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INDUSTRIAL SERVICE DESIGN

Toolkit for Advanced Service Design (II edition)

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All the templates of this toolkit can be downloaded from:
https://dbz.mondragon.edu/es/proyecto-ind-servdes

The toolkit IND-SERVDES has been developed by *Diseinu Berrikuntza Zentroa* (DBZ), with the colaboration of the Innovation-Management-Organization (IMO), both from Mondragon Unibertsitatea. With the support of the Programme to promote competitive empowerment, sustainability and the collaboration of the business network of Gipuzkoa:

IND-SERVDES II is a toolkit to assist industrial companies in advanced service design through participatory workshops.

Mondragon Unibertsitatea Escuela Politécnica Superior

DBZ DISEINU BERRIKUNTZA ZENTROA

Gipuzkoako Foru Aldundia
Ekonomia Sustapeneko, Landa Inguruneko eta Lurralde Orekako Departamentua

Diputación Foral de Gipuzkoa
Departamento de Promoción Económica, Medio Rural y Equilibrio Territorial

IND-SERVDES II

IND-SERVDES is geared to industrial companies that want to develop advanced services...

...but it was especially created bearing in mind the people in charge of leading such processes in those companies:

On Site Service Specialist   Service Delivery Network Engineer   After-sales Service Specialist   Service Coordinator   Service Marketing Manager   Field Services Engineer   Head of Service   Customer Management System Manager   Customer Experience Manager   Business Manager   Service Unit Manager   Strategic Marketing Manager   Premier Service Manager Service Development   Commercial Services Coordinator   Service Installation Specialist   Service Delivery Solutions Architect   Customer Manager   Quality Service Manager   Remote Service Specialist   TSS Engineer Specialist Product & Service Development   Procurement Manager   Customer Service Representative   Digital Services Transformation Lead   Service Manager IT   TSS and After-sales Service Manager   UX Manager   Inhouse Service   TSS Manager   Service Operations Manager   Service Delivery Manager   O&M Service Manager   Service Liaison Manager   Customer Support Specialist   Service Manager   Change Management Service Manager   Center Operations Manager   Service Integration Manager   Area Sales Manager   Customer Service Trainee

Glossary of terms.

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Some basic concepts for advanced service design:

Service:	the application of competences, knowledge and skills through actions and customized processes for the benefit of a third party.
Advanced services:	services where the provider engages in in-depth continuous support to the customer through the delivery of functional values and results within a specific period of time.
Servitization:	the innovation of an organization's capabilities and processes to create value through a shift from selling products to selling advanced services.
Service concept:	the abstract conception of service. What customer needs it solves and how it solves them.
Service processes:	the activities that underpin the service. The processes that are visible to the customer are front-end processes, while those that are not visible to the customer are back-end processes.
Service system:	every technological and physical infrastructure, as well as the human governance structure that supports service processes.
Service design:	the activity of planning and organising people, infrastructure, communications and material components of a service in order to improve its quality and interaction between service provider and customer.
Service touchpoint:	every contact point, deriverable and every evidence (physical or digital) in the interaction between provider and customer.
Service moment:	episode in which the customer comes into contact with any aspect of the company and creates a feeling about the quality of its service. A service moment is built through a combination of diverse service touchpoints.
Service interface:	the sum total of service moments.

Advanced services are characterised by...

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Advanced services **assist your customer's activity**, not your product's activity.

In advanced services, **products are platforms** for service provision.

In advanced services, **you agree on a given functionality or outcome with the customer**, for a specific period of time.

Advanced services **use ICTs as enabling technologies**. They are the means, not the aim.

Advanced services **are relational**, not transactional. Lasting, ongoing and close relationships are established with the customer.

In advanced services, **the customer is an active resource**, they give the provider access to their resources (data, people, facilities, products, etc.).

Advanced services create **ecosystems**, their value is co-created through collaboration among various agents.

You can find more information about what advanced services are in:
Baines, T., & Lightfoot, H. (2013). *Made to serve: How manufacturers can compete through servitization and product service systems.* *John Wiley & Sons.*

To design advanced services...

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Build a holistic comprehension of your customer's needs...

Invest time and effort understanding the needs of the customer beyond the requirements of the product.

Analyse the customer's needs in terms of function.

Develop skills to empathise with the situations that your customer experiences.

Put the emphasis on the processes that create value for your customer.

Create work frameworks to facilitate joined understandings of the roles and responsibilities of people from different levels of the customer's organisation.

... and design accordingly:

Define the service progressively, from the general concept to the fine detail of every service operation.

Materialise the intangible value of your service through a thorough planning of delivery of touchpoints.

Design a proposal able to attract people from different levels of the customer's organisation.

Design a proposal that enables to establish deep-rooted relationships with people from different levels of the customer's organisation.

Develop more humane service proposals, centred on the needs of people from different levels of the customer's organisation.

IND-SERVDES Toolkit.

This toolkit has been designed to be implemented through five participatory workshops:

T0: Start.
The first workshop is the starting point in which the organisation has to decide if servitization could be a possible strategy for its business.

T1: Explore.
The second workshop's goal is to specify which service will be developed and who are the people that will be involved in this service.
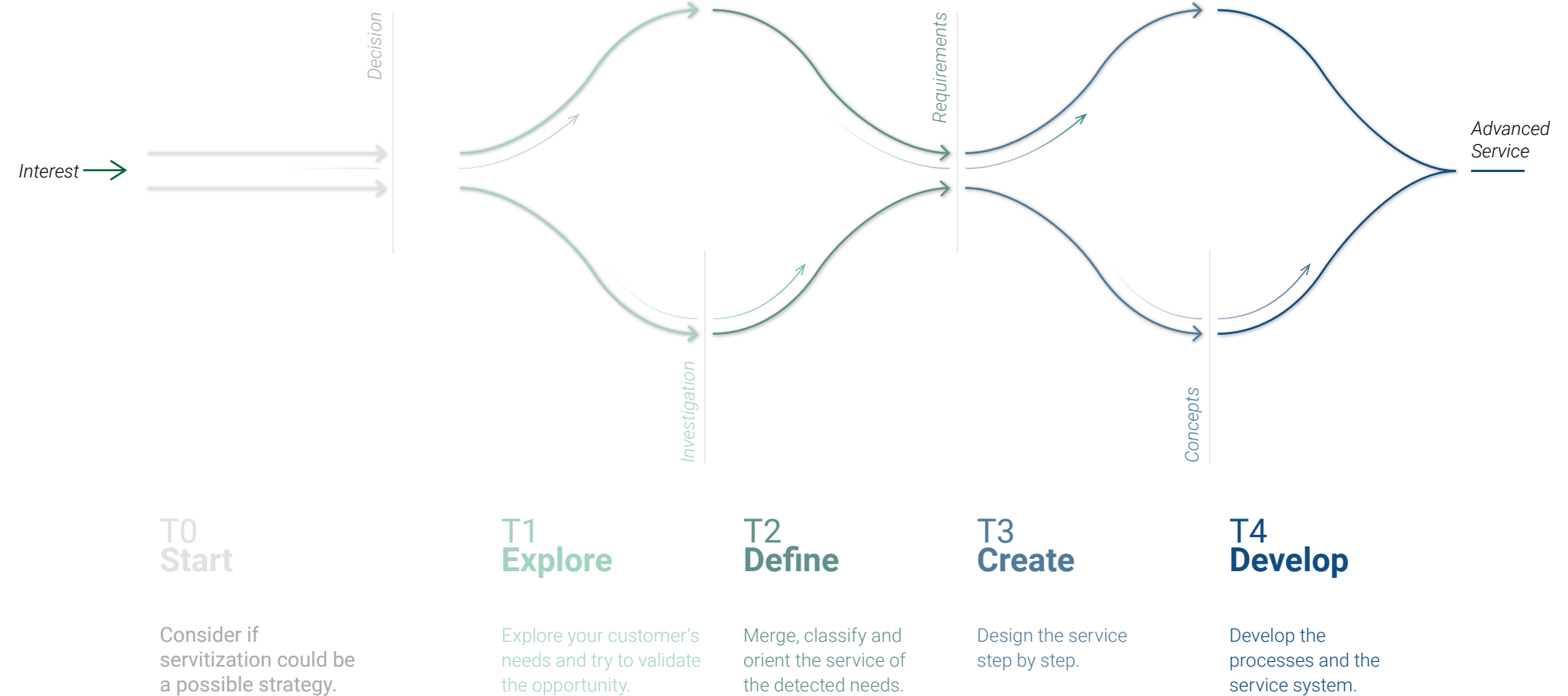
T2: Define.
The idea of this workshop is to gather and classify the different needs of the people involved.

T3: Create.
This workshop is focused on generating ideas and starting designing the experience of the service step by step.

T4: Develop.
In this last workshop, the organisation develops all the internal processes to make the service work.

Interest →

Decision

Requirements

Advanced Service

Investigation

Concepts

T0 Start	T1 Explore	T2 Define	T3 Create	T4 Develop
Consider if servitization could be a possible strategy.	Explore your customer's needs and try to validate the opportunity.	Merge, classify and orient the service of the detected needs.	Design the service step by step.	Develop the processes and the service system.

The facilitator and participant people.

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In order to carry out the workshops in your company you will need at least one facilitator and a team of people representing the different areas of the company (management, engineering, commercial, TSS, etc.). We suggest a team of five or six people per facilitator.

The facilitator

The facilitator is the "conductor of the orchestra". The person in charge of the optimum development of the process.

Sets the general objectives, the objectives of each workshop and the objectives of each exercise.

Provides the team with tools to reflect, generate ideas, expression and review.

