

Reflecto.co

A gamified peer review workshop for the early stage technology startups

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01 Introduction



The research is aiming to grow a user centric mindset for the early stage technology startups and the support organisations to discover a more design-driven idea development, which can contribute to bring innovation into our future life. The key area of research is the UK technology startup ecosystem, startup mentoring programmes, collaborative organisational culture in rapid technology development environment.

Startup journey is tough because not many of them can have an opportunity to get the professional mentoring from the support organisations. This is because the startup ecosystem has been focusing on finding the startups who can quickly become successful. The main challenge for the startups and support organisation is not giving time to empathise with the end-users and jumping to build products or services.

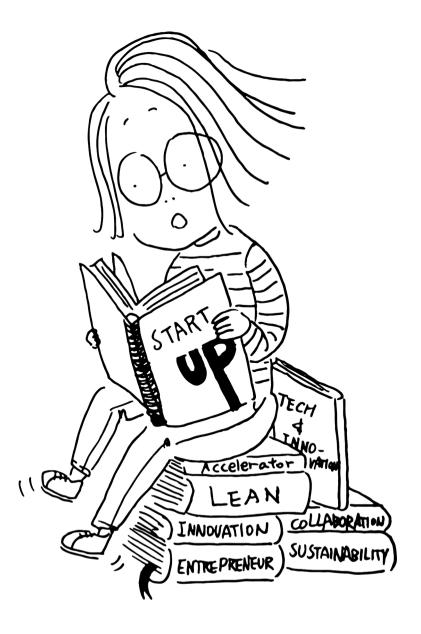
This research will question what is the key activities to engage the startups to learn about user centred mindset during their business uncertainty. Also, finding an opportunity of effective coaching service for the support organisations to engage their startup partners' sustainably. In this research, Digital Catapult has been partnered with the research to explore new opportunities for supporting technology startups and to find effective management for their business.

The research conducted by the multiple methodologies combination in order to design the actionable solution. Fundamentally user centred design led the research direction, Lean startup and Agile methodologies followed to reduce the risk of misleading the project and manage the constraints.

Working with user centred design has led the research to discover business opportunities, where the research outcome has became a startup during its journey. The research outcome has a high value of multiple end users and stakeholders within the startup ecosystem, which proves that the design impacts users and businesses.

02 Background

- 2.1 Startup, who are they?
- 2.2 Problem
- 2.3 Solution
- 2.4 Methodology
- 2.5 Research process



2.1 Startups, who are they?

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A startup is a human institution designed to deliver a new product or service under conditions of extreme uncertainty.

-Eric Ries

Around the 1800s, French economist J.B Say who first coined the term "entrepreneur" said, "The entrepreneur shifts economic resources out of an area of lower and into an area of higher productivity and greater yield (The Economist, 2009)". Also, the new entrepreneurs who start their own business alone or in a small team, Drucker said: "needs to learn how to be an entrepreneur and how to innovate, but above all, it needs to learn how to manage (Drucker, 2015)". Therefore, in order to guide the entrepreneurs to innovate, Eric Ries suggested three fundamental activities, build, measure, and learn (Rise, 2011), and now we call this as "Lean startup" methodology.

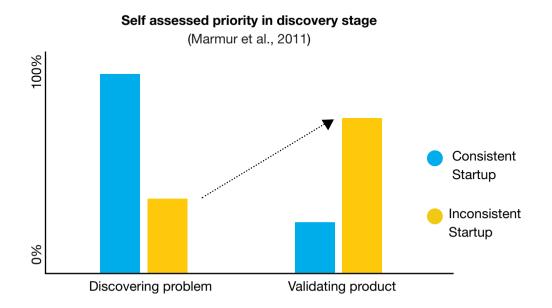
In the UK, during the last five years, the tech startups has shown outstanding growth. 392,627 technology startup has been registered in last five years which is 30% of the overall new business registration in the UK (Technology Startups, 2018). Accordingly, the UK government believes the potential of technology startups and has decided to give additional funding £2.5bn in 2018 (GOV.UK, 2018). However, more than 90% of startups will fail (Startup Genome, 2011). Why is this happening?



Startups are failing massively, because of misusing the Lean startup methodology and missing the empathy.

In 2018, 42% of startups think that 'No market need' is the main reason why they fail (CB Insight Research, 2018). In order to prevent the failures, the Lean startup is a really good methodology to build the business for the startups based on validating the user needs across the business development (Ries, 2011). However, Pinheiro (2014) argued that Lean startup methodology "lacked empathy-building and co-design practices, the two main ingredients to orchestrating services that are more human, sustainable and adapted to survival in today's economy". It showed the different objective of using a Lean approach. Lean startup invented for validating the user needs faster, but how is it possible to miss the empathy?

2.2 Problem



Startups are not discovering the critical problems to solve.

The product validation has been priotiese as the highest priority for the startups who has higher risk of failing later (Marmur et al., 2011).

Although the startups try to lead their business independently, as the startup founders begin establishing their startups alone, it is unavoidable to make some mistakes during the journey. Therefore, the support organisations such as, incubators and accelerators are providing mentoring services (Hathaway, 2018).

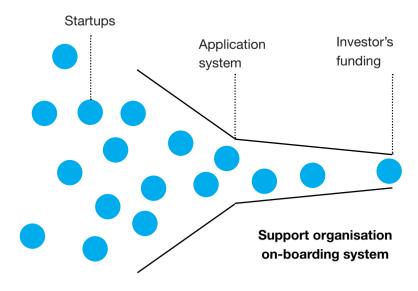
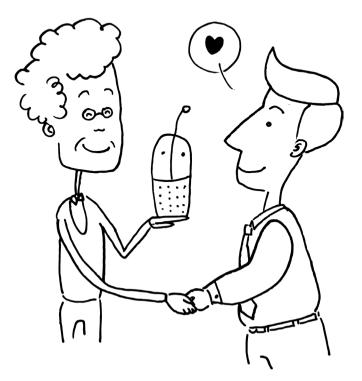


Image. Inspired by 'Open innovation' (Chesbrough, 2003)

Incubator, Accelerators, They're willing to give help, but they can't rescue all of startups

The support organisations taking an important role to help the startups to grow successfully. However, the support organisations have limited resources. They have a application system to manage the volume of startups who need help. But then, on average, 3 times the amount of startups are experiencing rejection when applying for a place on an incubator or accelerator programme (Cannon, 2018).

How can the startups independently look back on the reasons for being rejected, and to overcome their weaknesses? The research will illustrate the relationship between the startups and the support organisations to clarify their pains and develop a solution to design a better experience for both of them.



Main actors who need the most help?

The project takes place in London. The two target user groups were categorised to explore the startup mentoring journey.

The end user = Startups

The technology startup founders who are based in the UK, who work on their business idea as a part-time or full-time to launch their idea. The founders who have work experience in the technology sector or a specific industry, and hasn't had an prior experience of building a startup company on their own.

The supporters = Startup support organisations

The support organisations like an incubator and accelerator are the key supporters, who provide mentoring, networks, facilities to the startups.



Image. Digital Catapult XD team social day

The research partner = Digital Catapult

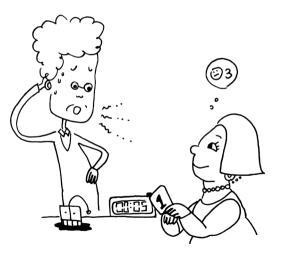
Digital Catapult partnered with the research project. Digital Catapult is a UK technology innovation centre, which runs accelerator programmes to support advanced technology startups (Digital Catapult, n.d.). In order to continuously engage with the startups and other stakeholders, the programme is interested in exploring new activities. Therefore, as a partner, Digital Catapult gave access to engage with their internal staff and startup cohorts for in-depth ethnographic observations. Especially, Digital Catapult's Experience Design (XD) team to provide regular meetings to follow up with the project's progress. Additionally, at the end of the project, Digital Catapult collaborated in a Sprint with their multiple teams and startups to validate the idea's scaling potential.

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2.3 Solution

Reflecto.co is the gamified peer to peer review workshop for early stage technology startups who can visit the fundamental user-centred research questions and learn from their peers answers through the card game questions.





1. Meet the dynamics

Finding like-minded startups who have different background, knowledge, and experience.

2. Reflection

Asking and answering the fundamental questions. Learning from the game partner's answers.

The service makes the founder reflect on their idea by answering critical questions and learning the user centricity. Additionally, for the support organisation begins to build a strong relationship with various stage startups who can become a potential cohort of their incubator or accelerator programmes in future.



3. Visioning

Planning the next steps to improve the answers and business ideas. Recording the card game score and inviting the game partners.

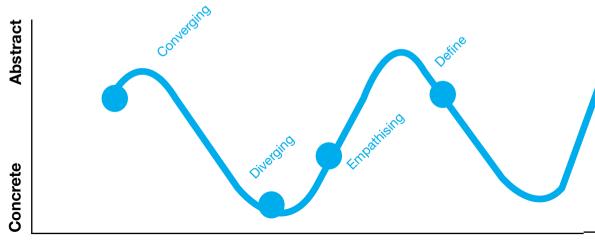


4. Monitoring

Analysing the progress of business development and revisit the card game scores to assess the direction.

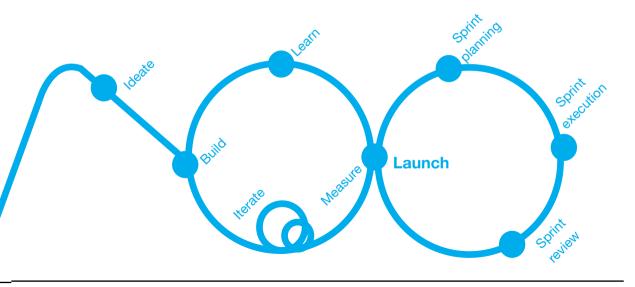
2.4 Methodology

The main methodology of the research is based on user centred design. However, for achieving two goals of the project, the other methodologies need to combine together. Firstly, the Lean startup and Agile methodologies used in order to deliver an actionable solution to fit in with the university final project schedule. Secondly, iterate the service based on startups and stakeholders needs immediately.



Exploring: Discover problems

At the beginning of the project, ethnographic research and desk research conducted to generate the findings and to narrow down the scoping area of the research. But also, to capture new opportunities outside of the hypothesis, the startups interview, co-discover activity, and user testing conducted through the entire project timeline. Image - Inspired by Gartner's Design thinking, Lean startup and Agile combination (Blosch, Osmond and Norton, 2016)



Doing: Lean Startup

Growing: Agile

The lean startup methodology adopted in developing the idea and validating the service value. Contextual interviews and user testing were planned to iterate the prototypes further.

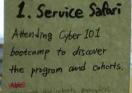
Later, Agile methodology used to implement a Sprint co-creation sessions for validating the scale model. The feedback from the startups and reflection meetings with the support organisations became a learning to improve the quality of new service journey.

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2.5 Research process

The project was divided in 4 phases: Exploring, Doing, Launch and Growing. The assumptions were listed out before planning the activities, and also, at the end of each phase a reflection on what was done to check which assumptions were validated or not.

Image. Visualising the project journey at LCC



4. Service Sofari & Contextual Externices In order to validate MIG report path point, utsited Google Campus Storby School, particular mene

5. User journey map

\$ Co-creation

Asked to the DC cohorts

for pointing their business

stage The spetched Jour Dey

map to find the average.

9. Client Interview Discovering the ideal program execution process with the client.

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8. User Interview

During Augmenter UX matter class, took interviews from cohorts to allect their pumpoint & Journey map.

9. client Email Interview

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of program sciccess was

difficult in the previous interview (no. 1) So took it

again in Email (G. duc)

suprove that the extents stages are all different and shall term. More Half of term are not fearling with 1 6. Lo-fi pr Creating a lo-fi to collect startup In particular, # Rive and Reflection no

2. Desk research

Collecting Digital Catopult Accelerator program structure, Peports, reading *ML/Al* Sortup articles to understand the context.

Pinlat know where to start (2)

3. Competitor review

Comparing the program agenda, supports, candidats online application experience

Faunt different plustions and scoring criteria it each organisation

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Introducing the new service idea to the potential stakeholders has been an everyday life routine since the service prototype became usable. The experience of delivering the service to the startups and support organisations was part of participatory design activity. It was part of the research, but also became a new business opportunity. Resulting in the project being able to experience the startup journey.

