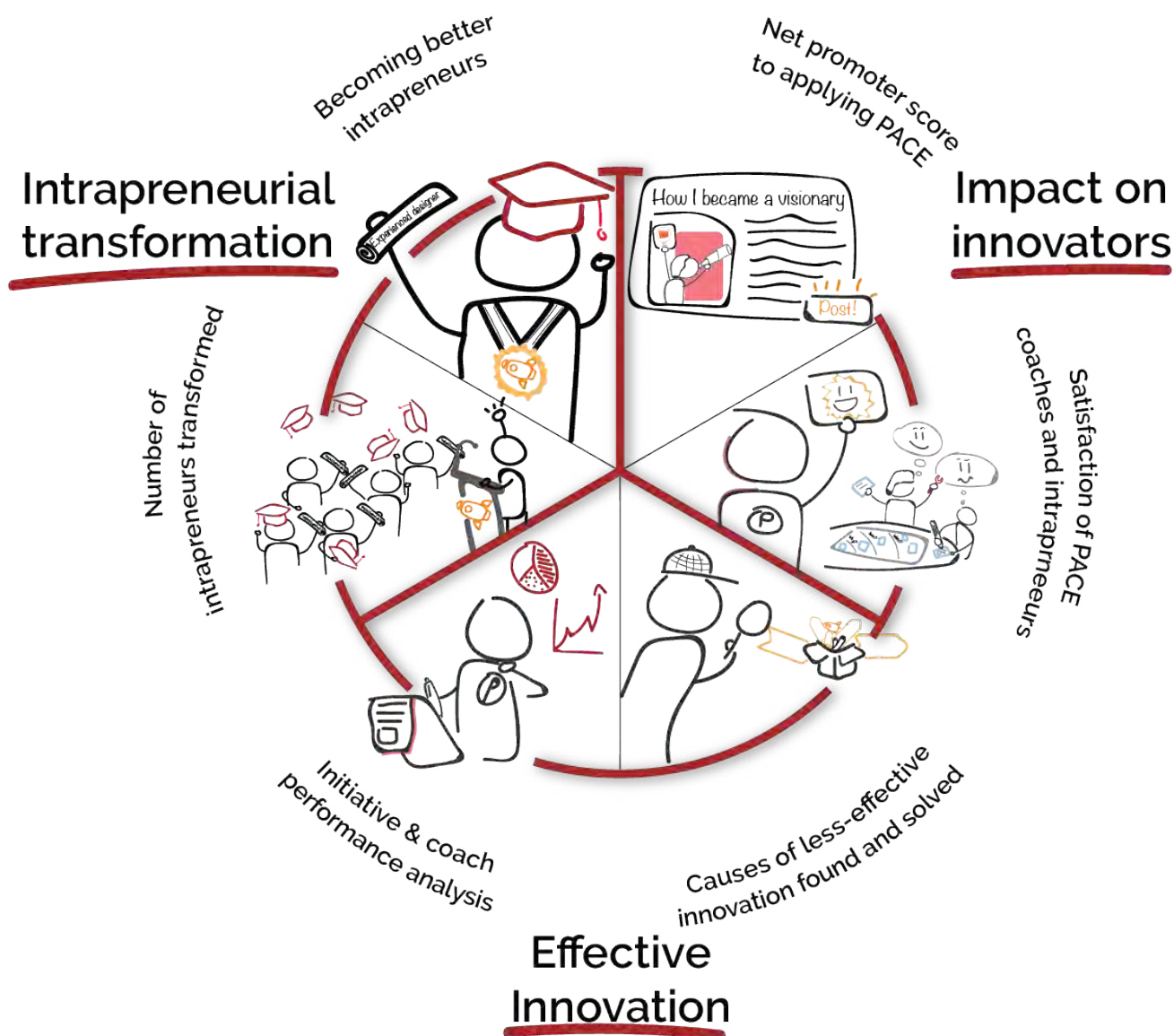

Fig. 38 - Within the areas of intrapreneurial transformation, impact on innovators and effective innovation, I propose six KPI's to assess Dash's performance.