Shapes and elaborates the ideas of the team, opens the way for the debate and leads the sessions.

Participant people

The participants obtain the position of experts on the basis of their own experience and knowledge.

They develop knowledge, generate ideas and project concepts based on their experience and knowledge.

They are responsible for the develpment of the contents.

They respect and build on the others' ideas.

In the sessions, they acknowledge the direction of the facilitator.

Advice to be a good facilitator

Plan: write down the objectives and the script before each session. Assign a specific time period to each exercise. Share the objectives and the script with the rest of the team before the session. However, be flexible with the predefined times if you see that relevant issues are being discussed.

Conduct: the process is your responsibility. Accompany the members of the team on a journey motivated by themselves.

Practise active listening: listen, focus on the person who speaks and provide responses (feedback).

Be enthusiastic: maintain your energy throughout each session.

Be empathetic: each person will see "reality" from a different point of view. Try to "enter into the reality of the other person" to understand what they say, do and feel.

Be diplomatic: conduct the conversations avoiding negative disputes and direct them towards productive debates.

Be patient: strive for the team to reach the bottom of the relevant issues, even if it takes time.

Breaks: introduce breaks in the sessions to keep the team focused and motivated. Time the periods between sessions.

To know more about facilitation of creative sessions:
Sanders, E. B. N., & Stappers, P. J. (2012) *Convivial toolbox: Generative research for the front end of design.* Amsterdam: BIS.

Ice-Breakers.

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Ice-Breakers are facilitation exercises meant to help the members of a team start the process. They are commonly introduced as games to activate the mind, and to break barriers motivating the people of the team to participate actively and without inhibitions. You can use Ice-Breakers to build a team, to sharpen ingenuity or to energise:

The magic marker
To build a team

You will need groups of 4-6 people, a marker, a thin string and a big sheet of paper (e.g. A1 size). Tie to the marker as many strings as members of the team. The facilitator will propose an animal and the group will have to draw it operating the marker with each member of the team moving only their corresponding string endpoint. Finally, the drawing will be shown and the team experience will be valued. It is an exercise where communication and confidence are practised. The approximate duration is 10 minutes.

Paper airplanes
To sharpen ingenuity

As many people as wanted can participate. It is necessary to have a large room, since the objective is to throw a single sheet of paper as far as possible. A single sheet will be given to each member of the team and they will have to transform it (fold it, wrinkle it...) as they wish, to achieve such objective. When all the artifacts are ready, each person will throw their own paper plane from a pre-arranged place and the one reaching furthest is the winner. It is an activity whose purpose is to "activate the brain" and concentration. The approximate duration is 10 minutes.

Pass the ball
To energise

It is an exercise for teams of 5-10 people. The entire team will stand up and form a circle. They will be asked to perform a simple task: "all the people have to touch the ball one at a time in the shortest time possible". The facilitator will time each attempt. First, they will start passing the ball from hand to hand, they will try to do it more quickly, they will rearrange themselves... until they realise that the quickest way is to leave the ball on the floor and that each participant touches it successively. The interest of people is awakened with this exercise, they rise from their chair and they energise themselves for subsequent activities. The approximate duration is 10 minutes.
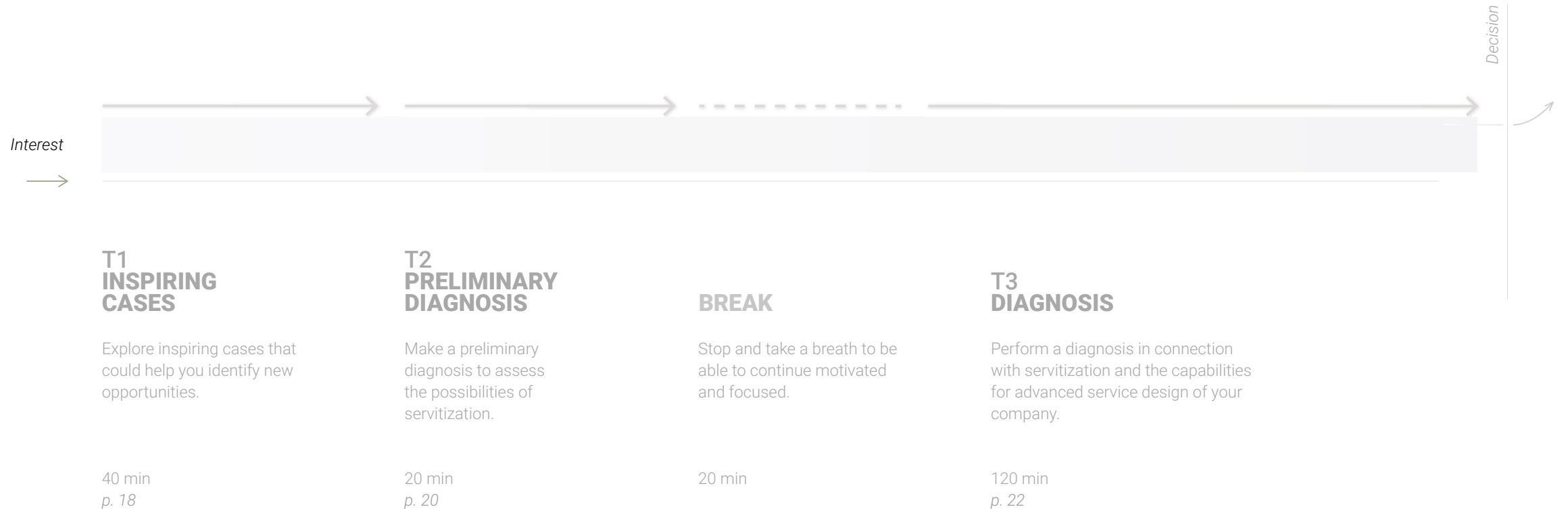
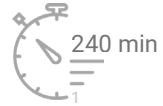To find more examples and to know more about Ice-Breakers:
Gray, D., Brown, S., & Macanufo, J. (2010). *Gamestorming: A playbook for innovators, rulebreakers, and changemakers.* O'Reilly Media, Inc.
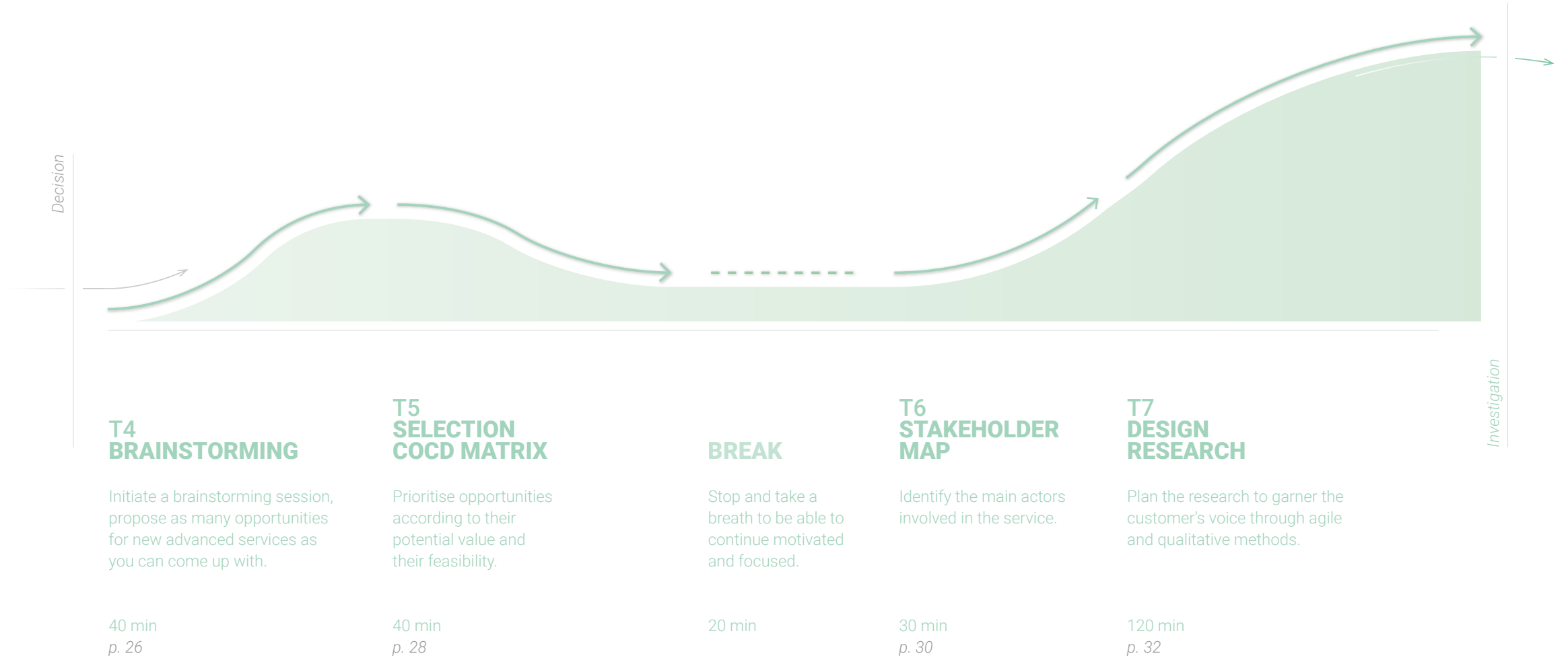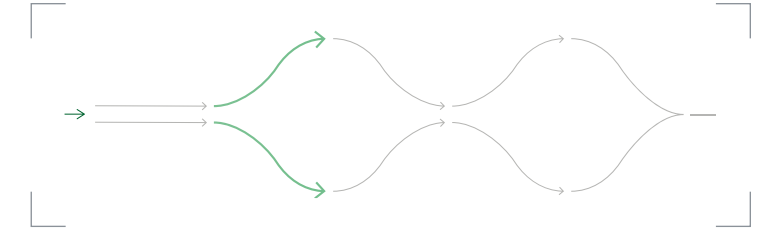
00
START

200 min
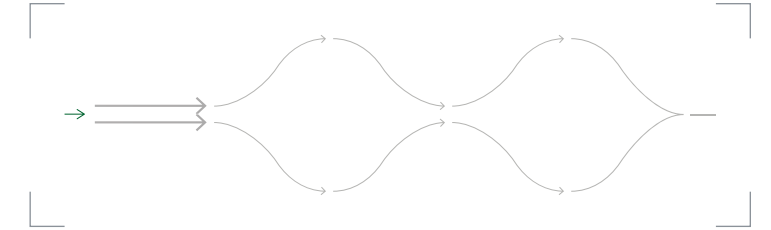
Objective.