18. Potential chant 19. Client Feelbo Interien (OMA) Design prompts helping the startups teel more contrable. 1 111 Regarding the idea concept. A DECEMBER 1231 very early stage startup community found as a promiting Intensated in monistering the interaction (network) of Gunders who never mot before dient. Contacted to EF (DME+MY) (Declan) M Testing t. Prototype Testing. 30th Aug. Test the cards e fan & User testing 11th Ang. Test the as with with experienced startup he (very early stage) founder Counder. How the reflection To support the Theo, implement and to see how they value the user test with 10-ft prototype. affect to the next step of Q's and A's, observe the Asked to DC for reviewing the Gunders tommerow. the questions on the carls. Note He struggled to but use reaction. Note (Organisational 150 Insight Culture) +. Expert Q&A + User Interview t. Bosk Poland workshop startups Designing the system Attended Alan Twing 3 Beliefs Montromed the balance Behavior Institute AI startup event. of front/backstage \$ minded 6tw work \$ life. to exploin details for - Importance of co-tunders which was also often Structures Org " USOF - COMBIZ Solution DC console found at UK hubs. altive ractice - " Actuations with the Note: Constitue the data introstu (struggle to Find TIME) - (PM priority) other stakehoklers Interior Extenior detasets to callect Right La



03 Exploring

3.1 Learning

1) Expert interview

2) Assumptions

3.2 Empathising

- 1) Service safari
- 2) Contextual interview
- 3) Co-discovery activity
- 4) Experts email interview

3.3 Define

- 1) Insights
- 2) Research question
- 3) Conceptual ideation
- 4) Scoping

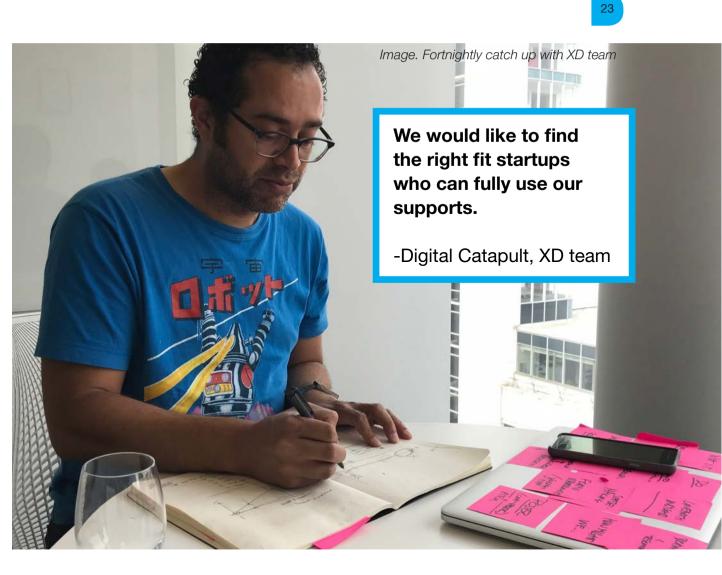


3.1 Learning

1) Experts interview

"What types of services, facilities and activities would you design to keep companies engaged and help create a new market where there isn't one today?"

- Digital Catapult's initial question



At the beginning of the research, understanding the needs of the startup ecosystem was crucial. Therefore, the first meeting was organised with the research partner, Digital Catapult. Digital Catapult expressed initial interest for optimising the accelerator programmes.

One of the interesting point was that the programmes are focusing on only specific startup stages. This was similar for the other competitor support organisations. They are clarifying that what stage startups are 'the right fit' for their programmes.

The experts explained the reason for searching for the right fit startups. This is because the complexity of involving multiple teams and shareholders to coordinate the programmes. Therefore, the support organisations want to find the right people who can bring the most impactful results at the end of their programme period.

In order to save the time for screening the right fit startups, the application system and marking criteria informed to the startups through the support organisation's websites.

Findings:

- The programme managers believe that the candidates are aware of the right fit through the marking criteria and application questionnaires.

- The managers presume that the startups have MVPs and validate their MVPs with the end users.

- The support organisations encourage the startups to apply again when they are rejected, however rejected startups don't get any additional education or mentoring session to improve their weaknesses.

The support organisations are interested in the new activities to engage their cohorts, however don't have much resources to discover.
Also, planning new activities need to go through other teams and shareholders if it is needed.

- Application system flowchart showed that the declined startups don't have the additional guidance to improve their application to become stronger. (more details in the Appendix 3.1)

2) Assumptions



"The cohorts having the right level mentoring from the support organisations?"

"What about the rejected startups?"

The Learning phase brought more questions which can be answered by the startups. Therefore the research planned activities with the startups to clarify their needs and current barriers.

Assumptions:

- The application screening system could make vulnerable startup segment who do not know the next steps to improve their business idea after being declined by the programme managers.

- The applications could be written based on the startup's assumptions, not validated in the market and the end users.

- The other support organisation's could have a different startup stage preferences and program support.



3.2 Empathising

- 1) Service safari
- 2) Co-discovery activity
- 3) Experts email interview

"Are we fully understanding and empathising with the user?"

-Reflecto.co card question





1) Service safari



First of all, the research started at Digital Catapult and Google Campus where the research target user group gather for learning new knowledge of the advanced technology. The aim of service safari was (1) observing the startups reaction with the provided services (2) explore the teaching sessions at the support organisations.

Both events were about inviting the early stage startups who are ready for scaling up their business. However, surprisingly, the research met very early stage startups. Some of the participants even didn't have MVPs and found it hard to follow up the workshop activities. The research questioned the reason why the unexpected fresh startups attended the events and what they want to gain from the workshops.

Place	Google Campus	Digital Catapult	
Event	Data Pipeline class	Augmentor UX masterclass	
People	Open for anyone who interested in Google Cloud	VR and AR technology startups who are the cohorts in Digital Catapult accelerator programme 'Augmentor'	
Agenda	Introduce Google Cloud new feature, Share the data science team case study.	Introduce user centred methodology, Use the design methods and tools: user journey map, crazy 8, storyboard, etc.	
Attitude	Very active, many questions from the startups, Startups speak to each other freely.	Concentrate, quiet, passive. Some of cohorts drop-off or get confused during the activity.	
Main findings	-Developing the MVPs confidently. -Enjoying the technology topic events and talks. -Looking for a good network.	For the startups who are working on advanced technology ideas, they're testing requires long time to build the MVP and expensive facilities. Therefore, the startups tend to reduce the test and focus on building.	

Table 1. Service safari summary

No. of the second se

2) Co-discovery activity

"What is the average stage of the startups around the support organisations?"

"Are they getting the help what they really need?"

During service safari, a co-discovery activity planned to overview the startup's stages and understand their needs and emotion changes in different stages. Also, the research asked how they manage the uncertainty of a startup journey.

The most often heard word was the "time". Many startups said they're busy to work on their project, but always not enough time to complete their tasks. The research frequently asked 'why' questions to open their real problems behind the lack of time issue.



Co-discovery activity helped the research to remove the stereotype of the marking criteria or 'stages' what distributed the startups by the size of funding money. There's no cookie cutter to categories the startup's stages, everybody had great stories how they started their journey. The research inspired by their passion also had been engaged to find their real needs what can tackle the barriers to make them successful.

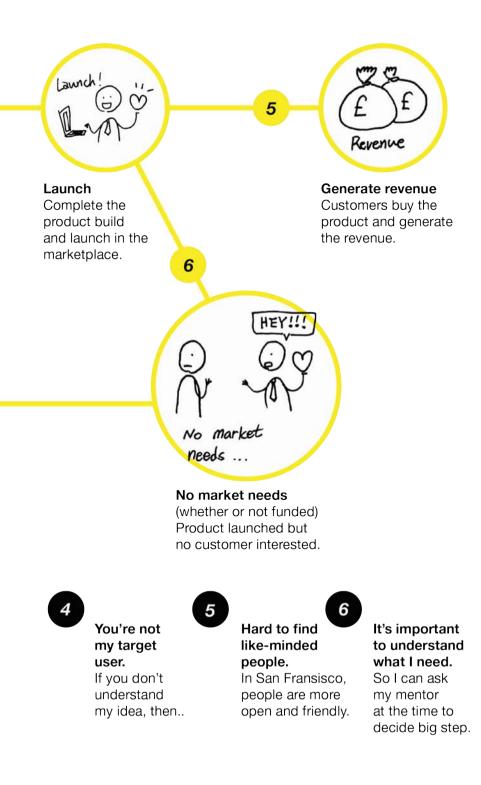
Some of the founders showed their interest for the co-discovery activity and asked for a coffee meeting with the author. The coffee chat allows the research to have an in-depth interview with the founders. It was a weak signal from the startups that they want to speak to someone who has different background. The conversation helped the startup and author both to share the knowledge from different fields, then arranged the regular catch up to follow up the progress of user research. It was a spark that the startups can grow the interest of user centred design and learn by experiencing with their business ideas.

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Map 1. Co-discovery journey map (continue in next page)







Exploring

3.2 Empathising

Table 2. Co-discovery interview analysis

Founder	Learning	Description
1 Al/ML startup founder, 40s	User research heavily focuses on MVP function validation.	Passionate startups are sometimes aware of the value of the user and try user testing. However, their interest is more for validating the features of their prototypes, rather than the core problem of users. Misuse of user research or testing makes them frustrated and misunderstand that user testing isn't important as they expected.
2 ML startup founder, 20s	No given time to reflect on and iterate the idea.	On-board in the support organisation programmes is not a lottery. There's the reason why the programme managers declined the startups applications. It may sound basic, however, surprisingly not many startups are taking time to reflect on the reason why they're not selected. Then spend more time to discover the other programmes while they are busy with building MVPs.
3 Al startup founder, 30s	Rushing to launch a startup and being busy.	The advanced technology is already used in many sectors, and the market tends to be competitive. So the startups are rushing to make an outcome before it's taken. However, the crucial thing is that they underestimate the user research and skip that during the idea development.

Founder	Learning	Description
4 AI/ML startup founder, 40s	Lack of analysing skills to read the user's signal.	No known uses for their product or service is a serious failure element. However, the founders who just start to establish the startup, they don't specify the users and imagine that their idea can be used in multiple direction.
5 AI SME founder, 40s	A desire to mingle with like-minded people.	There are many meetups and events for startups to do networking. However, the founders are too busy to discover all of them, and sometime the event quality isn't good enough. The startups want to speak to people who understand their pain, learnings, knowledge sharing.
6 Al/ML startup founder, 40s	A fluid market requires flexible and responsive mentoring.	While the startups join the incubator or accelerator programmes, they have a limited time to have a tutorial with their mentors. This delays the critical decisions when the founders having an opportunity to grow their business. Timely mentoring is much needed.



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3) Expert email interview

Based on the previous expert interviews, the research learnt that the programme activities are coordinated by many teams and stakeholders. The multi-disciplinary teams' collaboration works better when "teams have permission to innovate the experiment (Bracken, 2015)". Therefore, the research reached out to the Digital Catapult accelerator programme managers for empathising with their work life and desire of experiments.

Also, discovered the measure of the success for the programmes to clarify the clues of the ideal business form of their programmes. By then, the research planned to flip the found KPIs into the design space of new service for satisfying both the startups and the support organisation.

Reaching to many programme managers, the questionnaires were shared via email instead. 3 out of 8 programme managers answered the interview. (more details in the Appendix 3.2)

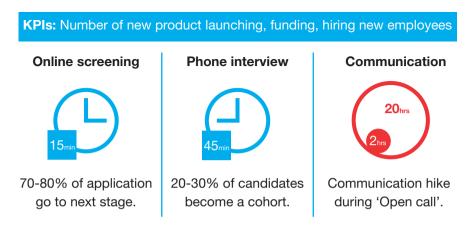


Table 3. Accelerator programme KPI & resource usage

Analysing the managers answer allowed the research to understand what is the barrier for them to explore the experiments of their programme activities. They showed the interest in trying the new activities for the cohorts, but at the same time concerned about the resources they need to contribute. Programme managers doing many the other tasks for creating the innovation with various stakeholders. Additionally, the research found that the time resource significantly increases during the application open period. Therefore, the research shifted the time limitation to the motivation of experimenting the new solution which can reduce the time of screening bad quality applications and training the very early stage startups coming back to the programme managers when they are ready to onboard.

Reflection:

Using the service provider's KPIs to narrow down the research design space was an interesting experiment. While the startups had various needs and status, the support organisation's interest was clear and simple. Therefore, the research approaches to analyse the findings shifting between bottomtop and top-bottom. If the time allowed the author to bring all startups and programme managers in one place, it could be the best way to find the critical barriers and also make the both side aware of their pain. However, in this research, the author is a designer who is discovering the various locations, which took a different way to generate the findings.

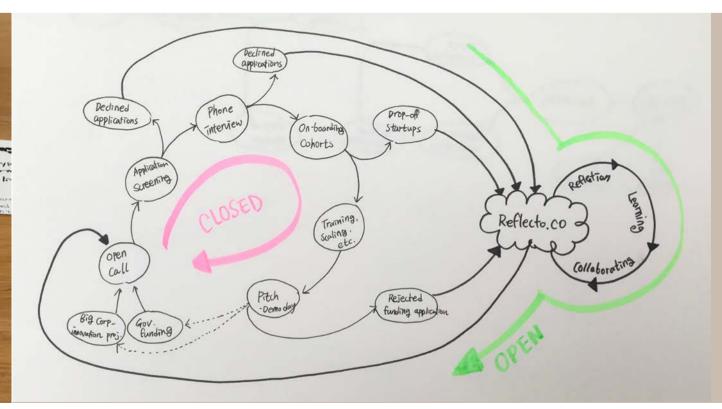


3.3 Define

- (1) Insights
- (2) Research question
- (3) Conceptual ideation
- (4) Scoping









Comic 1. A perfect elevator pitch









1) Insights

During analysing the previous findings, it categorised in three lenses. Co-discovery, contextual interview and experts interviews unpacked their needs, but also the system of support organisation's programmes have some opportunities to optimise to provide a better experience for both side stakeholders.