8.2. Discussion

This thesis investigated the cause of ineffective innovation through a case-study within ING's PACE accelerator. Exploring the effect of elaborate innovation documentation on intrapreneurial practice. It has been established that in order to make innovative practice successful, a balance must be struck between intrapreneurial skills, a structured innovation process and a user-centred approach (Griffin et al., 2009). Although PACE proofs successful at developing a multitude of feasible disruptive solutions, there is too little emphasis on the development of intrapreneurial skills.

Literature shows that these skills are vital for solving complex design problems faced within these accelerators. To solve and design for these problems, intrapreneurs transition between five design activities. Through constant reflection on practice, the experienced intrapreneurs transition between these design activities much more frequently than the novice. In line with a study of novice and experienced design processes, novice designers are less likely to produce quality designs and require more time to decompose a problem (Cross, 2004). This study indicates that the difference in expertise holds serious implications towards the effectiveness of innovation. In order to overcome this ineffectiveness, more emphasis on intrapreneurial skill development should be placed during innovation coaching.

To avoid the gamble on an intrapreneur's expertise and reduce ambiguity, elaborate innovation documentation forms the base of ING's PACE accelerator. All desirability tests with PACE coaches however, indicate that such documentation is considered to be too linear. There is too strict a focus on developing solutions to pass pre-defined stage-gate decision moments so that it does not resonate with the reality of accelerator practice. This linear description reduces the need for intrapreneurs to justify their ways and fails to take into account the effect of emerging insights. More emphasis on providing overview of the design process seems promising for intrapreneurs to increase understanding.

Currently, teaching PACE's mindset takes a long time. By reading how innovation works, intrapreneurs employ little reflection, which limits intrapreneurs to develop explicit skills from tacit knowledge. To enable understanding of innovation, intrapreneurs need to become better at knowing when to transition between their design activities. This need can be met through reflexive practice, evoking a higher level of cognition towards the design process.

PACE and all its documentation play a vital role in the successful practice of disruptive innovation at ING. Reflexive practice can be enabled by designing a new way of educating PACE. A higher level of cognition helps intrapreneurs to become better at justifying their design process. This system should allow for autonomous exploration of PACE's offerings, creating a focus on an intrapreneur's expertise and to personalising PACE education. Shifting PACE from the current one size fits all practice towards personalised experience to evoke a future proof mindset for innovation.

8.3.   Concluding

Innovation is not easy for all innovators and not every initiative is the same. With the growing body of innovation tools, it keeps getting harder to understand what needs to happen within the design process in order to achieve success. Currently, innovation at ING's PACE accelerator is presented through elaborate documentation. These representations affect an overview of the methodology for innovators and make it hard to realise intrapreneurial transformation.

To solve this problem, I propose the development of the intrapreneurial learnings platform Dash. This platform supports passionate intrapreneurs to become better innovators after joining the accelerator. Its core values are to integrate all PACE offerings, establish communication of the design process, shape a co-creative way of planning PACE application and to educate intrapreneurs to become autonomous ambassadors of innovation.

Looking back at the design challenge, Dash proposes a more personalised way of applying PACE. By providing overview it supports intrapreneurs to develop PACE knowledge in a structured way. Based on Von Hippel's recommendations for effective toolkits, the design enhances PACE's content in a personalised way (see Appendix I).