———

Diagnose the state of the organisation as regards servitization. Reflect and evaluate the possible servitization route, without the need to specify an opportunity or a possible service. This should be the starting point for immersion into the advanced service development process.
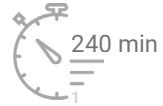
Interest

Decision

T1
INSPIRING CASES

Explore inspiring cases that could help you identify new opportunities.

40 min
p. 18

T2
PRELIMINARY DIAGNOSIS

Make a preliminary diagnosis to assess the possibilities of servitization.

20 min
p. 20

BREAK

Stop and take a breath to be able to continue motivated and focused.

20 min

T3
DIAGNOSIS

Perform a diagnosis in connection with servitization and the capabilities for advanced service design of your company.

120 min
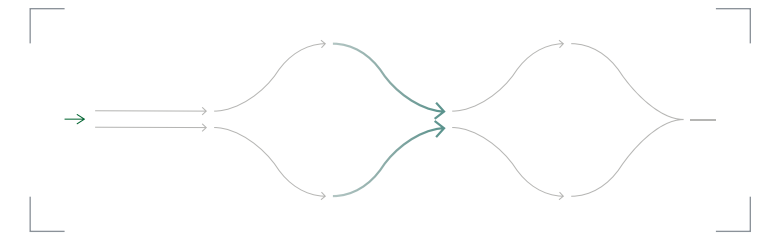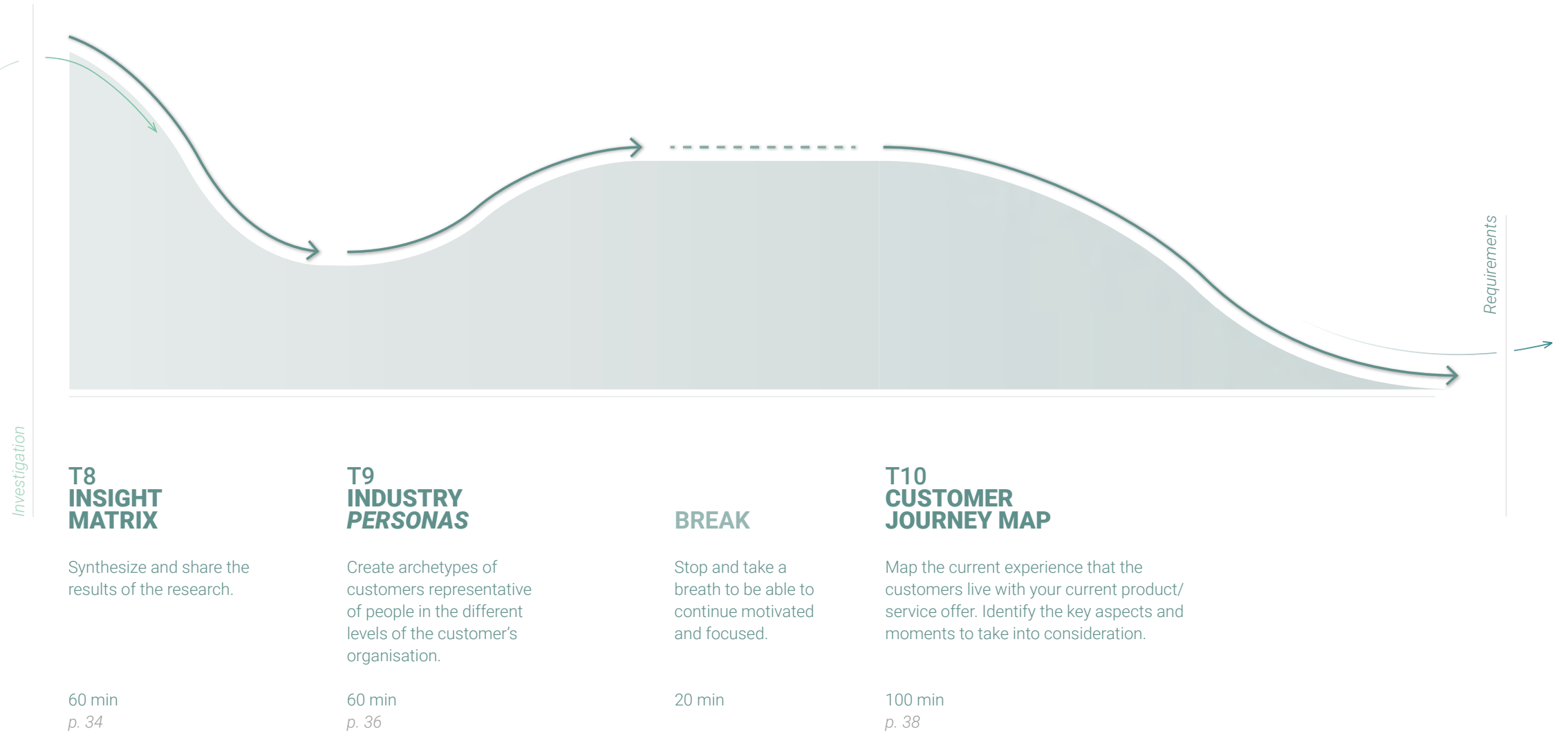*p. 22*

01

EXPLORE

240 min

Objective.

———

Identify a service opportunity to work on, as well as the people involved in it. An opportunity for a new advanced service can derive from: a new need or a not/badly covered need of the customer, the appearance of new consumer trends, a new technology, etc.
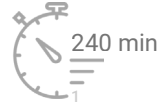
Decision

Investigation

T4
BRAINSTORMING

Initiate a brainstorming session, propose as many opportunities for new advanced services as you can come up with.

40 min
p. 26

T5
SELECTION
COCD MATRIX

Prioritise opportunities according to their potential value and their feasibility.

40 min
p. 28

BREAK

Stop and take a breath to be able to continue motivated and focused.

20 min

T6
STAKEHOLDER
MAP

Identify the main actors involved in the service.

30 min
p. 30

T7
DESIGN
RESEARCH

Plan the research to garner the customer's voice through agile and qualitative methods.

120 min
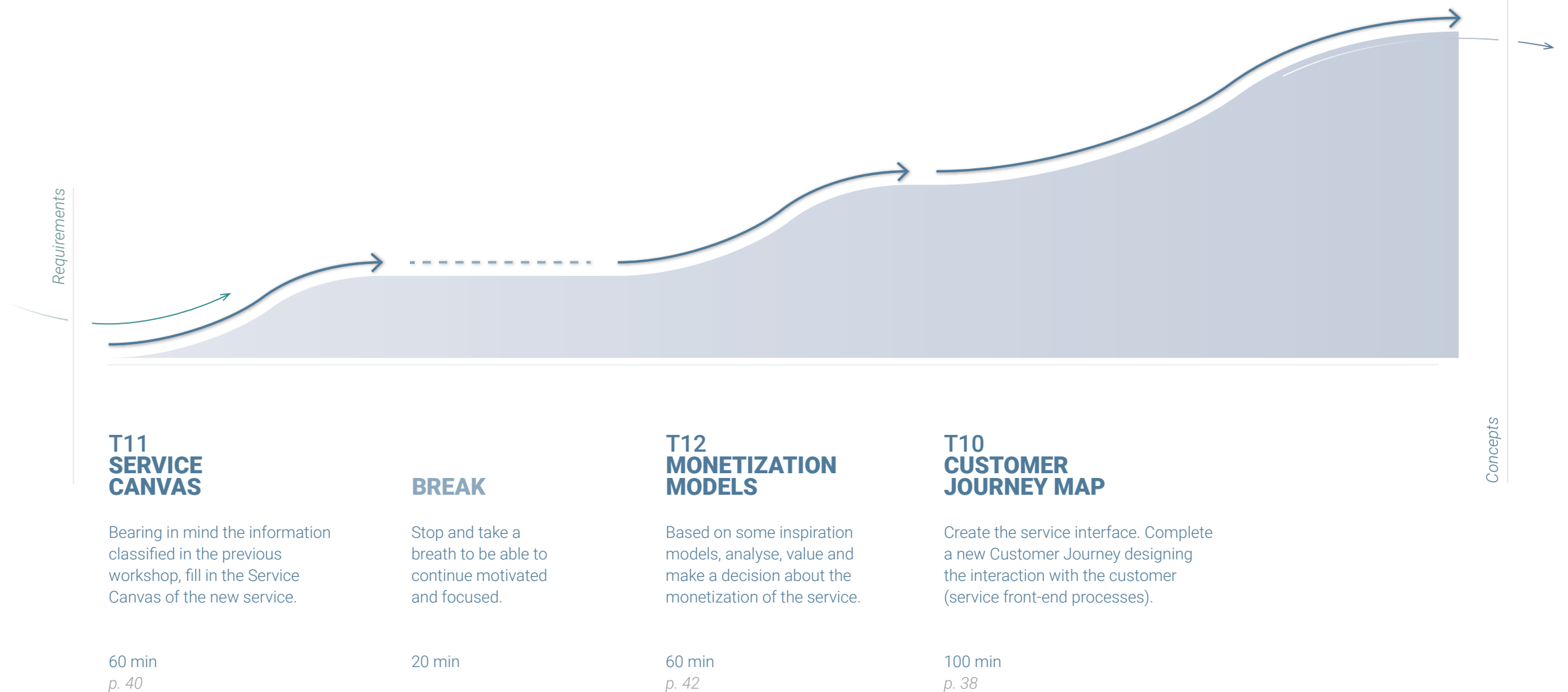*p. 32*

02
DEFINE

240 min

Objective.