Startups - Strong for building, weak for learning.

- (1) Not confident to work with design.
- (2) Want to be independent but want to be connected with like minded founders.
- (3) Hungry for validating their MVPs when the startup has a product or service already developed.
- (4) Beginner founders often afraid to leak the idea, and not validating the idea, just build it.
- (5) No given time to reflect on and iterate the idea.
- (6) Lack of analysing skills to read the user's signal.
- (7) A fluid market requires flexible and responsive mentoring.



Comic 2. A general call with your mentor



Support organisations- Not enough time to experiment.

- (1) Willing to help startups with new activities, but don't know what to provide to them.
- (2) Support organisation's mentoring programmes are too generic, business focus.
- (3) No extra resource or access provided to the one day masterclass mentors.
- (4) Coordinating the extra activities or masterclasses takes time to be confirmed across many departments internally.
- (5) Intensively focused on the business, no space for growing playful, growth mindset with the cohorts.

Systems- Lose the connection with startups.

- (1) Application questionnaires don't ask the startups' user research experiences.
- (2) Declined candidates follow up communication is missing in the current Open call system.
- (3) Startup progress monitoring is only available through communication channels, phone, email, google drive, and the other tools.
- (4) Startup's networking progress is invisible for the startups and support organisations both.





Problem space

The insights emerged the problem space for the support organisations and startups. The research categorised the problems and changed the problems to the design space. The startups and the support organisations both answered that managing time is the main challenge area, however the research analysed the reason behind that and found the core problems.

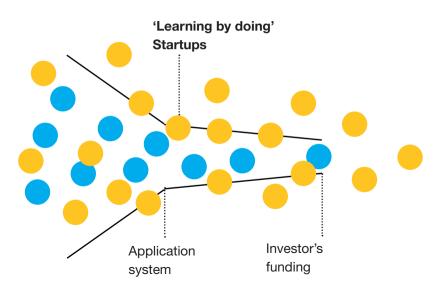


Image. Inspired by 'Open innovation' (Chesbrough, 2003)

Support organisations

Problem: Closed system, excluded support target. **Design space:** Open system, inclusive and collaborative networking.

Startups

User

Idea

- Don't know who are
their users.
- Make a mistake in
user researching.
- Not trained to
synthesise the user's
weak signals.

Not validated by the potential users.
Not trained to communicate with non-tech people.
Don't have a criticality in their business idea.

Product

Building too big
MVPs at the begins.
MVP target isn't
identified.
Not testing lo-fi
prototypes.

Data

Outcome indicators are not specific.
Not measure soft outcomes (e.g. emotion, reaction, etc.).

Problem: Learning by building, not doing.

The startups prioritising incorrectly, building MVP shouldn't take their time to empathise with the end-users.



Design space: Learning by doing, together.

Learning the key 4 problem spaces will train the startups have strong idea which developed based on the user centric mindset

2) Research question

The startups and support organisations both concern area, the time. The limited time should be investing in the most valuable task. One of the pioneer of Lean approach in business, Steve said, "getting out of the building" to understand the problem the startup want to solve and for whom (Blank, 2014). The research stated the research question based on the learning by doing approach from there. Also, added the collaborativity in the further research direction due to the interviewed founders wants to find the like-minded people.

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How might we support the early stage tech startups to focus on the valuable problem to solve and design user centric solution and test collaboratively with the other startups? 47

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3) Conceptual Ideation

Geoff Mulgan, Nesta CEO highlighted that the challenge of design for the innovation is that "project management method needs to be adapted to ensure that they are both cheaper, and leave behind stronger skills (Mulgan, 2014)" to successfully implement the design solution. Therefore, the project conducted a scoping meeting with Digital Catapult to clarify the capability of implementation based on the conceptual ideas.

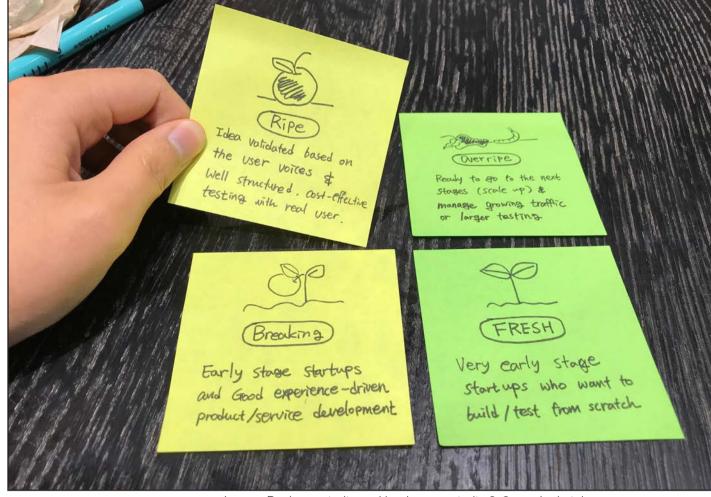


Image. Design maturity and business maturity 2x2 graph sketch

1) Mix-match system

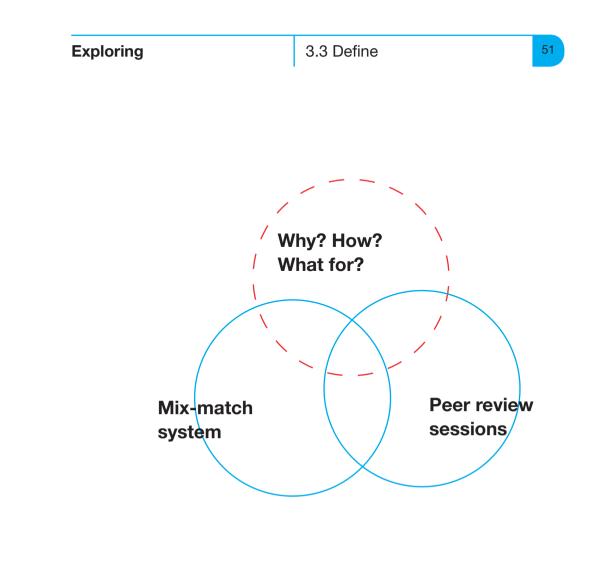
The initial concept was restructuring the Digital Catapult accelerator programme application system to increase the volume of overall cohorts number. The concept idea had expected for bringing more serendipity to the cohorts and very early stage startups who are in the programmes. For implementing the idea, the application marking criteria should be adjusted from a business focus to design maturity.



Image. Keywords based on the clustered quotes and interviews.

Show & tell - Peer review sessions

The second concept was using the peer review as the new activity in the accelerator programmes. Peer support is a social interaction to help a similar person with their experience (Graham and Rutherford, ibid.). The research has been spoken to the startups who want to meet the like-minded people for learning the way to manage uncertainty. So the research shared the needs of the peer support to the support organisations to change from their current activities.



While the conceptual ideas were interesting, the experts expected supportive information which can show the benefits or impact for changing their existing services. It led the research to focus on building the experiments to collect tangible evidence of the findings. 52

4) Scoping

In order to gather a fresh perspective in the research, the project was shared to other incubator organisation and co-working space managers. The meetings helped the research to identify the opportunities and barriers for developing the idea, then adjusting the scale of design space within the given time.

Table 4. Barriers and Opportunities

managing the uncertainty

Interviewed Incubators, personal coaches, and mentors			
Opportunities	Barriers		
- Various stage startups	- Bureaucracy structure		
- Bring the dynamic startups	- Complex stakeholder		
- User centred design study	relationships		
- Playful atmosphere	- Resource constraints		
- Growing mindset for	- Slow decision making		

- Imbalance value exchange
- between different stage startups





04 Doing

4.1 Design space

4.2 Lean circles

- 1) Prototypes
- 2) Round 1,2 and 3
- 3) New insights

4.3 Reflection

- (1) Competitor review
- (2) Experts interview
- (3) Research question 2 Digital monitoring system

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The Doing phase planned to define the design space and use Lean startup methodology for validating the idea. Therefore, in the research, the Lean circle continued until the prototype showing the evidence of collaborative learning, reflection and engagement from startups. Each circle had a fixed objective to build the prototype and user testing.

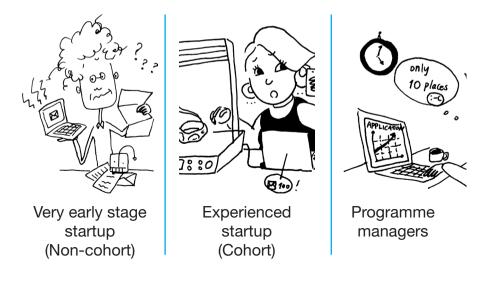


4.1 Design space

Target User

The target user group divides in three categories, includes the support organisation's programme managers. The startups are divided based on their status that they are selected in the programmes or not.

Table 5. Target user groups



"I'm looking for the mentoring session to make my business being more focus." - Peter, Developer background, 30s



Pains	 Access to the business experts isn't easy. A couple of times their applications declined. Continue building the MVP by themselves. Not familiar with the user research or testing.
Gains	 Strong knowledge and experiences in the technology. Interested in sharing the up-to-dated technology news Actively join the tech-savvy topic conversation.
Oppor- tuni- ties	 Collaboration opportunities with the mature startups. Meeting good people to work with. Easy to adjust the business idea.





"I have to wear so many hats, my business changes too quickly and I don't know what to do." - Julie, Fashion background, 20s



Pains	 Need a flexible mentoring programmes. Work and life balance. Have to make critical decisions by her own. Want to know more about ML for her new service ideas.
Gains	 Accessible to the big corporations. Meet the new experts in advanced technology sector. Reflect their business direction Find good founders to catch up sometimes.
Oppor- tuni- ties	 Getting fresh feedback from the various stage startups. Making a new network outside of incubator (or accelerator) programme.

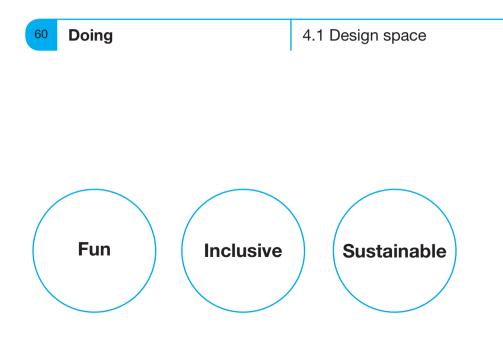
58

"We want to see that the startups making positive outcomes from participating the in the programmes." - Jack, Accelerator programme manager, 30s



Pains	 Take long time to screen the applications. Not sure what activites will be interesting for the cohorts. Time is limited, but feel bad to reject startups.
Gains	 Having great networks across various sectors. Accessible to the big and small corporations to organise the collaboration programmes.
Oppor- tuni- ties	 Encourage various stage startups and bring them as a new cohort in the future. Discover the new activities or masterclasses based on analysing the startups' reaction on-site.

ı



Design aims

1. A playground for the startups

Gathering together to learn by experimenting, it could be achieved by the gamification. The gamification serves three purposes, "changing behaviours, developing skills, and driving innovation (Burke, 2014)". The research will adopt the gamification to design activity the startups.

2. Find the sustainable business structure

The support organisations have many shareholders and the other tasks to do. The change shouldn't require too many resources to change the activities or programme structure. But also, it should have a scalable model.

3. Validate the collaboration value before opening the gate for the future cohorts

Short-term: Screen the different fits of current cohorts and give more time to the very early stage startups to grow with a new solution. Long-term: When the new solution validate, optimise the application system to include fresh network for building a relationship with new founders so that they can grow together.

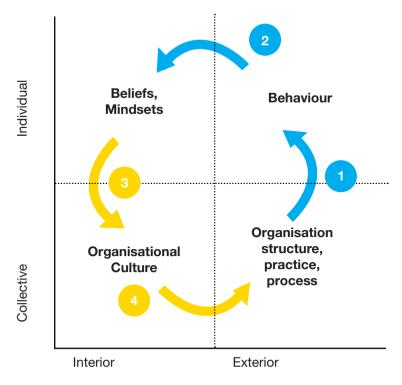


Image. Applied to Laloux's four-quadrant model (Laloux, 2014.)



Design strategy

Laloux (2014) said that three elements to form the organisation culture, beliefs, behaviour and organisation structure, process and practices. The research will take an action on two areas, the organisation practice and individual behaviour by the new solution. Accordingly, the target users will grow their beliefs and mindsets in individual level to establish the good startups. In organisation level, the collaborative culture will be created for the startups. Also, the support organisations will review the cohort's changes and loose the application system to experiment the collaboration culture in broader sense.