Concluding, this thesis offers a recommendation on thow ING should initiate development through a 'Wizard of Oz' experiment. A short test period to should reveal whether Dash
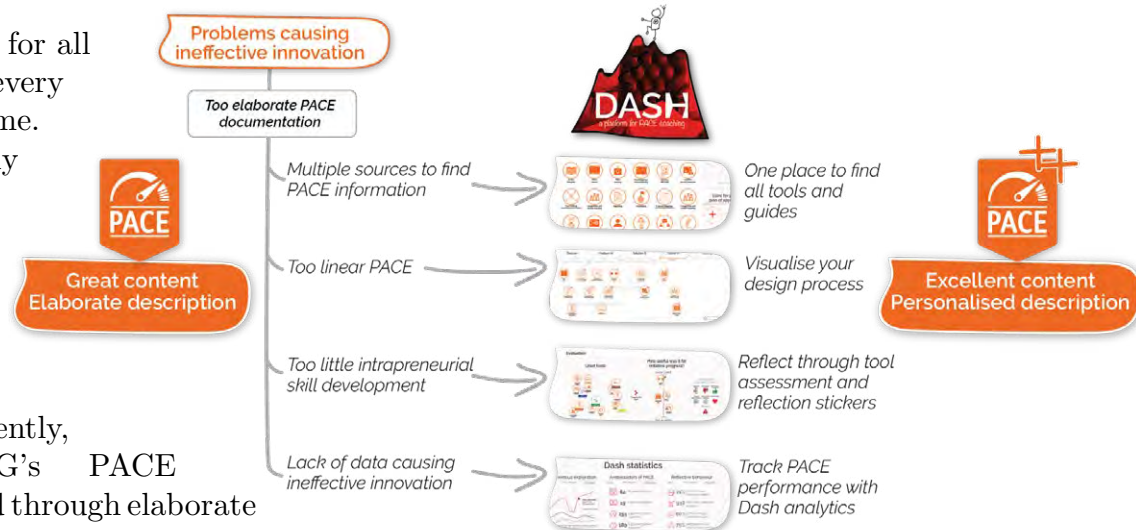
Fig. 39 -   *How Dash's functions relate to causes of elaborateness*

delivers on the promise of making innovation more effective and solves the problem of PACE being too elaborate.

8.3.1   Further research

This thesis focusses on the corporate accelerator practice of ING's case. To explore these ways of innovating further, comparable cases should be investigated causing ineffective innovation in corporate accelerators. These cases are vital for further development if the dream (see 8.1.3) of scaling Dash towards a world-wide innovation platform is to be realised. Within ING I suggest to explore the differences between ways of applying PACE. Comparing the accelerator track to the PACE-everyday and up-scaling programs.

Also, further research allows to explore the relation between reflection and the effectiveness of innovation in general. Many studies go into the role of expertise and how this expertise is developed or measured. However, there is too little focus how reflexive practice brings value to allow for innovation to flourish.

8.4. Personal reflections

Starting this project, I was convinced that I would show ING how innovation works, a traditional bank and innovation… piece of cake. It was not for long until I realised the opposite was true. Their way of driving innovation is truly astonishing, and I struggled to define a problem to solve.