———

Arrange and classify the information collected about the customer. Visualise the identified insights through graphic supports that allow acquiring a good holistic interpretation of the customer's needs in order to focus the effort on those aspects that are really relevant.
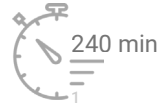
Investigation

Requirements

T8
INSIGHT MATRIX

Synthesize and share the results of the research.

60 min
p. 34

T9
INDUSTRY *PERSONAS*

Create archetypes of customers representative of people in the different levels of the customer's organisation.

60 min
p. 36

BREAK

Stop and take a breath to be able to continue motivated and focused.

20 min

T10
CUSTOMER JOURNEY MAP

Map the current experience that the customers live with your current product/ service offer. Identify the key aspects and moments to take into consideration.

100 min
p. 38

03

CREATE

240 min

Objective.

———

Generate new ideas of advanced services. Focus on the service concept (what customer need the service solves), on the interaction it generates with the customer (service interface) and how the service delivers value (through which touchpoints and in which sequence).

Requirements

Concepts

T11
SERVICE CANVAS

Bearing in mind the information classified in the previous workshop, fill in the Service Canvas of the new service.

60 min
p. 40

BREAK

Stop and take a breath to be able to continue motivated and focused.

20 min

T12
MONETIZATION MODELS

Based on some inspiration models, analyse, value and make a decision about the monetization of the service.

60 min
p. 42

T10
CUSTOMER JOURNEY MAP

Create the service interface. Complete a new Customer Journey designing the interaction with the customer (service front-end processes).

100 min
p. 38

04
DEVELOP

240 min

Objective.

Finish with the development of the service. Define the internal back-end processes that allow to offer the designed experience, as well as the system that supports the service. In addition, the process should be finalised by defining certain commitments about the contact points between the organisation and the customer (both physical and digital).

Advanced service
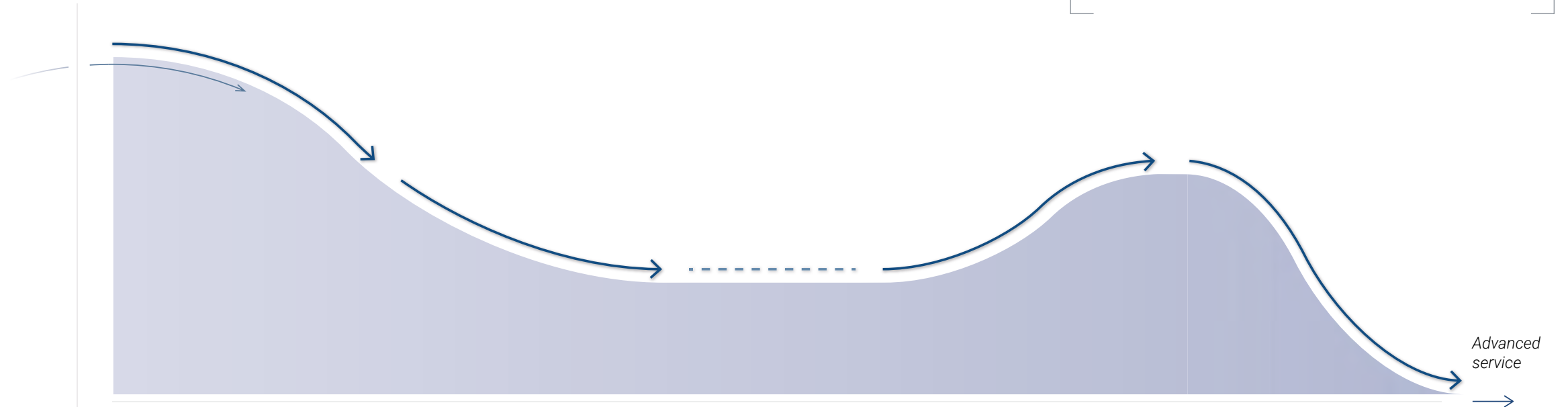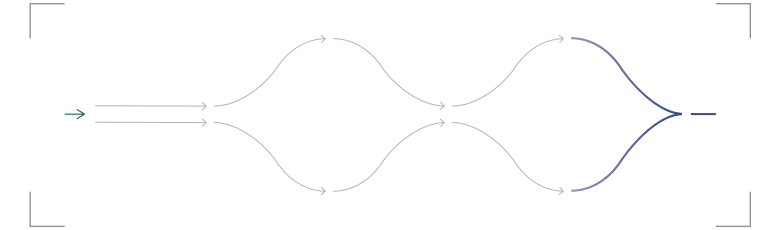
Concepts

T13
BLUEPRINT

Define all the back-end processes that support the service interface.

60 min
p. 48

T14
FLOWCHART

Define in detail all the front and back-end processes that support the service.

60 min
p. 50

BREAK

Stop and take a breath to be able to continue motivated and focused.

20 min

T15
TOUCHPOINT
MATRIX

Define all the contact points of the service, as well as all the internal commitments.

50 min
p. 52

T16
COST
ESTIMATION

Perform a first approach to the cost structure that will support the service.

50 min
p. 54

T1

INSPIRING CASES

In this template you can find some cases of servitized companies that offer advanced services. Use them to inspire the team and search for analogies that could help your company. You can find more examples in: Lay, G. (Ed.). (2014). *Servitization in industry. Springer*

Rolls Royce

Rolls Royce does not sell airplane engines, but "Power by the hour". Customers pay for the flight hours of the engine.

Philips

It does not only sell lamps, it sells "light". It offers, LED lighting as a service at Schiphol airport in Amsterdam among others.

Tetra Pak

It not only offers packing and processing solutions for food and drinks. It advises its customers in the optimization of their production processes.

HILTI

It not only focuses on selling hand tools for professionals. It also offers services for the management of the set of tools of the customers.

Orona

This company not only sells lifts. It also focuses on offering services that guarantee the availability of those products.

Michelin

It not only sells tyres, "Michelin Fleet Solutions" offers a service of payment per kilometer, as well as evaluations of the state of the tyres, etc.

Apple

It not only sells hardware. With the aim of becoming a service company, it sells its new "Apple Streaming TV" service in Samsung televisions.

Audi

It not only sells vehicles. It offers the "Audi Unite" service among others, through which the use of new Audi cars is shared among different families.

Danobat

It does not manufacture just any type of machine. Each one is unique, tailor-made for the customer. It offers diagnostic services, remote assistance and/or advanced training for their machine operators, etc.

Siemens Gamesa

It not only manufactures wind turbines. It offers different services to improve the customer's processes, as well as training, operation of wind farms, or even the promotion activity itself.

MAN

Apart from selling lorrys the new "MAN Digital Services" offers tailor-made digital solutions, meaning that it optimises the customer's business with a simple reservation in the "Marketplace" app.

Alfa

It not only sells sewing machines. It also offers assistance to cope with the problems of users during the sewing activity, participation in workshops and contests, and the option of visiting their museum.

Xerox

This company not only focuses on photocopiers, it also offers pay-per-sheet services, as well as services of production and management of documents, and services for the subcontraction of business processes.

Vidrala

It not only supplies containers manufactured with different types of glass. Through its new "Encirq" service, it produces, fills in and takes care of logistics. That way fulfilling a large part of its customers' operations.

Bimbo

It not only sells bread, it is an example of integration of services, as it distributes directly to the selling point to ensure that its products are fresh, and benefit from its logistical and comercial capabilities.

CAF

It not only offers products that encompass rolling materials and railway components. It also makes a well-developed offer of services available for refurbishment of railway carriages.

Dell

It not only sells hardware. It offers training for end users, data center administration simplification services, etc.

Caterpillar

It is not only a company of machinery for construction use. It includes, remote tracking services, 24h location of the equipment, monitoring, etc.

Urola

It not only offers machines for the manufacture of containers. It offers services to improve the performance of the customer among others.

Repsol

Apart from being an oil company, it offers a mobile payment "Waylet" app, an auto cleaning system, pick-up of Amazon orders, etc.

T2

PRELIMINARY DIAGNOSIS

Before continuing with the IND-SERVDES toolkit we propose you reflect whether servitization is actually a convenient strategy for your business. This tool includes several questions classified into two broad groups: external factors and internal factors. Answering the those questions will help you implement a preliminary diagnosis of the current situation of the company and its environment; thus, if the answers to those questions tend to be mostly "YES", this might mean that servitization is a suitable strategy for your company. That said, to keep on the path to servitization and define an advanced service, you should go ahead reading this toolkit.