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Interview Start up A PRODUCT USER START · Read the cards to Startup Tick the score based on the Answer the result with Startup TEST COLLAS Balans

Image. Initial idea sketch of card game and rules.

Design category

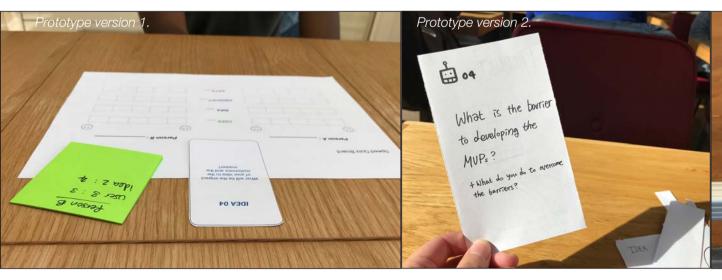
The solution will be designed based on the startup's needs. The activity which can provide a playful activity to the startups to go through the reflection procedure. The idea immersed the card game concept.

- Playful activity and materials for collaborative reflection
- Workshop coordination process





4.2 Lean circle



1) Prototype

Throughout defining the design space and synthesising the insights, experiment materials needed to be tested with the users to observe their thoughts on the activity. The set of questions have been collected during the exploring phase, which the failed startup founders usd to reflect on why their business didn't go well. The research decides to remap those collected reflection questions and cluster them in 4 categories: user, idea, product, and data. Accordingly, the questions have been printed as a card modular to test frequently and easy to implement.

The idea of the prototype was to use the card's design prompts to communicate with the founders for screening the awareness of user centred design and their research quality. Additionally, to answer straight away for the card questions, the users have been asked to 'play' the card in a limited amount of time with the other users.

The prototypes helped the research to generate the feedback in terms of usability, preferences, or critical error of the card game. Also, the founders shared the perception changing about the user centred design after the card game activity. (more details in Appendix 4.2)



Table 6. Prototype version

Version	Prototype 1	Prototype 2	Prototype 3
Cards	Small size, handy, colour coded texts, no illustrations	Bigger size than version1, no colours, hand drawing and writing	Colour coded, hand drawing and bigger font, language reviewed
Score boards	Sticky notes	Printed paper worksheet	Printed paper wosho sheet, Google Form survey
Game Instructions	Verbally introduced	Verbally introduced	Presentation at the workshop, google slides
pitch and reflection templates	Printed paper worksheet	Printed paper worksheet	Facilitated in person

65

Image. Coffee meeting with a passionate and open-minded startup founder. After the meeting, he planned a new user research for understanding their needs.

"Wow, that's good question. But I don't know the answer. How do you find the users and talk to them? Can you teach me?

MEETINGPOM

-ML startup founder



2) Round 1, 2 and 3

The lean circle is structured in three part, build, measure and learn. The circle ran countless times, however, this report will introduce three main themes when the user testing was conducted in a structured manner.

"His user research experience sounds interesting. It makes sense that I should do more user research before hiring developers to build an MVP." -Founder D

Version	Round 1	Round 2	Round 3
Tester	Founder A	Founder B&C	Founder A&D
Author's role	Facilitator, game player	Facilitator, game player	Facilitator only
Themes	Concept validation, Usability test	User variation check	Peer review framework validation
User type	Advice seeker	Founder B: Fresh learner Founder C: Knowledge sharer	Founder A: Advice seeker Founder D: Beginner
Business stage	Early stage	Founder B: Very early stage Founder C: Mature	Founder A: Early stage Founder D: Fresh
Iteration	-Adjust the play time -Prepare the game instruction script	-Consider before and after journey of the card game -Bigger card size -Remove Pivot cards	-Find various stage startups to mix-match for playing the game -Design a digital scoreboard
Main feedback	-Find various stage startups to mix-match for playing the game -Design a digital scoreboard	-Need dynamic founders -On-going relationship wanted -Regular progress review wanted	-Collaborative reflection works -Structured game setup needed -Digital scoreboard needed

4.2 Lean circle



The founder A showed a strong interest about playing the game with different stage startups to reflect his business development experience. Therefore, the second user testing planned for discovering the startup stage variations.

"I was looking for the advisors to give me the direction, but these cards are asking me to look back and make me think what do I need to do next. Can I play this with the other stage startups?"

-Early stage startup, Founder A



The card game activity wasn't difficult for the founder C, also he provided an idea of monitoring the startup's own progress based on the card game play result. Additionally, he shared the concern about the pivot questions. Based on the other interviews, the research decided to remove them in the servie launch phase.



"Some of questions are tricky, but I've enjoyed the moment to think the answers and discussion with my peers. "

-Startup Fresh learner, Founder B

"I'd like to use this tool with the other startups, but also for analysing my progress."

"Pivot questions are interesting but it could confuse the very early startups. What do you think?"

-Knowledge sharer, Founder C





JGE

2016

"His research experience sounds interesting. It makes sense that I should do more user research before hiring developers to build an MVP."

-Startup Beginner, Founder D "I like his fresh feedback on my idea. No matter the stage he is, he told me something interesting. It's quite fun too. But in reality, I don't meet beginner startups in general."

-Early stage startup, Founder A

The founder 'D' hasn't had experience with a startup business, however just started to get a business idea recently and actively looking for hiring developers to build an MVP based on his idea. Through the game, the 'founder A' helped founder D to focus on finding users and validating his idea firstly.

The third user testing session was clarifying that the founders learning from each other by the game. However, the founder A gave a feedback about the scoring system. Giving a score to someone in front of made him feels uncomfortable. Especially for the beginners, he didn't want to his peer feel frustrated.

> According to the three Lean circles, the research iterated the prototype and shaped the service.





Reflection:

While the two participants are willing to help with user testing, the research conducted multiple guerilla tests for finding the different user segments. Throughout the guerilla user testing at Alan Turing Institute, British library and Nesta, the research met the mature startups, however, they were not interested in playing the card game or couldn't find the benefit of the activity. The failed guerilla user testing experience simulated the startup's pain when their idea rejected from the users and investors. The research author was frustrated when the test failed and wanted to speak to someone for recovery. This experience inspired the research that focuses on developing a new solution to grow a positive mindset, so that the startup won't have the same feeling when they meet failings. To leverage the uncertainty of business development, the founders needed the 'growth mindset (Dweck, 2017)' which can overcome the failures and explore the solutions positively.

3) New Insights

(1) Give a time to the founders to be confident to be on the game stage.

Limited time rule makes people nervous. The scoring system makes the players feel uncomfortable. However, in order to facilitate the activity to bring a successful outcome, these rules should remain. The research opens the journey of before and after playing the card game for the startups. The rule will remain as same, but then the card questions and workshop agenda will be informed to the founders to have enough time to digest the new activity they haven't experienced before.

(2) Set up the dynamics.

The activity will allow mixing to match the various type of startups, who haven't met each other before. Also, not only the startup founders, maybe the other sector experts can join the activity to share the different knowledge to the tech startup founders who only have tech or developer friends.

(3) Recording the moments of reflecting and learning.

The new challenge emerged throughout the user testing sessions. Most of the participants wanted to record their answer and scores to revisit them in future to compare the progress. The research connected this insight with the insight point 2 and brought this new challenge to the support organisations to co-create the solution. 76

4.3 Iteration

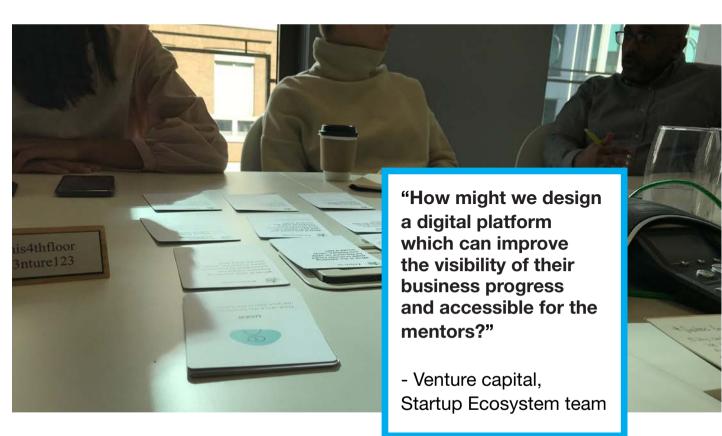
1) Co-creation

"It will be fantastic if we can see the founder's score improvement in the digital space! I can save time to analyse the founder's strength and needs if we have the monitoring system."

-Venture capital firm, 'Studio day' organisers

As the design space has been gradually forming the solution, the research shared the insights with the potential stakeholders for listening to the service provider's perspective. In particular, creating the monitoring system has been an important topic to discuss. The discussion brought the Sprint opportunity with the interviewee in the Growing chapter.

The co-creation session emerged during the insight sharing presentation with Fintech specialist venture capital organisation. The venture capital firm has a team who focus on creating the ecosystem for startups and the other stakeholders by organising regular workshop 'Studio day'. The team wants to use a new activity to engage with the founders and the mentors who are invited to in the Studio day. The research asked the stakeholders about their ideal outcomes for the Studio day.



Expectation:

- Visualised founder's business idea status and improvement
- Visualised network between mentors and founders which created through Studio day
- Analyse the external mentors' advice quality
- Listed next actions of the founders after the Studio day

The co-creation discussion and the user feedback from the multiple testing brought the second research question around the monitoring system. As the new question formed in the later phase, the additional research and experiment has been planned in Sprint to iterate the initial idea.

4.3 Iteration

2) Competitor review

During developing the solution, the competitors are researched and in order to analyse the unique value of the research, SWOT analysis drawn. The research found the competitors who deliver the user centred design methodology through the card or toolkit materials to the users. IDEO (2003) said "keep people at the center of our design process" in order to "explore new approaches and help you develop your own".

The competitors are providing kits or cards as a product, however the workshop corditation or the activity set-up is not included. The research solution is designing the pre-use and after-use of the activity materials as a service. Therefore, the research defined this differentiation as a unique value which is essential to survive in the competitive market.

Accordingly, the SWOT analysis illustrated based on the competitor research.

Table 8. Competitor analysis

Card/KIT name	Design Kit Travel Pack	ΙοΤ ΚΙΤ	Trigger cards
Brand	IDEO.org	Futurice	Trigger
Single/ multi play	Multi players	Multi players	Single or multi players
Objectives	A deck of 32 cards containing bite-sized design exercises. (Kickstarter, 2017)	A board game that brings co-create user- centric IoT experiences. (lotservicekit. com, n.d.)	Ideate and run brainstorming sessions with "what if" questions cards. (Kickstarter, 2018)
Strength	Various exercises which validated by IDEO practices.	DIY style 3D printing objectives, open sourcing	Scalable model, strong business partners
Weakness	Text heavy	Only high-level service scenario can be illustrated	not much guidance or gamified elements



SWOT

Strength

Weakness

 Provide the pre/after using the materials as a service Partnership with Digital Catapult Validated user needs and stakeholder feedbacks 	 Scalable model Developing the digital monitoring system Idea protection of materials and activity framework
Stakeholder reedbacks	and activity framework

Opportunity

- Growth of tech startup ecosystem

- Awareness growth of user centred design in non-design sector

- Millennials holacracy working style (Landrum, 2018)

Threats

GDPR and confidentiality of sharing the startup progress through digital system
Competitors moves to the same business concept





05 Launch

- 1) Service introduction
- 2) Service stakeholders
- 3) Service journey
- 4) Touchpoints
- 5) Service Blueprint
- 6) Business model canvas



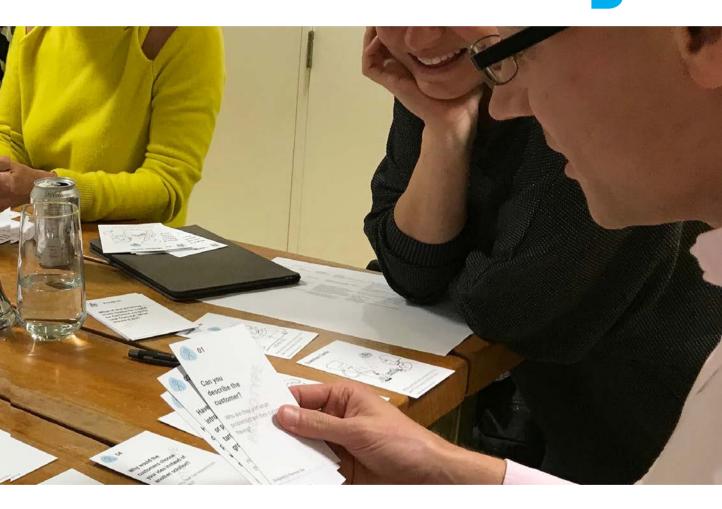






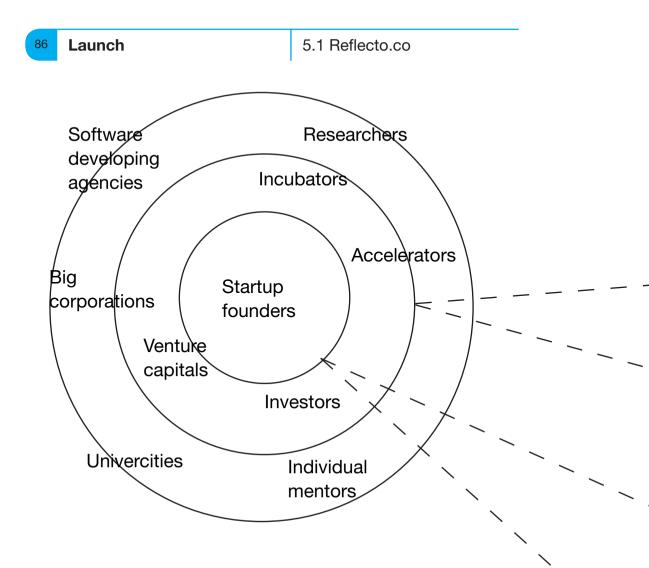
Reflecto.co

Reflecto.co is a gamified peer review workshop for the early stage startups to reflect their business idea collaboratively with the other startups and mentors. The workshop main activity is playing the card game and scoring the startup's answer based on the questions on the cards. The questions are focusing on four categories to emerge user centred thinking and clarity of the business idea. The scoreboard is provided to the workshop participants in a tangible and intangible form both to capture the activity impact, so that can be a input to the monitoring system of overviewing the startup progress anytime it needed. The support organisations save the workshop participants' contact for the future relationship.