This struggle to solve an actual problem is also described by Kees Dorst (2006): "*the very notion of "design problem" becomes extremely problematic. If the "design problem" in general is not knowable at any specific point in the design process*". These design problems were far from knowable during the earliest graduation months. Consequently, I resorted to the novice designer's ways of trial-and-error based experiments, trying various hypotheses, all but one failing. You could say that finding a cause of ineffective innovation such as PACE's elaborateness was luck. The problem was right under my nose, within the data I received, but seeing it required a great number of iterations and further testing.
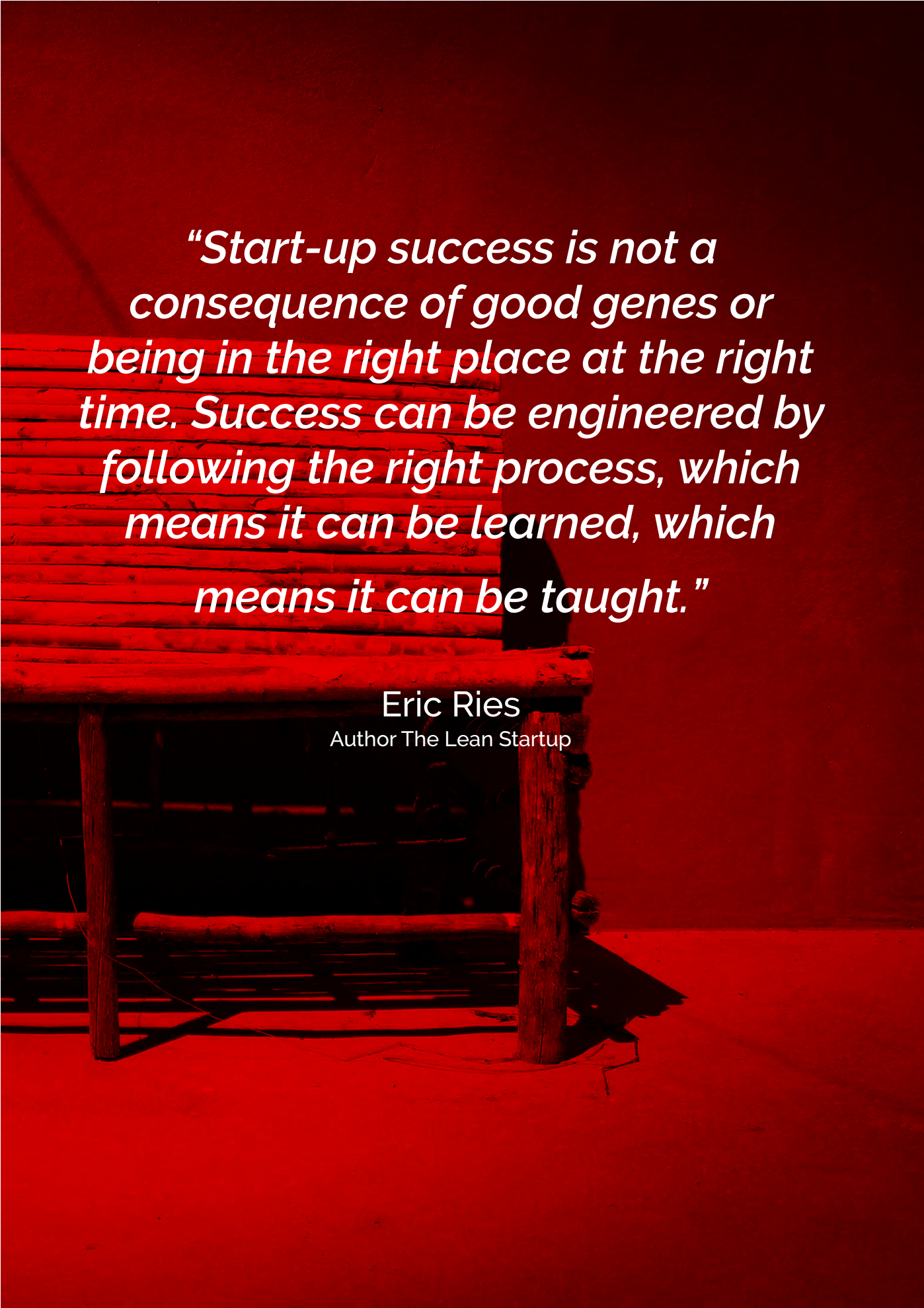
Ironically, the notion of effective innovation is not just a part of my problem statement, but very much a theme of my graduation project. In the beginning I was obsessed with going forward and continuing development at all cost in order to meet the deadline. Finally, the value of reflection became apparent to me as I was able to assess whether my process had been effective. I decided to no longer pursue the two solution directions of design for planning and -understanding. During tests with PACE coaches I recognised the failure of both solutions, but it took a while to kill my darlings and decide to pivot. This was the best decision I made during my thesis.

I know now that I should invest in developing my skills in the transition between analysis and problem definition. I tend to keep looking for more and more information, until it is too late and repair work needs to be done, losing precious time.

This project has taught me that I have the skills to develop something from uncertain and complex situations in a data-driven manner. For me, design is not only about following my intuitions and to keep going forward. It is about bridging data and insights in a customer-driven manner, allowing creativity to surge. This surge however I found the hardest part. Recognising the moment to transition from literature study to idea generation and back.

Concluding, I am grateful for the experience of this graduation thesis and the valuable lessons I have learned.

"Start-up success is not a consequence of good genes or being in the right place at the right time. Success can be engineered by following the right process, which means it can be learned, which means it can be taught."

Eric Ries
Author The Lean Startup

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a platform for PACE coaching