No.	EXTERNAL	YES/NO
1	Do our customers explicitly demand new services?	
2	Do our direct competitors and/or benchmark companies in our sector have an advanced service offering?	
3	Do our competitors and/or benchmark companies in our sector manage to differentiate themselves by their service offerings?	
4	Do our competitors monetize services that we deliver for free?	
5	Do our customers demand customised/highly personalised products from us?	
6	Do we have continuous interactions before, during and after the sale of our products with our customers?	
7	Do we carry out support/service actions before, during and after the sale of product that we do not manage to monetize?	
8	Do we actively intervene in the end of life of our products?	
9	Do our relationships with customers tend to be increasingly symmetrical?	
10	Do we have a loyal customer portfolio?	
11	Do we have access to the customer's resources (to their plants, processes, people, technologies, etc.)?	
12	Do our customers involve us in their innovation projects?	
13	Do our clients perceive us as an innovative company? Do they perceive us as a company that takes risks and offers new proposals on a recurring basis?	
14	Do our customers not value the ownership of our product as much as the demand for the features that this product offers?	
15	Are we operating in a sector with high levels of technological maturity?	

Based on the following: Baines, T., & Lightfoot, H. (2014). Servitization of the Manufacturing Firm: Exploring the Operations Practices and Technologies that Deliver Advanced Services. *International Journal of Operations & Production Management, 34*(1), 2-35.
Ziaee Bigdeli, A., Baines, T., Schroeder, A., Brown, S., Musson, E., Guang Shi, V., & Calabrese, A. (2018). Measuring servitization progress and outcome: the case of 'advanced services'. *Production Planning & Control, 29*(4), 315-332.

No.	INTERNAL	YES/NO
1	Do we currently have an offer of basic services on the market?	
2	Do the basic services we currently offer allow us to have recurring income during the lifecycle of the product or do they generate differentiation from the competitors?	
3	Has the relative weight of income from our basic services tended to increase?	
4	Do we have a large and controlled product base installed?	
5	Are our products aimed at improving our customers' processes/products?	
6	Do we have customer-focused product and service design processes? For example: We apply methods for the detection of our customers' needs in a systematic and recurrent way, our customers participate in co-creation processes for the generation of new ideas and testing of them.	
7	Do we have the capacity to develop new technologies to support an advanced service offering (IoT, Big Data, AI, etc.)?	
8	Do we explore ICT (databases, integrated communications, etc.) to improve our processes and products?	
9	Do we have enough financial muscle to support new investments, acquire new resources and/or finance our customers to purchase our products?	
10	Do the people in our organisation have a vocation for innovation and a high willingness to change?	
11	Do the people in our organisation have a customer-oriented culture and a vocation for customer service?	
12	Do we consider ourselves a flexible organisation and do we have the capacity to change our structures and processes quickly?	
13	Do we have mechanisms for participation and communication to achieve a shared vision throughout the organisation?	
14	Do we have a commercial network that is used to and prepared to communicate the intangible, emotional and relational aspects of our offer?	
15	Do we have resources and/or legal assistance to develop new contracts and/or specific clauses for service offerings?	

T3

DIAGNOSIS

Here you will find a series of questions that will help you position your company in relation to your maturity in servitization and advanced services. Position it in its present state and consider the target position in three years time. Discuss about the difficulties that you could face to achieve the desired position. You can use the diagrams to visualise results.

TOPIC	FOCUS	SUBTOPIC	QUESTION
SERVITIZATION STRATEGY	What are the objectives of the organisation regarding the undertaken servitization process?	Maturity of the servitization	To what extent do we have a clear servitization strategy? Are we aware of why we have undertaken this transformation?
		Risks	To what extent are we aware of the risks that we have taken/are taking when undertaking this transformation?
		Value creation	To what extent do we know which services are the ones that we have to offer so that they are valuable for the customer?
		Turnover	To what extent are the advanced services a meaningful source of income for our organisation?
CLIENT - MARKET	To what extent do we know of customer needs?	Customer needs	To what extent do we know of customer needs? To what extent do we know to adapt that information to our offer of advanced services to fulfill such needs?
		Quantitative methods to capture customer needs	To what extent do we apply and have quantitative processes (Big Data, Data Analytics...) integrated to capture customer needs?
		Qualitative methods to capture customer needs	To what extent do we apply and have qualitative processes (interviews, observations...) integrated to capture customer needs?
		Market surveillance	To what extent are we able to detect and react to new advanced services offered by our competitors?

PEOPLE AND ORGANISATION	To what extent is our organisation ready to offer advanced services?	Shared vision of the servitization strategy	To what extent are our workers informed of and share the servitization strategy?
		Service culture and vocation	To what extent do our teams have a service vocation? (e.g. they respond to several customer requests, they have a flexible behavior towards customer demands and they empathise with their needs)
		Willingness to change	To what extent are we able to make changes in our culture?
		Competences and abilities	To what extent are our workers able, trained and/or qualified to design, develop and offer advanced services?
NEW ADVANCED SERVICE DEVELOPMENT	To what extent do we have a clear and integrated process for the innovation and development of advanced services?	Methodology for Service Design	To what extent do we have and follow a clear and defined process to design and develop new advanced services?
		Tools for Service Design	To what extent do we have and use specific tools for new advanced service design and development?
		UX and UI (User Experience and User Interface)	To wat extent do we have knowledge about User Experience (UX) and User Interface (UI) to materialise new advanced services in Human-Machine Interaction (HMI) platforms?
		Non-technological investment in advanced services	To what extent do we invest resources in new advanced service design and development?
ENABLING TECHNOLOGIES	To what extent have we developed the technologies that enable us to offer advanced services?	IoT and Cyberphysic Systems	To what extent have we developed IoT and/or Cyberphysic Systems that enable us to offer advanced services?
		Cloud Computing	To what extent have we developed Cloud Computing technologies that enable us to offer advanced services?
		Big Data, Data Mining and Data Analytics	To what extent have we developed Big Data, Data Mining and Data Analytics technologies that enable us to offer advanced services?
		Artificial Intelligence (AI) and Machine Learning	To what extent have we developed Artificial Intelligence technologies that enable us to offer advanced services?
		Additive manufacturing, 3D printing	To what extent have we developed Additive manufacturing and/or 3D printing technologies that enable us to offer advanced services?
		Collaborative Robotics	To what extent have we developed Collaborative Robotics technologies that enable us to offer advanced services?
		Virtual Reality (VR) and Augmented Reality (AR)	To what extent have we developed Virtual Reality and/or Augmented Reality technologies that enable us to offer advanced services?
DEPLOYMENT OF SERVICE OPERATIONS	Does the market perceive us as an organisation providing advanced services? To what extent are we able to deliver advanced services effectively and efficiently?	Marketing. Perception of the market	To what extent do our customers perceive us as an organistion providing advanced services?
		Organisational structure	To what extent is our organisation correctly structured to deliver advanced services?
		Service delivery processes	To what extent are our processes prepared to deliver advanced services?

T3

DIAGNOSIS

Punctuation guidelines.

1 Indefinite
2 Planned
3 Developed
4 Implemented
5 Optimised

⬤ Current situation

⬤ Ambition for the following 3 years
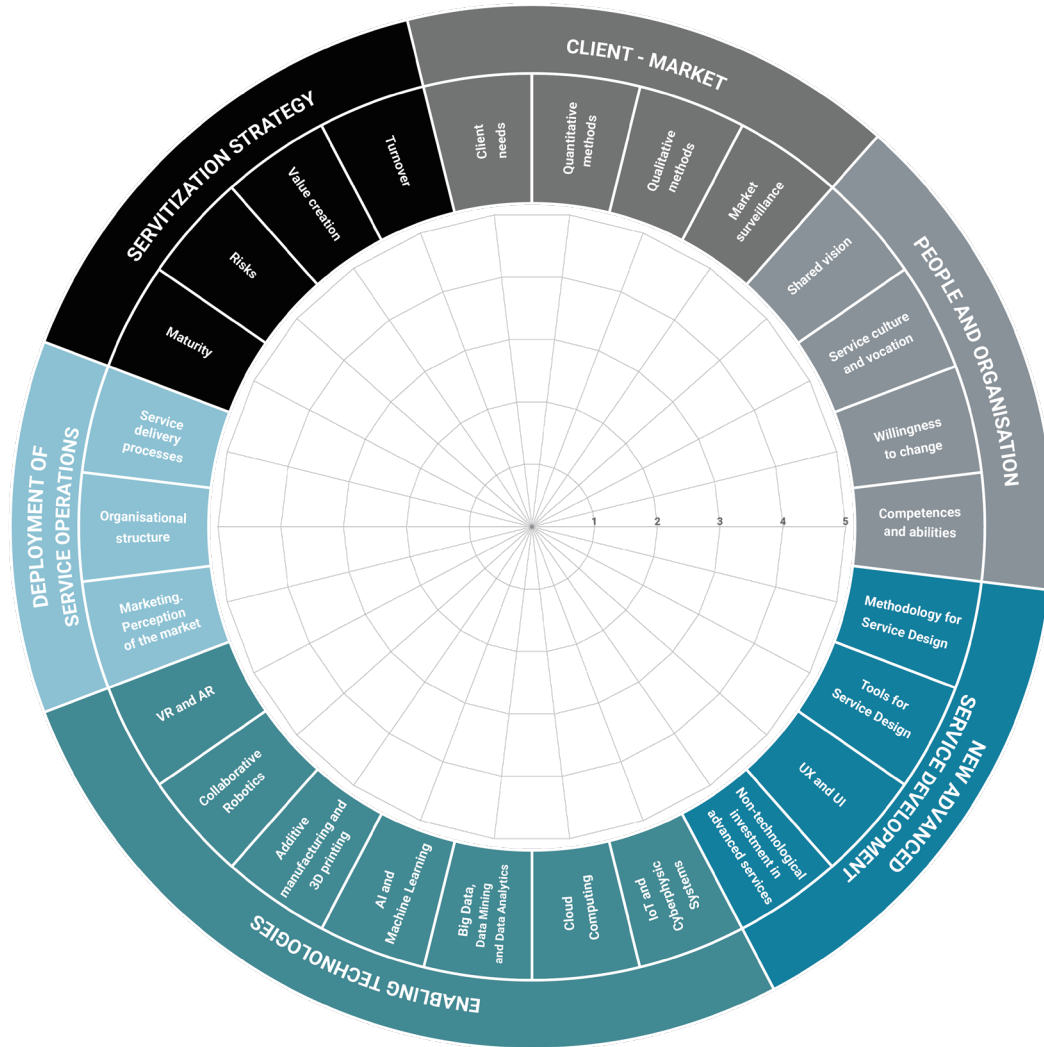
Punctuation of difficulty.