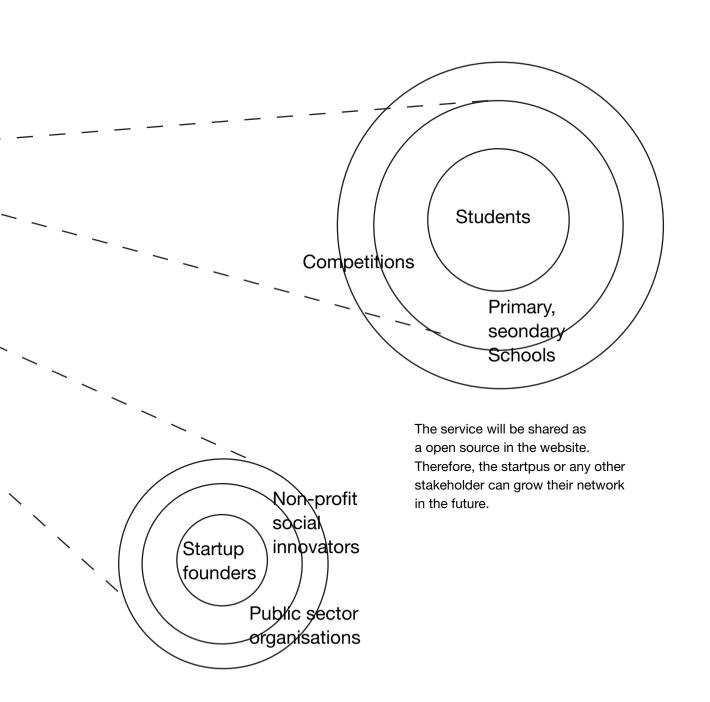
"Learn by doing together! Give time to reflect your startup journey."





Stakeholder map

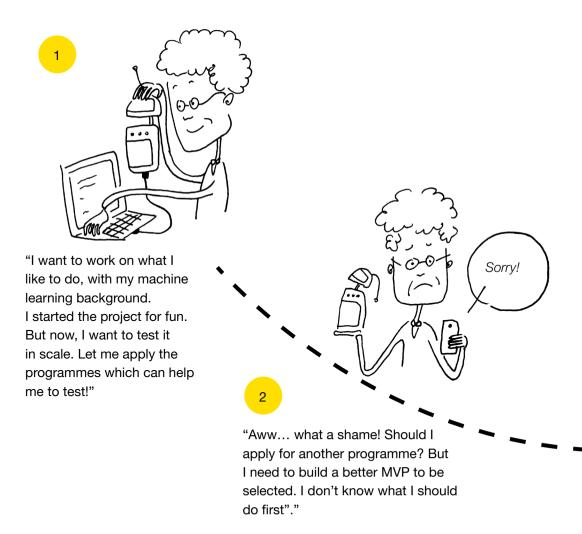
Reflecto.co main user group is the startup founders who are establishing the company for the first time. The support organisations are direct stakeholders who are providing the service through the collaboration with Reflecto.co. The indirect stakeholders are including various potential groups including the coaches, big corporations, investors and so on.

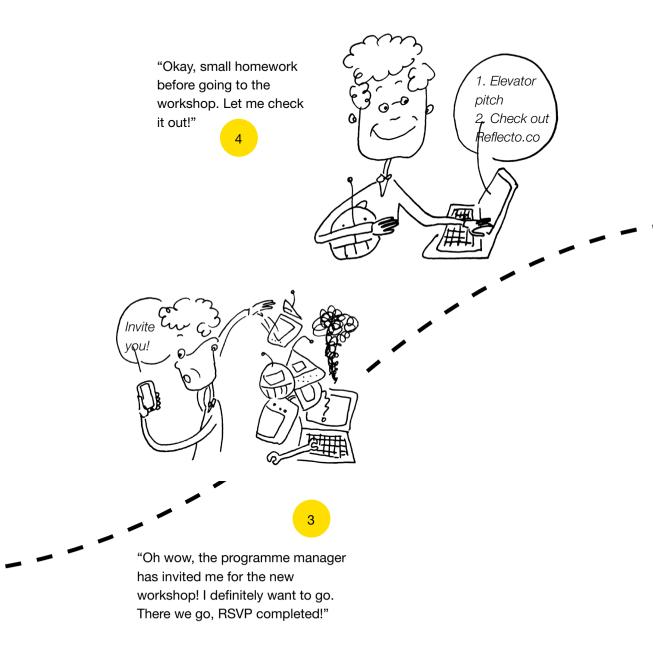




3) Service journey

The very early stage startup founder, Peter changed from part-time to full-time on his project. He wants a powerful computation facility. He found a programme which is provided for free, he applied for the support organisation programmes.





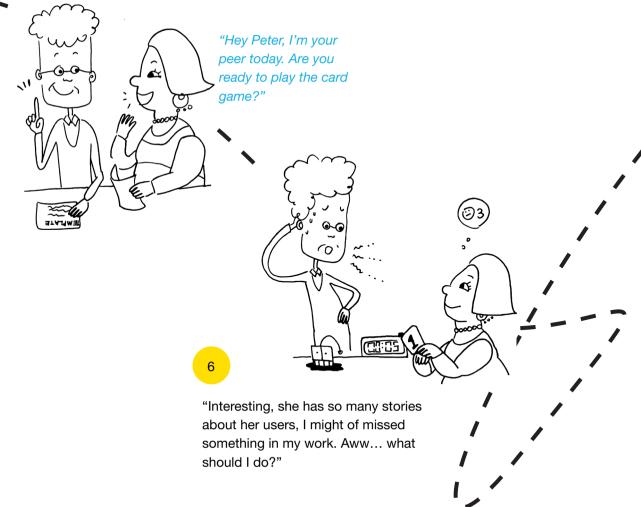


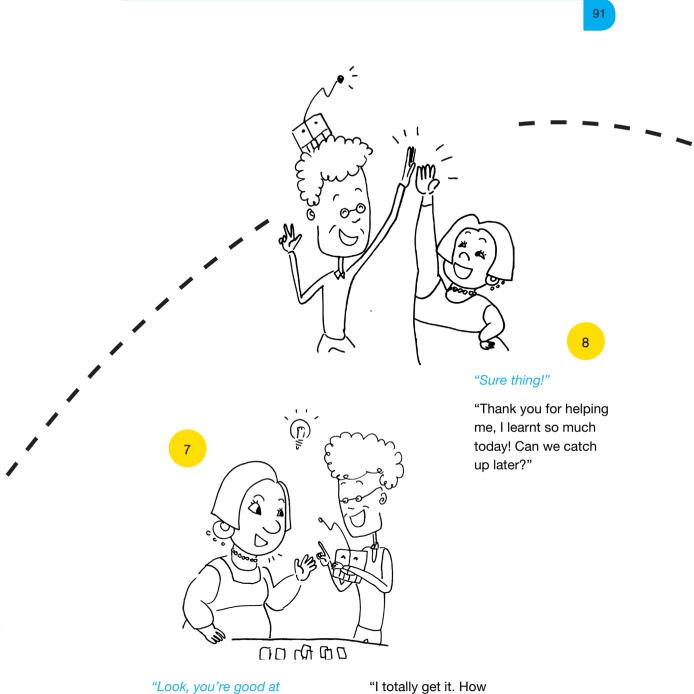
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During the workshop

The workshop organiser invited various startup stages, included Peter and Julie. Julie is a cohort in the support organisation's programme, she joins the workshop for getting more inspirations from new startups.

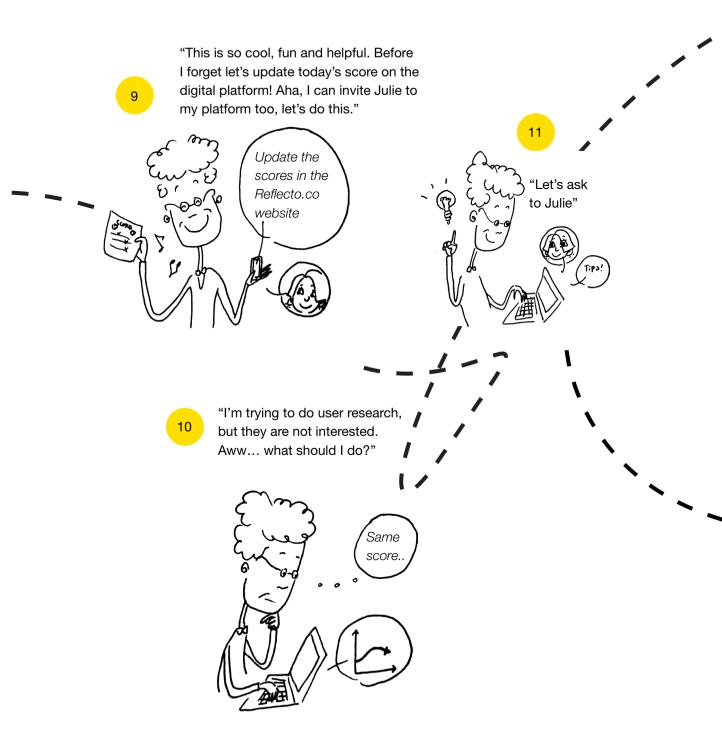
"Elevator pitch is quite cool, I can see what other people are working on. Mine was okay too, it was good to practice at home."

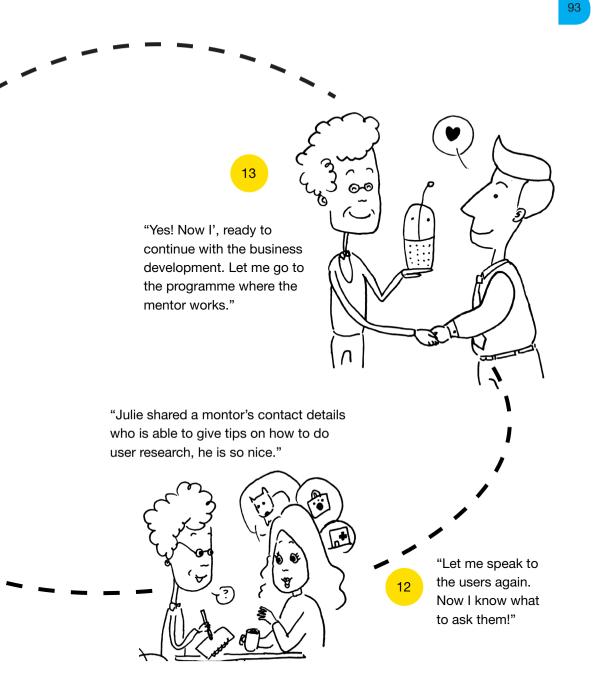




"Look, you're good at answering the product questions. But maybe you need to find more people to speak to about your idea". "I totally get it. How did you do the user research? Can you share with me some tips?"







After the workshop

Peter met many new people who can give advice to his business. He continued playing Reflecto.co card by himself and reviewed the progress. Also, he liked the support organisation which invited him, so he followed their programme updates to apply in the future.



4) Touchpoints



Cards

16 questions are categorised in 4 section, user, idea, product and data. The questions have been clustered and re-written based on the startup's reflection blog posts and experts articles. Each category has 4 cards, a larger number will have a more complicated question on the card.