1 Difficult
2 Average difficulty
3 Easy

Priority.

1 No priority
2 Average priority
3 High priority

⬤ Difficulty

⬤ Priority
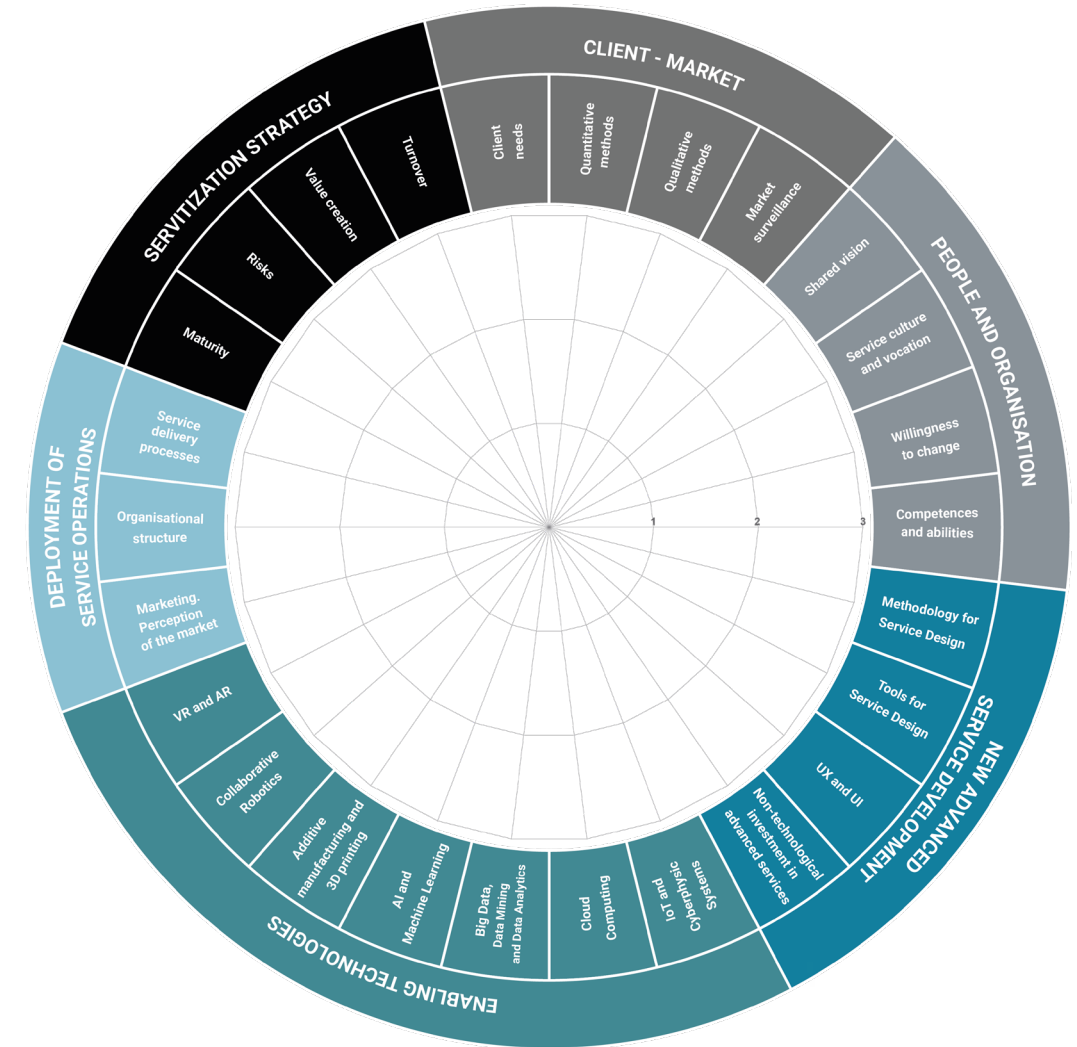
T4

BRAINSTORMING

After finishing (T00: Start) workshop, you need to start thinking, imagining and visualising new opportunities to offer advanced services. When sharing your ideas reflect on how your current services could evolve towards advanced services. Propose opportunities taking into account the service trinomial: (i: concept) what the new services associated with this opportunity could offer the customer; (ii: process) how these services would work and (iii: system) what they would need to become real.

	Services oriented to the activity of the **product**		Services oriented to the activity of the **customer**
	Basic	Intermediate	Advanced
Availability and performance	Spare parts	Repairs and TSS Preventive maintenance	Predictive maintenance
Integration	Distribution	Installation Launching	Monitoring
Design and engineering	Personalisation	Custom design	Co-design
Continuous improvement and renovation	Update	Renovation	Retrofitting
Payment variability	Payment per availability	Payment per use	Payment per result

Adapted from: Revilla, I. (2014). Servitization in Basque manufacturing firms: Applicability of literature conclusions and design of a new framework for decision making. *3rd International Business Servitization Conference*. Bilbao.

Guidelines to contribute ideas:

1. Do not judge other people's ideas.

2. One conversation at a time.

3. Build upon the ideas of others.

4. Remain concentrated on the topic.

5. "Unusual" ideas are also valid.

6. Be visual (sketch, make diagrams, storyboards, etc.)

7. Focus on the quantity of ideas.

Service trinomial:

Concept

What is the service idea?
What customer needs does it address?

Service opportunity.

Process

How does the service work?

System

What technology, artifacts and people does it require?

Adapted from: IDEO (2011, February 23). Tips on Better Brainstorming.
Retrieved from https://challenges.openideo.com/blog/seven-tips-on-better-brainstorming

T5

SELECTION: COCD MATRIX

Summon all the opportunities you have launched in the previous step (T4) in the COCD Matrix (T5). If you have "WOW" ideas perfect! Otherwise, try to formulate "NOW" and "HOW" ideas. Ask yourselves how you can modify them to be "WOW" ideas.

X.
————

Ideas that are not valuable nor feasible in the short, medium or long term.

How.
————

Ideas that you consider valuable, but that are not feasible in the medium or short term.

Now.
————

Ideas that are feasible in the short term, but that are not so valuable.

Wow.
————

Ideas that you consider valuable and also feasible in the short or medium term.

More information about COCD Matrix in:
Byttebier, I., Vullings, R., & Spaas, G. (2007). *Creativity today: tools for a creative attitude; for business, education, industry, training, development, government, consultats, workers, thinkers, meetings...* BIS.

FEASIBLE

X   HOW

NOW   WOW

VALUABLE

T6

STAKEHOLDER MAP

At this point, you already have a well-defined opportunity regarding the service to be developed. Thus, before continuing, it is important to consider who the people involved in this service are.

As the service has not been conceptualised yet, you need to consider the actors that have greater or lesser connection with the service: from the person in the customer's company with whom you will establish a closer relationship, to the provider who makes it possible for you to offer the service.

It is important to do this exercise at three different levels: the stakeholders that have the closest contact and without whom the service would not work; the stakeholders that have an intermediate relation with the service and whose absence would be a hindrance, but it would still be possible to offer the service; and finally, the stakeholders that are a plus, it is a good idea to have them identified, but our revenue does not depend on them (e.g. competitors).

Regarding the layout of the template, in the central circle you will write down the new service. Once this is done, you will start placing the actors with the highest relevance in the next layer. That way, the agents with the smallest relevance will be visualised in the external layer, and those whose interaction with the service is of a medium importance will remain in the intermediate layer.

You will do this categorisation subjectively and keeping in mind the criteria that you see fit.

Service.
——

Actors with the highest relevance in the service

Actors with an intermediate relevance degree in the service

Actors with a lower relevance degree in the service
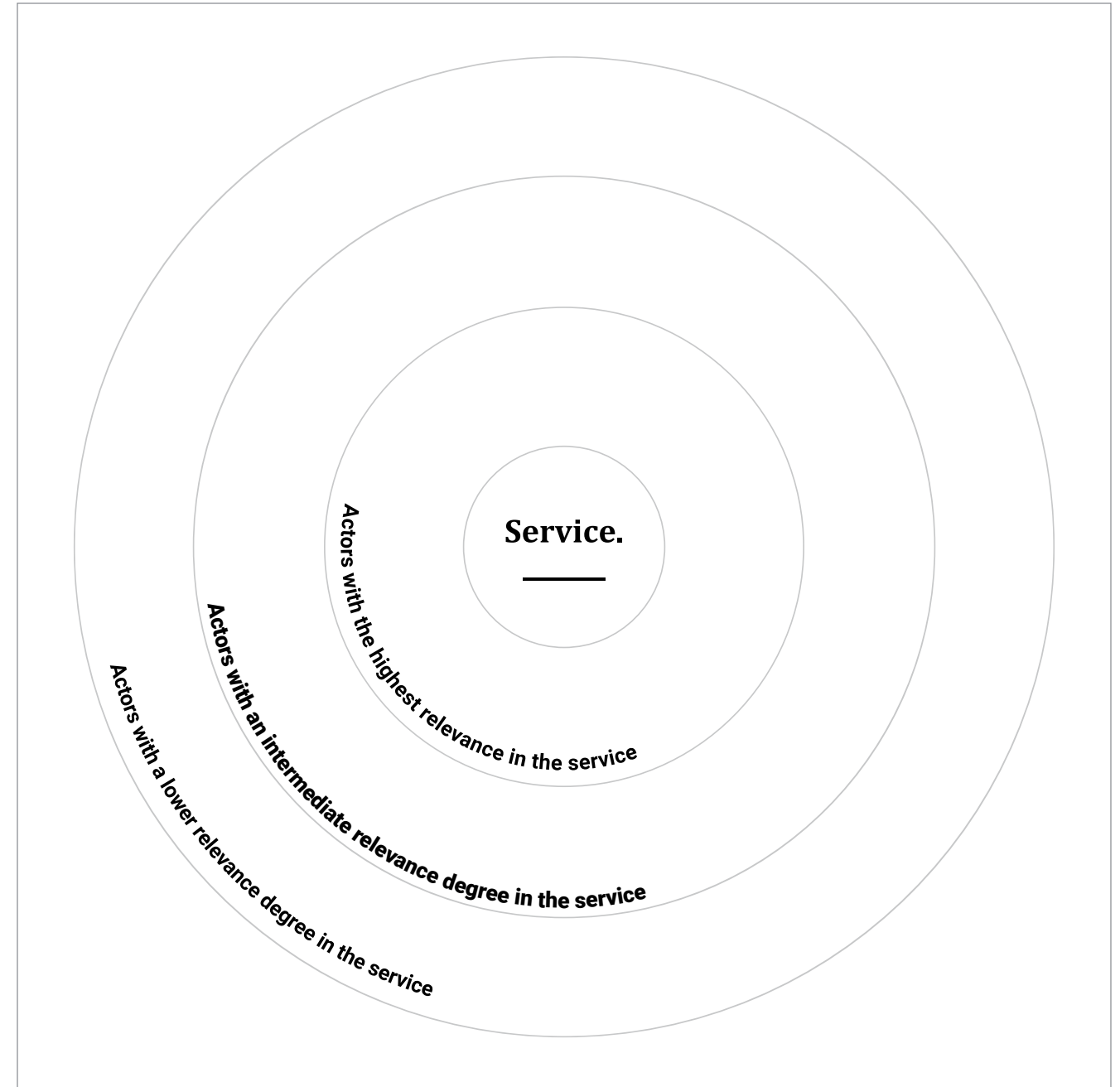
T7

DESIGN RESEARCH

Design Research is based on qualitative methods and tools adapted from social sciences to gather valuable information about the user/customer and whatever sorrounds them through field studies. The objective is to collect the "Insights": new and not yet obvious understandings of beliefs, values, habits, desires, reasons, emotions or needs of the customer that can become the basis for a competitive advantage. It is not a matter of collecting any certainties, but of obtaining key information that can help us think about new services.

How can we systematise the design research?

1 Define objectives.
————
Explore new directions, optimise existing solutions, test new solutions, etc.

2 Identify agents.
————
Who are we going to analyse?

3 Select tools.
————
What research tools are we going to use? In-depth interviews, focus groups, observation, everyday-life tests, safaries, mystery shoppers, mobile ethnographies, etc.

4 Plan research.
————
Who is going to do what? To whom? Deadlines? How often?

5 Design/adapt tools.
————
Interview scripts, focus group dynamics, etc.

6 Implement the research.
————
Conduct the research in accordance with all the previous points.

7 Synthesize the research.
————
What tools are we going to use to represent the relevant information obtained? *Personas*, Customer Journey Maps, etc.

You can find more information about methods and tools for research in design in:
Hanington, B., & Martin, B. (2012). *Universal methods of design: 100 ways to research complex problems, develop innovative ideas, and design effective solutions.* Rockport Publishers.

This matrix will help you plan your research:

		Agent 1	Agent 2	Agent 3	Agent 4
Define objectives	What information do I want to obtain?				
Identify agents	What agents and people do I have access to?				
Select tools	What research method can I apply? What for?				
Plan research	¿What is the action plan? Who does that? Deadlines?				
Design/ adapt tools	Do I have to design and/or adapt the research tools?				
Implement the research	Is the research being implemented in accordance with the planning? Yes/no? Why?				
Synthesize the research	What relevant information have I obtained?				

T8

INSIGHT MATRIX

This matrix will help you present and visualise the information that you have gathered in your research. List and share the relevant information for each customer researched. Search patterns and similarities among them. Try to validate and contrast the ideas that you presupposed in the previous workshop with the information gathered during the research.

Customer (A):
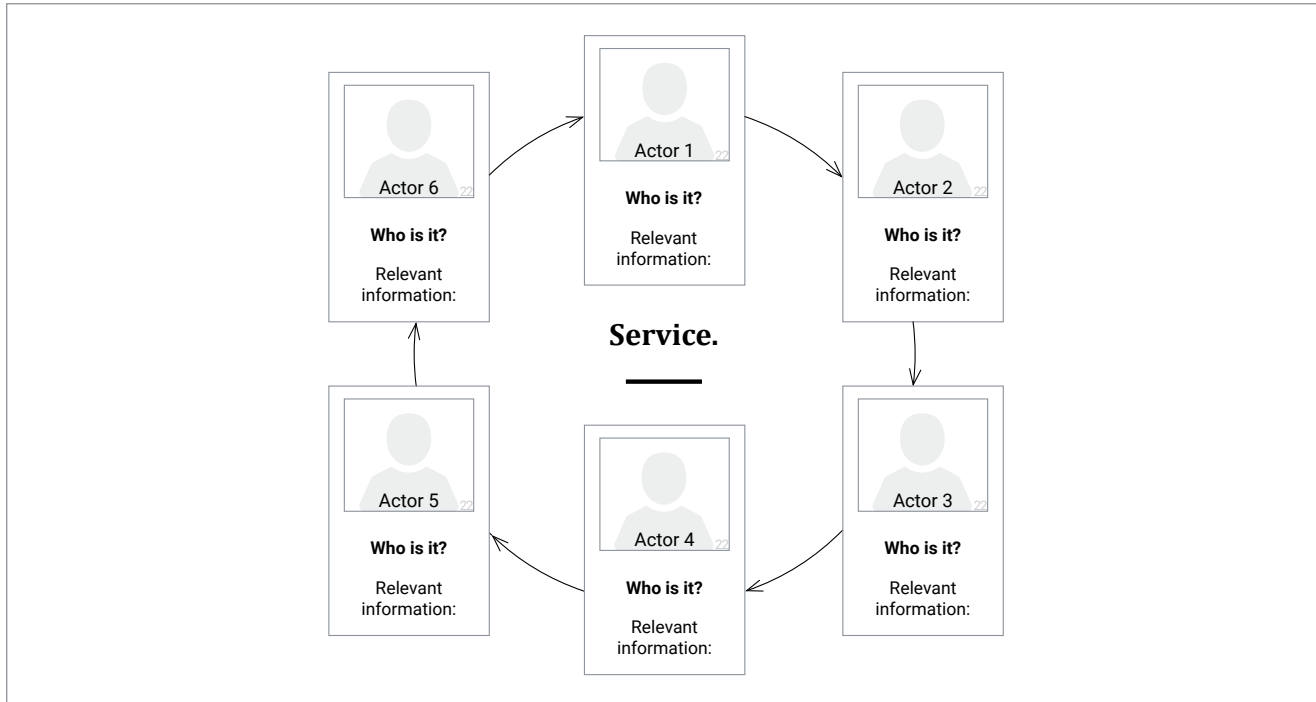
Micro level (B):