Card categorie

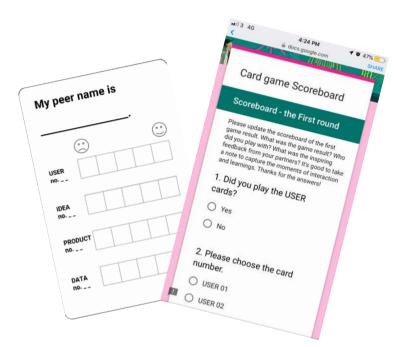
USER : 4 questions focused on defining the users. IDEA: Identifying the clarity of startup's ideal. PRODUCT: Describe the current or future MVPs. DATA: Overview the data sources to collect.





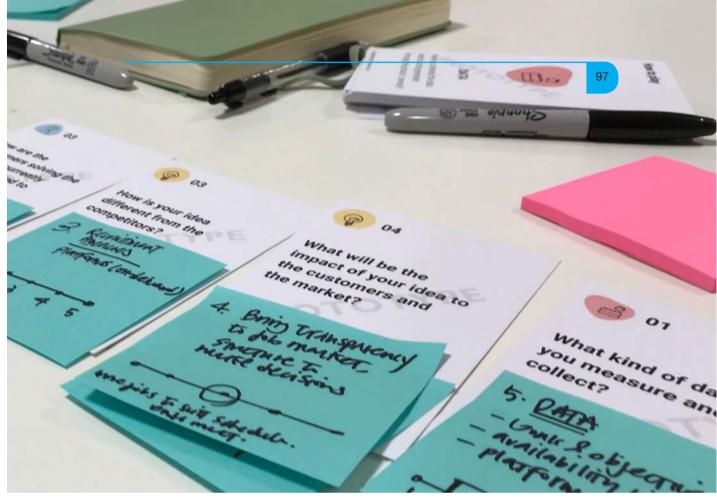






Scoreboards

The card game has a scoring system. From 1 to 5, the startup will receive the score from the other card game players who listen to the answer of the questions on the selected cards. The score number is the indicator of identifying the clarity of player's answer in various perspectives. The scoreboard is provided in paper printed version or digital version Google Form depends on the usability preference of the client. The workshop participants including the startups, they can write feedback and learnings during the card game activity.



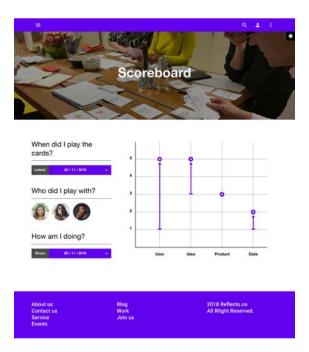
Paper/ Post-it During the game, use paper version to take a note.



Digital space

Startup's card game score can be saved in real-time by a mobile survey.





Monitoring platform

The monitoring platform is for the startups and clients who would like to monitor the business idea development progress after playing the card games. The platform have an access level setup feature, therefore the startups have the ownership and are able to share the information with their advisors, mentors or consultants.

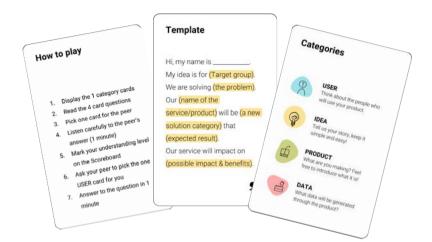
*		0	Ð	t	,	9		1	
_	Scoreboard Ov	rerview							
_									
-	Cards	Selected	category	rt_qt_avg	12_91_219	diff %	r1_62_avg	r2_q2_avg	df %
-	user 01	3		3		33.33%	2.8	3.8	35.71%
-	user 02		7						
	user 63	2		3.6	3.7	2.78%	3.3	4	21,21%
	user 04	2		3		0.00%	2.5	3	20.00%
	idea 01	3		3.8	4	5.26%	3	3.7	23.33%
	idea 02	0							
	idea 03	1		2.3		30.43%		4.3	115.00%
	idea 04	2		3	3.5	16.67%		4.3	115.00%
	product 01	1		3		33.33%	4	4	0.00%
	product 02	2	,	2.5	4	60.00%	2.6	4	60.00%
	product 03	0							
	product 04	0							
	data 01	3		3.3	4.5	36.36%	3	4	33.33%
	data 02	0							
	data 03	1	•	3.1	4	29.03%	2.8	4	42.86%
	data 04	0		2					
	Card result o	omparison							
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Google sheet lo-fi prototype

In order to analyse the card game results, the research created a Google sheet dashboard which can inform the workshop overall card selection, average scores, and founder's results. In future, the Google sheet dashboard can be developed as the right hand-side platform mock-up.

100 Launch

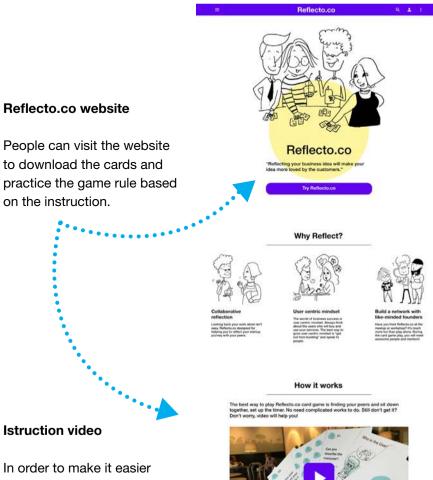
5.1 Reflecto.co



Game instructions

Initially, the card game rule designed based on 1:1 play format. The game players are pair up and review the instruction booklet and cards. The selected questions are for their peers to ask, not the one they want to answer. Each round they are exchanging the roles to ask questions or answer the cards. After the play finish, the players read through the feedback for each other.

*The game instruction is continuosly updating based on the new case study of the research.



to explain the card rules, shae the video about playing Reflecto.co step by step.

Download

PDF files can be downloaded directly from the website.

Blog Work

Materials

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Launch

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5.1 Reflecto.co

5) Service Blueprint







User's action	Search and apply	Recieve the invitation	Visit the Reflecto.co
Location	Home / workplace	Home / workplace	Home / workplace
Physical evidence		Chat with the workshop organiser	Printed cards, workshop materials
Digital evidence	Website	Workshop invitation email	Downloaded card, work- shop materials PDF files
Line of interac- tion		[!]	
Support organissations		Promote the workshop information	
Reflecto.co facilitator	Promote the service online and offline	Update the website, upload PDF cards	
Line of visibility		!	
Back of stage interaction	Prepare collaboration workshop with staffs	Scope the workshop, editing the agenda	Hire mentors, additional facilitators, other dynam-
Line of internal interaction			ic networks
Support processes	Send workshop invita- tion, creating Eventbrite page	Optimise the workshop framework and materials	Print the workshop ma- terials, creating the digial scoreboards
KPIs	Signed collaboration contract with support organisations	Number of opened emails, website visits	Downloaded PDF files, website visits, email q&a



Sign up the workshop	Recieve the workshop update email	Arrive the workshop venue
Home / workplace	Home / workplace	Workshop venue
	Printed elevator pitch script	Eventbrite RSVP printed ticket
Eventbrite RSVP	Downloaded elevator pitch script	Invitation email, RSVP QR code
Send elevator pitch request via email		Greeting, ask to sign the consent forms
Upload the materials in the email and website	Pre-discover the partici- pants profile	Facilitate the elevator pitch
Mix-matching the workshop participants, seat-planning	Prepare the consent form, hire photographer, caering	Check the pairs, facilita- tors, display the mate- rials
Alert for sold-out, writing workshop preparation email	Re mix-match the partic- ipants if someone cancel the tickets	Prepare the beam projector for welcome presentation
Number of RSVP	Number of opened emails, cancelled tickets	Number of attendees

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User's action	Startup's introduction, elevator pitch	Pair up with the game peers and mentors	Select the cards and play
Location	Workshop venue	Workshop venue	Workshop venue
Physical evidence	Elevator pitch note, printed template, signed consent forms	Sit with the peers	Selected cards, paper scoreboards
Digital evidence			Digital scoreboards
Line of interaction			
Support organissations		Sit with the founders	Support the founders to answer the cards
Reflecto.co facilitator	Introduce Reflecto.co card game rule	Inform the digital score- board link	Help the confused founders
Line of visibility			
Back of stage interaction	Check the time		Checking the founder's engagement, questions
Line of internal interaction			
Support processes	Double checkthe digital scoreboard link, send it to the founders	Check the wifi-network status	Digitse the paper score- board manually
KPIs		Number of opened scoreboard links	Number of submitted digital and paper score- boards

	Eminaria Company Compa	B KEEP IN TOUCH!
Read the scorecard, share the feedback	Share the access	Receive the thank you email
Workshop venue	Workshop venue	Home/ workplace
Filled out paper score- boards, feedback notes	Business cards	
Updated digital score- boards and access setting	Linkedin, facebook, email detail	Email, next workshop updates
Collect the founder's contact		Continue networking with potential cohorts
Ask for setting the access for the mentors (optional)	Facilitate the closing section, ask to complete the workshop survey	Iterate and update the edited materials
	Reflect the workshop and decide the next workshop plans	Plan the next workshop, monitor the participants' progress
Add potential cohort lists and send workshop survey link via email	Collect the survey result and send thank you email to the participants	Integrate the digital scoreboard + project management tools
Number of founders who give access to the mentors	Number of completed surveys	Opened emails, new workshop contracts, new collaborators



5) Business model Canvas

Key partnership	Key actiities	Value proposition
 -Digital Catapult -Incubators -Accelerators -Venture capitals -Co-working spaces -University Entrepreneur centres -Software/hardware agencies -Google Campus 	 -play card game -update the digital scoreboard -build a relationship Key resources -digital monitoring platform -cards -trained facilitators -startup network 	To Startups -collaborative reflection To support organisations -training facilitation -building a monitoring system To both -creating an inclusive startup ecosystem

Cost structure

-Startup individual mentoring: Transportation fare, mentoring time

-Business:

Digital monitoring system development, refine the cards, travel, staffs, printing



The business model helped the research to overview the business plan. The key customer segment divided into two groups: the individual startups and business partners. The business partners are the support organisations. The open-sourcing model is benchmarked by the LEGO® SERIOUS PLAY®. Reflecto.co revenue stream is based on the consulting fees and workshop facilitation activities.

Customer relationshipsCustomer segments-collaboration between support
organisaions and startups
-collaboration between
stratups
-automated monitoring system- End-user: individual statups
- Business: support
organisationsChannels- Imperson: events, meetings
-website
-emails
-social media- Imperson: events, meetings
- Imperson: events

Reveneu streams

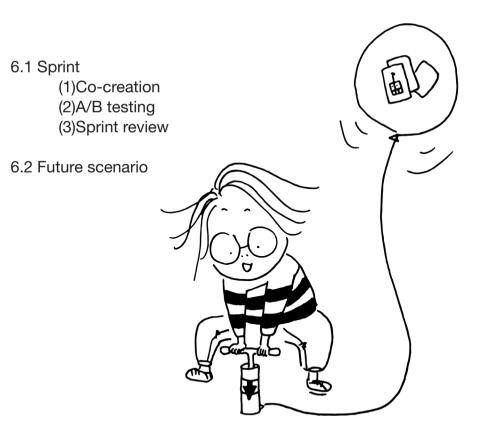
-End-users: peer review, consulting

-Business:

Training the staffs, optimise the workshop structure, facilitation, building the monitoring systems



Growing



"Instead of waiting to launch a minimal product to understand if an idea is any good, you'll get clear data from a realistic prototype."

- Google Ventures, 2016

Although the user testing validates the Reflecto.co idea, the startups and support organisations concerned about the scalable model. For proving the possibility of scaling the new service, the research planned two Sprint to experiment the scale model.

Each Sprint collaborator organisations had a plan to organise a generic network event for their startup cohorts. Therefore, the research conducted co-creation sessions to optimise the Reflecto.co activity. Throughout the co-creation, the research found that the activity can be adjusted very flexibly based on the organisers' preference.

In this report, two Sprints will illustrated as a A/B testing to identify the benefits of each card game rules.

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6.1 Sprint

(1) Co-creation to prepare the workshop

The collaboration meeting is planned only 1 week before each event. In particular, one collaborator wanted to optimise the card game rule and digital scoreboard for achieving their event goal. The author and workshop organisers needed quick action to test that Reflecto.co on time. Therefore, the research used a Sprint process to deep-dive in the topic area in a fixed time (Knapp, Kowitz and Zeratsky, 2016). In order to design the digital scoreboard during the meeting, the research created a Google sheet, a collaboration tool to iterate on-site. It increased the efficiency of prototyping and decision making with the collaborators.

Schedule	Monday	Tuesday
Google Sprint	Define the problem and focus area.	Sketch solutions.
Suppot organisation & Reflecto.co	Identify the workshop objectives. Understand the context of workshop.	Write the workshop agenda and play around for finding the best flow.
	Overview the budget and available resources for organising the work- shop.	Consider the touch- points of the end-user from aware to leave the workshop.

Table 9. Sprint schedule applied in the meeting agenda



Wednesday	Thursday	Friday
Generate testable hypothesis.	Build a hi-fi prototype.	Test to the real users.
Clarify the KPIs of each steps of workshop. De- fine the data type which should be collected.	Review Reflecto.co materials and define the optimising points.	Implement the workshop and observe the result.
"What should be shown in the digital monitoring system?"		



(2) A/B testing

The research compared two different organisations Sprint experience in A/B testing format to identify the commonality and differentiation of Reflecto.co service impact. The A/B testing was helping to see the possible flexible formats and new rules to play in the future scenario. Surprisingly, the new co-created card game rule resolved the problem of the original game rules, so the research iterated the game instruction and workshop format after the A/B testing with collaborators.



Image. Founders giving a feedback to each other.

1:1 Play

1:1 card gameplay was an original rule for making the startups feel more equal. However, some of the startups said that it feels uncomfortable to give a score to their peers. On the other hand, the support organisations preferred to play 1:1 due to it's quicker to play each round. Overall feedback from the participants and organisers were positive. The research observed closely during the activity implemented with the trained facilitators. The moments when the founders struggle to answer the card questions smoothly addressed by the other players to reflect together based on their experiences.



Image. Mentors updating the founder's card game score on the phone.

1:X Play

1:X game rule is more suitable for the workshop which invites many mentors. This rule is able to receive an intensive tutoring with various perspective from the mentors. However, it needs extra training time for the mentors and facilitators to be familiar with the card questions. (more details in Appendix 6.1)



"I couldn't answer to the USER card questions, because we think there are so many open opportunities with our idea. But then, my game partner explained why we should start with the target group and gradually expand. The card questions helped me listen to the other founder's advice."

-Very early stage startup founder

5G accelerator programme, at Digital Catapult Brighton

The research captured that the founders overcome the fear of failure to answer the questions. The founders showed strong interest in their peers advice to understnd the user research, not only MVPs. Image. Fintech startup founders discovering the Reflecto.co cards with their menttors.

"It makes me feel more comfortable to give the advice to the founders. As a mentor, sometimes I'm afraid to make them frustrated. The design prompts made a safe zone between the founder and me."

-External startup coach

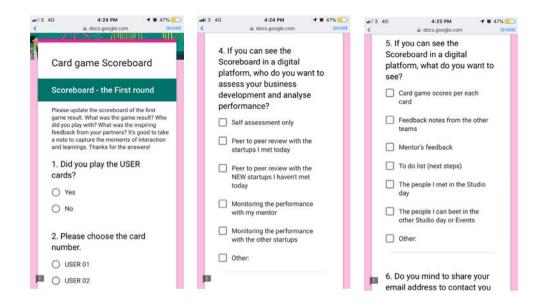
Fintech startup networking event, at London venture capital company. The game experience opened up the new needs of the mentors. The mentors want to provide the advice to the startups wihtout emotional pressure or frustration to them. It showed that the card game created the accessible and playful atmosphere for the participants in the event.



Iteration:

In terms of the usability and experience design, the most important thing to improve in the future is the scoreboard. Paper scoreboard is easy to use for the founders, the facilitator find it hard to read and update the score and feedback on the digital version. When the Google Form digital scoreboard was used instead, it saved the time for the facilitators to transcript the feedback. However, updating the scores directly to the digital form had a high risk of losing the entire data if the network environment or link error occurs. The research will improve the user experience of scoreboard through the lean cycle further.

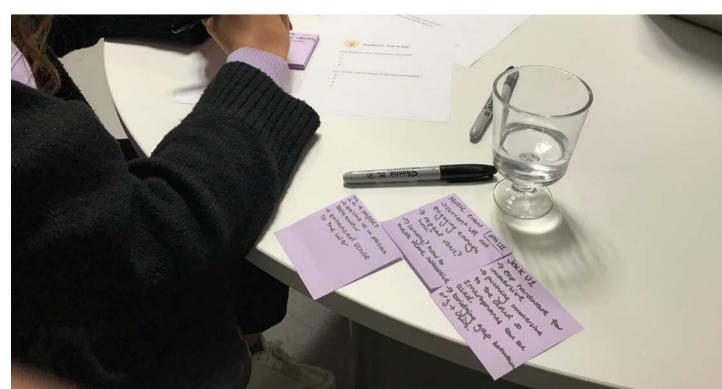
Survey in the Scoreboard For further development, the research preparing the online survey.



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Paper scoreboards

Facilitators' scoreboard after the Sprint at Digital Catapult. Handwriting is diffult to read and takes more time to update in the digital space.



6.2 Future scenario

"Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success."

-Tim Brown (Brown, n.d.)

The Human, Business, Technology circle introduced by Tim Brown (Brown, 2009), the research believes that the service should respond to these three circles to design the user centric service. Reflecto.co service in the on-going journey for reaching to more users who need help in their present life. Therefore, the research looked back the feedback and comments from the beginning of service safari to the sprint experiences for finding the key areas to improve further.

(1)Open sourcing

Google said that releasing work as open source and the corresponding contribution process result in a higher return (opensource.google.com, n.d.). As the Reflecto.co materials are simple, easy to be copied by people, it will be more effective to open the workshop materials as an open source. The service core value will be brought by the collaboration network, knowhow and the people. Therefore the research will carry out the business plan to make an open sourcing service and proceed the licensing to protect the core value of the business.

(2)New stakeholder

Since Reflecto.co has been introduced through two Sprints, the research invited various stakeholders in the startup ecosystem. The research has been discussed the collaboration with the independent startup coaches, software development agencies, and co-working spaces. Therefore, the service will plan to continue exploring the new collaborators to iterate the service in the technology and business sectors further.

(3)Touchpoints expansion

In order to provide the best experience to the users, the touchpoints will be iterated. In particular, the support organisations would like to add new cards based on their interest area such as, technology, industry, and so on. Therefore, the cards will be expanded if the collaborators have extra needs. Additionally, the scoreboard design and instruction will be updated for recording the startups reflection moments better and more correctly. Lastly, the startup development progress monitoring system will need more investigation and discovery activities to form the standard model. In overall, the touchpoints will be frequently tested and iterated based on the service stakeholders feedback to keep the quality of user centred design.



Impact

£215 million additional investment for UK innovation centres

Further investment in the UK's internationallyrenowned Catapult innovation centres has been announced as part of the government's modern Industrial Strategy.

-GOV.UK, 2018 October

The UK government expectation is growing for the technology and innovation sector. The recent investment announcement will affect the research partner, Digital Catapult (GOV.UK, 2018). As the Reflecto.co is in progress to be used for the Digital Catapult accelerator programmes, more startups will get opportunities and support to reflect and improve their business plan based on playful activities.

In broader point of view in the startup ecosystem, Reflecto.co impact will be shown from the startups to the ecosystem further.

Design space

Provide the playful activity.
 Learn by doing.

Impact in future

 Bring the collaborative culture.
 Lower the barrier of application system.

3. Seeded user centred mindset

Improve the number of startups to launch their idea successfully, who can design the solution which will be loved by the users.



4. Organisational culture changes Change the perspective of technology innovation in the economy, address the funding goes to good startups who can design the solution for human, not for the technology.

2. Playful learning by doing activity

Train the Lean and Agile based on the user-centred design approach. Teach open minded and collaborative mindset to work with the others for finding a better solution.

1. Inclusive programme structure

Inclusive support organisation programmes create and reach out to the very early stage startups.



07 Reflection

Deep dive in the world where not related

The research topic area was a completely different world from the author's life. It was challenging that encourage the research to continue empathising with the people who are having different interests and using technical languages. Therefore, the research never stopped to study their language, system and context. Also, the author focused on the user's emotions and feelings which are the same for any background people. As a human being, the author understood and empathised their pain and worked hard for designing something good for 'human'.

Methodologies

As a service designer, the report author learnt to manage the uncertainty by focusing on the users and their problems. As the research began with the blurry problem space, to satisfy all stakeholders who are in the startup ecosystem, the research needed to approach the problem alternatively and holistically. It allowed the research to think outside of a familiar double diamond process. The combination of Lean Startup and Agile were emerged rather than planned strictly. Sometimes the research journey not explained by any frameworks or methodologies, however, it was simple on the other hand. Because designing a solution is have only one goal, make the users be happy with the new solution.



Service design implementation

The research met the new stakeholders who want to use Reflecto.co for their business growth. The author learnt that involving the stakeholders during the user centred design journey changed their perspective on collaboration, and building a trustful relationship. Validating the value of the service was a fruitful experience to deliver the service design impact on a business level.

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08 Conclusion

If we have to close the door, as designers who care about the users, we should open the another door opportunity for startups seeking help.

Establishing a new business is tough. The rejected startups who were struggling to carry out their journey, definitely need help. The research emphasised the pain of creating a new service and challenged the existing service providers for designing a better service for the startups.

As the problem space wasn't identified clearly at the beginning of the research. The key solution was that going back to the fundamentals, having a user centric mindset for people. The Lean and Agile methodologies in the research always included the startups and the support organisations to show that the importance of user centred design at the heart of developing the new service or product to deliver to the end users. Collaborative working with the startups was a special experience due to the research could capture the moment when the startups gradually open their eyes to understand the importance of user research and user centricity. The research also changed the perception of the application system and networking activities for the support organisations.

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You've got to think about big things while you're doing small things, so that all the small things go in the right direction.

-Alvin Toffler

The Sprint experience emerged the interest of playful culture to the programme staff. By engaging them through the regular practices, it would affect the application systems to be more inclusive in the future.

Reflecto.co will tackle the extremely high rate of failure in the startup ecosystem which recorded 9 out of 10. The playful and critical card game activities will train the startups to think "design as a strategy (McNabola, A. ,n.d.)" instead an aesthetic elements of their product or service.

To make a change in people's minds and organisational culture, we need to work on the small things first. When the small things have been designed strongly based on the user's needs, we can grow the technology and innovation. In conclusion, Reflecto. co is the service which envisions the technology innovation industry's growth trend with the gamified peer review workshop and consulting activities.



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Appendix

3. Exploring

3.1 Learning1) Expert interview

3.2 Empathising3) Experts email interview

4.Doing

4.2 Lean circles 1) Prototypes

5.Launch Reflecto.co cards

6.Growing

6.1 Sprint

+ Additional Expert interview

3.1 Learning

1) Expert interview

Basic learnings:

Startup stages:

The startups distributed by the maturity of the business and the size of the investment (Startup Freak, n.d.). In particular, Digital Catapult looking for early-stage startups. It means that right fit candidates should have been experienced the Seed or Angel stage successfully and have been generated the revenue through their MVPs.

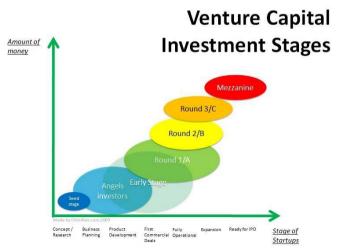


Image - Venture capital investment stages (Startup Freak, n.d.)

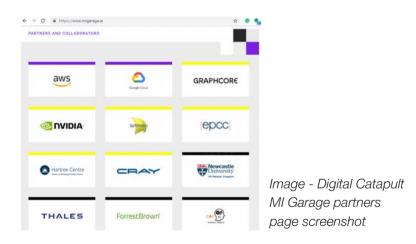
However, startup's contextual interviews found that with the startups, the present project found that the startup stages are a high-level distribution, which is easy to screen the applications to select the right fit startups for the support organisations. The startups status and needs are much more complex and various.



Accelerator program shareholders, partners, collaborators:

The research partner's accelerator programmes are divided by the specific technology types. Each programme has different sponsors and investors. Some of the sponsors or external big corporations ask for collaborating with the startups, then program managers follow up the request with their cohorts.

So the accelerator programme stakeholders are more actors than the startup and Digital Catapult. The indirect actors in the stakeholder map could be a future opportunity for designing the solution, so the stakeholder map revisited in the later stage of the research.



Digital Catapult's accelerator programme supports:

Engaging the startups to develop their business idea become concrete and stronger is the generic aim for the support organisation services. Digital Catapult especially aiming to provide the physical and digital facility to help the cohorts who can successfully validate their MVPs.

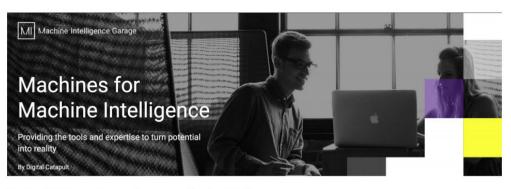
Interestingly, the UX masterclass is provided to multiple programmes, Digital Catapult XD team leading the session for teaching the user centred design to the startups. In order to observe the startup's interaction of UX masterclass, the research planned to do service safari.

Programme name	Technology type	Special supports	Generic supports
MI Garage	Machine learning, Artificial intelligence	computation power, cloud server, data scientist's advice	Pitch training, UX masterclasses, value proposition development, PR and marketing advice, Demo day
Augmentor	AR, VR	using immersive lab facilities	
5G	5G, Internet of Things	server facility	
Cyber 101	Cyber security	one day bootcamp	

Application marking criteria

Digital Catapult publishes the marking criteria to the candidates to clarify the program fits. The criteria is strongly focused on business validation, additionally includes ethic, technical ability, and so on. However, there is no criteria to check the market fit and user feedback. Therefore, the research highlighted the missing criteria and asked those criteria during the startup contextual interviews.

Image - Digital Catapult MI Garage scoring criteria



Machine Intelligence Garage - Programme Scoring Criteria

Applicants for Machine Intelligence Garage will selected using the below criteria as well as partner terms and conditions.

- 1. Business plan: You have a well defined and viable product or service
- 2. Early stage: You are an early or very early stage company
- 3. Ethics: You have assessed the ethical impacts of your solution 4. Tech plan: You have the tech expertise, team and an implementation plan
- Tech plan: You have the tech expertise, team and an implementation
 Data ready: You have the necessary data at hand ready to be used
- 6. Immediate need: You have an immediate need to access computation power



Appendix

The criteria is strongly focused on business validation, additionally includes ethic, technical ability, and so on. However, there is no criteria to check the market fit and user feedback. Therefore, the research highlighted the missing criteria and asked those criteria during the startup contextual interviews.

Further Questions:

- Would the cohorts reach to all of the required criteria?
- How many candidates can be selected through the application system?
- Which marking criteria can validate that the business idea has been

tested by the end user of their future service or product?

Incubator or Accelerator application system flowchart:

Although the support organisations established for helping the startups, the resource constraint created an application system to select only manageable amount of startups in the fixed programme period. In order to find the general application system flow, the research drew a high-level system flowchart.

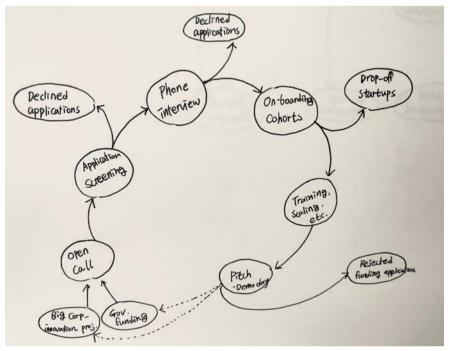


Image - A sketch of Open call application system flow with 'rejecting' stages.

The simplified system flowchart illustrated the main actors and channels when the startups successfully go through the onboarding system or fail. The research focused on the declined startups in the Empathising phase to understand the barriers of their business development procedure.

Competitor comparison

The interesting thing about the support organisation is that the program provides specific supports that could be beneficial for a certain stage or type of startups. In research, three support organisations compared to find how it affects the candidates who plan to apply for a position.

The comparison showed a wide spectrum of preferences and requirements. Therefore, the startups need to explore the right fit programmes to get the benefits. The support organisations and startups both spend time through the application processes. However, it requires additional time and resources to research suitable programmes for both.

Company name	Y combinator	Entrepreneur First	Digital Catapult
Location	US	EU	UK
Application marking criteria	- The number of founders - Previous experiences	-Speciality in the technology or the other sectors	-Speciality in the technology -Business plan -MVPs
Prefered startup stage and type	-Until Series B -Strongly recommend 2+ co- founders	-Before finding the co-founder -Having an exceptional skill	-Passed seed or angel funding stage -Generated revenue already
Benefits for the cohorts	-Intensive, tailored mentoring -Network	-Shaping the team -Finding the co- founder	-Access to physical and digital facilities -Demo day
Equity share	7%, \$150K investment	10%, \$100K investment	N/A

Table 11. Competitors comparison



3.2 Empathising

3) Experts email interview

Question categories:

- Agility: List out the general tasks and rank them from 1 to 4 based on the urgency.

- Resource: Describe the size of cohorts, applications, monitoring hours.
- Communication:

(1) Channels: Project management tools and communication channels.

(2) Contacts: External stakeholders to communicate with.

- Reporting: What is the KPIs of the programmes?
- Cohorts and stakeholders' feedback: Share the feedback based on the previous programme cohorts management experience.
- Email provided to 8 managers, received 3 replies.

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4.Repo ●	orting What is the MI Garage program KPIs? (E.g. Number of applications, how many startups graduate the program, how many startups get the funding at the end of the program)	9
	We have a range of KPIs: new products launched, new employees hired, investment received, research collaborations undertaken.	
	What is the definition of successful graduates of MI Garage program?	
	A startup who has had positive outcomes from participating in the programme as per the question above.	
	Where do you report the program performance and KPIs?	. 1
	Innovate UK and ERDF specific reporting	

Image - Google doc interiew questions and answers by the programme manager.



Findings:

- Managing the applications during the Open call period is taking a lot of resources.

- The initial screening takes average 15 minutes, and phone interview takes 45 minutes \sim 1 hour.

- The programme managers are writing the comments to the declined startups to encourage them to apply again.

- Currently the amount of application is manageable, however, it may be an issue if more candidates are applying next year.

- Managing or coordinating the masterclasses for the cohorts is not taking many resources

- The managers want to explore new activities which can help the cohorts improve their skills and creating successful funding cases through the programmes.



4.2 Lean circle

Eventor pitch:	Speed Quiz Board Person A: Person B: Image: Constraint of the second s
Feedback notes Detail number of the blank boxes:40 Hond interesting feedback notes Hond interesting feedback notes Memory Hand interesting feedback notes Hond interesting feedback notes Hond interesting feedback notes Memory Hand interesting feedback notes Hond interesting feedback notes Memory Hand in the biointering finite hond Restored and in this to biointering finite hond Restored hand in this to biointering finite hond Restored hond in the biointering finite hond <th>USR 01 Hard Bar Bar bar bar bar Bar bar bar bar bar bar bar bar bar bar b</th>	USR 01 Hard Bar Bar bar bar bar Bar bar bar bar bar bar bar bar bar bar b
	Trief Very Consult With Ward and and Ward and A
	Guarila upor tasting

Question Cards:

The research assumed that there is a different level of questions, so the number added in the cards to identify the question difficulty level. However, the users gave differnt perspective on the given questions. Based on the feedback, the research decided not to use the level system due to it's not clear for the users.

- Guerila user testing, early stage startup

founder, 30s

1) Prototype





"What if" Cards:

The 8 cards are providing 'what if' pivot questions to the startups who feel stuck in their idea progress. *However, it also removed during the user testing due to it made the early stage startups get confused what they want.*

Scoreboard:

The score marking criteria is simply given 1 to 5 based on 'how the answer makes sense' for their peers.

Elevator pitch & feedback template:

The template is a guidance of 1 minute speech if the player is not confident to introduce their business idea in elevator pitch format. The reflection template created for summarising the learning after finishing the card game.

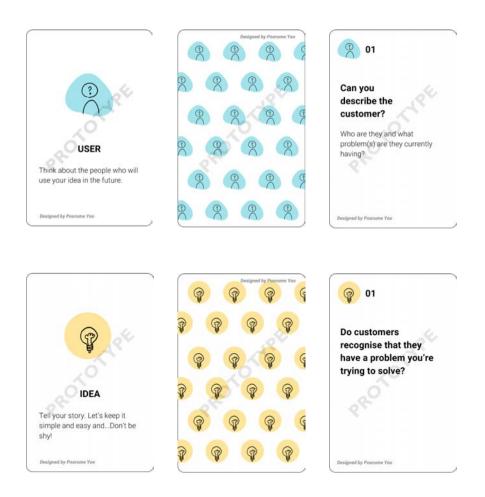
141



5. Reflecto.co

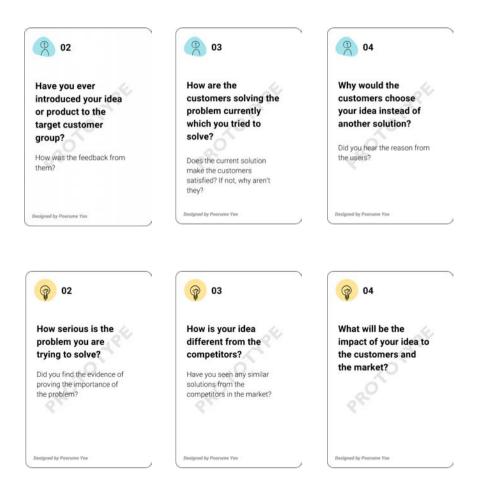
Question Cards:

The 16 cards categorised in 4 themes. The backside of the cards has a different drawing to identify the category quickly. On the left-top, the card number will help to save the score in the digital platform for the players.



Watermarks

During the Sprint, all cards has the watermarks. This is the way to protect the service idea when the research test in public. When the service fully licensed and protected, the watermark will be removed. The experience allowed the research to empathise with the startups again, as they were scared to show the prototype (or MVP) to the users when it's not secure by any rights or leagal protections.



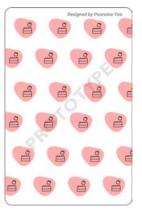
















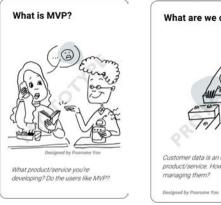


Are we fully understanding and empathising with the user?











Customer data is an evidence of product/service. How are we

6.1 Sprint

A/B testing:

Both Sprint organised in different context and objectives. Also, the venture capital programme managers wanted an experimental structure, the research collaborated with them to test a new game rules.

Company name	Digital Catapult
Objectives	Engage the cohorts to think about the user centred design by the new activity.
Participants	Total 11 (5 founders, 6 facilitators)
Dedicated outcome of the workshop	The founder's presentation about the business idea based on the user centred design activities and tools which practiced during the workshop.
Founder's startup stage	Cohort in Accelerator programme
Card game rules	Standard 1:1
Training for the facilitators	30 minutes meeting for introducing the rules with Reflecto.co creator.

Table 12. Sprints variants comparison

The new game rule is focusing on 1 founder's mentoring by multiple experts during the workshop. Each founder team up with a number of experts who has an experience or knowledge in specific sector where the founder want to launch their idea. The founder select the 4 cards from 16 questions, which is the most important challenge for them in their business. Therefore, the mentors in the founder's team can fully focus on that selected questions. (continue in next page)

Company name	Venture Capital company
Objectives	Create a collaborative atmosphere by the design prompts.
	Guide the founders to answer critical questions to improve the clarity of their business idea.
Participants	Total 25~30 (5 founders, 5 facilitators, Internal and external coaches, mentors, investors)
Dedicated outcome of the workshop	New networks between the founders and external coaches. New partner who want to build a relationship with the workshop organiser.
Founder's startup stage	Very early stage, mostly just got the idea of busines concept
Card game rules	Customised 1:x
	-Team up with the mentors to play the game.
	-Card game arranged twice for monitoring the improvement from day 1 to 2.
Training for the	15 minutes meeting for introducing the rules with
facilitators	Reflecto.co creator.



6.1 Sprint

New game rules:

Five founders invited at the workshop. More than 2 mentors paired up with the founders to playthe game and improve their business ideas together.



1. Make a team and discover Founders and mentors forming a team after the elevator pitch. Reviewing the cards.

2. Founder selects the cards

Mentors can suggest the cards which can helpful for the founders. After selecting the cards, practice the game.





7. Reflection show & tell All team will sit together and reflect each founder's workshop experience. Mainly what they learnt, what they will do next.



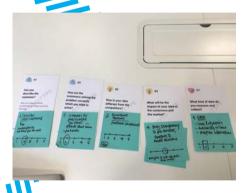
6. Second game round Founders will answer to the same cards as the first round. Mentors will give a score again.



3. First game round Founder will answer the cards which they picked. The mentors will mark the scores based on the founder's answer.

4. Analyse the score together

Time to understand the startup's strength and weakness in their ideas.





5. Clarify and improve the idea and plans

Mentors providing a very focused advice to the founder to improve their answers.

150

Additional Experts interview

Strategic designer at 'Unboxed':

Before planning the Sprint, the project has been presented to the audiences at the service design events such as, Service Design Future and Service Design Fringe Festival. Also, the strategy designer at Unboxed*, the software company was keen to review the project and gave me the feedback.

*Unboxed running the accelerator programs in South Africa as an annual social challenge. The accelerator program 'Techqala' Aiming to help the tech startups who try to solve the local social issue in South Africa.

Through the interviews, the research generated various insightful questions.

- Market expansion opportunity
- Operational capability in various size organisations
- Card game scoring system logic

In particular, the expert showed an interest in the activity, however, he advised that the activity can be replaced by good mentors or the other activities. The interview addressed the research to focus on building a unique value of service development, instead of discover the new market in a too early stage of idea.



Funding and Talent Associate at 'Entrepreneur First':

In order to discover the incubator organisation's need, the research visited 'Entrepreneur Frist' incubator and accelerator programme staff. The staff introduced that how their organisation trust the autonomous mindset of their cohorts. However, as they are currently looking for new activities to engage their cohorts, they've been interested in Reflecto.co idea.

In future, if the game rules and materials more developed, the incubator programmes would be an new stakeholder to test the value of Reflecto. co.

Thank you.





Poorume Yoo Reflecto.co A gamified peer review workshop for the early stage technology startups Partnered with Digital Catapult