You can also analyse the interactions that each user has with your system at micro level:
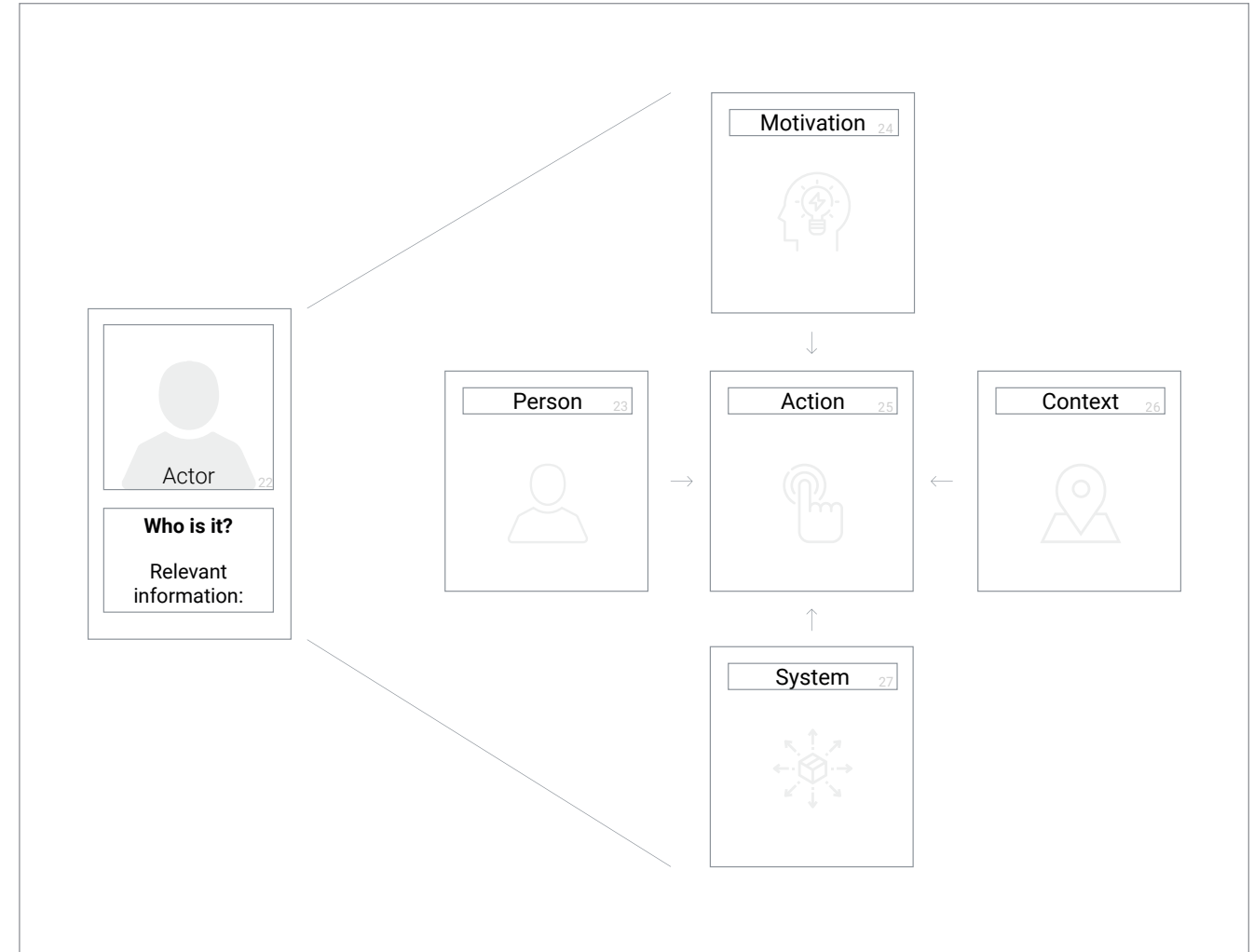
Adapted from: Retegi, A. (2016). *Inclusive experience design: una metodología de diseño de experiencias basada en las capacidades de las personas.* Doctoral Thesis of Mondragon Unibertsitatea. Arrasate-Mondragon, Spain.

T9

INDUSTRY *PERSONAS*

With the information that you have gathered in the research, and after having visualised it in the Insight Matrix, create archetypical profiles of the different people that constitute the customer's organisation.

Try to put yourselves in each people's shoes and reflect what their needs, motivations, frustrations and problems are. It will be helpful for the following Brainstorming.

About him/her

What he/she demands from the service

Name: _____

Age: _____

Sector: _____

Experience: _____

Motivation

What he/she does not demand from the service

Personality

Frustrations

His/her influence to acquire the service

You can use the next example of the Industry *Personas* tool as a reference. A profile of the person in charge of the production line in the energy sector is described here.

Production Manager

I consider myself as a key agent in the evolution of the system and its implementation.

About him

He is an experienced man, confident in his job as production manager. In his daily life, he focuses on technology and he is open-minded about new tools and innovations. He is a demanding professional with himself, as well as being demanding with providers. And he has a highly influencing ability over the workers of the organisation.

What he demands from the service

- Helping in planning
- Helping to improve efficiency in the production line

Name: Carlos

Age: 45 years

Sector: Energy

Experience: High

Motivation

Reliability

Productivity

Security

What he does not demand from the service

- Not implying overtime or losing control of the production line

Personality

Introvert — Extrovert

Sensible — Intuitive

Empathetic — Unsympathetic

Frustrations

- Not knowing what is going on in the production line
- Not being in control of a situation

His influence to acquire the service

- He is the one putting pressure on the acquisition of the service
- He has influence over the industrial manager
- It is essential that he is in favour

T10
CUSTOMER JOURNEY MAP

Advice to develop a good Customer Journey Map:

| 1 Keep in mind the Industry *Personas* profile previously defined. | 2 Focus on what is most important, not going into too much detail. | 3 Go into the details as deep as necessary to ensure clarity of information. | 4 Focus on the processes, on the way in which that person operates. |

| 5 Include illustrations to enrich the maps. | 6 Select a person charged with performing each improvement on the map. | 7 Involve more people from your organisation. | 8 Add key indicators (KPIs) to spot the most troubling areas. |

The Customer Journey Map tool is present in two different workshops. The first one is workshop T1: Define. Here, you can use this tool to note down the information gathered in the research process. In order to do so, you have to map a customer throughout your delivery process, making a distinction between the pre, during and post stages. Focus on mapping your offer from the customer's perspective, on visualizing what the customer sees and experiences at that moment in time. This way, you could identify some key points for the new service. In the second case, the Customer Journey Map is intended for you to map the new experience that the customer is going to live with the new service. In this workshop, (T3: Create), the tool will help you define the actions of the new service. In both cases, you can choose the layers most convenient to you. Here you have an example:

STAGES	PRE				DURING		POST		
SUBSTAGES									
User actions									
Provider actions									
People they interact with									
Touchpoints									
Emotions									
Expectations									
Problems									

You can find more information about methods and tools to map experiences in:
Curedale, R. (2018). *Design thinking: process and methods. Mapping Methods 2: Step-by-step guide Experience Maps Journey Maps Service Blueprints Affinity Diagrams Empathy Maps Business Model Canvas*. Design Community College.
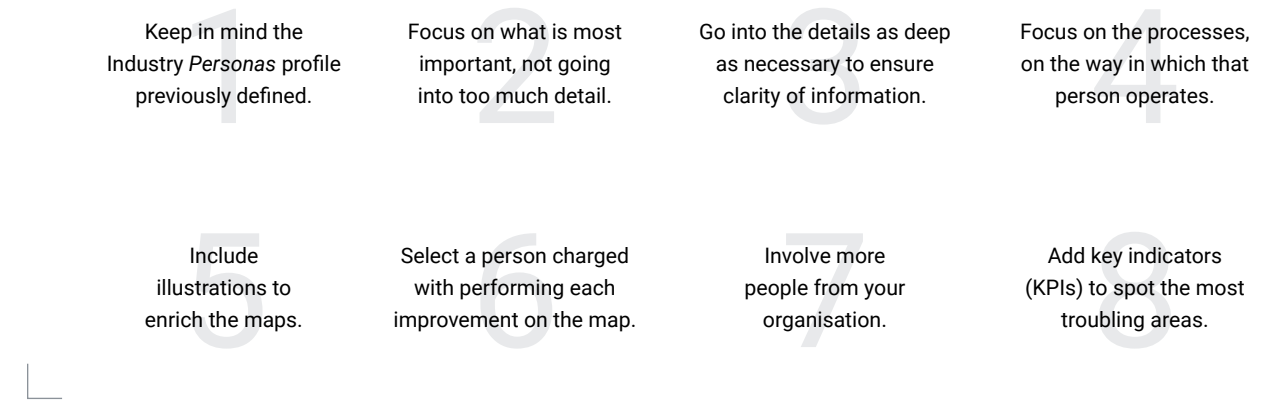
T11

SERVICE CANVAS

The Service Canvas is a tool that will help you develop and value service ideas that you have from different points of view (the customer, the service, your company and other agents involved). Fill in the service template with the ideas that you have generated and evaluate afterwards their consistency and coherence.

CUSTOMER	SERVICE	COMPANY	AGENTS
Target customer What type of customer is it directed to?	**Description** What is the service? How does it work?	**Advantages** Why are we better positioned to offer it?	**Competitors** Who will our competitors be?
	Benefits What is the value benefiting the customer?		
		Opportunity Why is it in line with our strategy?	**Partners** Is there something that we need from third parties?
Problems/Needs What customer problems does it solve?	**Monetization** What and how is the customer going to pay for this service?		
		Risks What are the risks that we take with this service?	**Needs** What do we need to put this idea into practice?
	Innovative/Unique Why is the idea innovative and unique?		

T12

MONETIZATION MODELS

Having an inspirational model compilation as the starting point, this tool will help you think about how to monetize your service ideas. You can copy, combine or adapt the models as you see fit. Once you have analysed them, choose six models of template A and place them in the blanks of template B. Having placed these, you should write down how each model would be applied in your new service. Afterwards, assess each model from the point of view of the value they bring to the customer, technological feasibility and business viability. Finally, share the individual contributions with the group and discuss and build on the ideas of the others to find the most appropriate means to monetize your services.

(A)

Knowledge-based services

In this model, the offer is focused on providing services based on the manufacturer's know-how. The services offered and monetized are consultancy or advisory services for improvement linked to the manufacturer's own products and/or those of competitors. Sometimes, and in order to offer these services, the manufacturer can offer the installation of devices (hardware and software) in its products and/or in those of competitors for the collection and analysis of data on which these consultancy and advisory services are based. The device is sold, rented or given to the customer.

In this model, services are charged independently or not to the improvements achieved. This model provides recurrent and periodised income as well as access to relevant customer information not only linked to the products themselves but also to those of competitors.

Suscription

The customer pays a regular fee, either monthly, annually etc. and thus, has access to the use of the product (owned or not) and the service regardless of the intensity of use. Thus, while customers benefit from reduced usage costs and from having the service always available, the manufacturer generates a recurring, periodical and predictable income over time.

With this subscription model, the customer pays a pre-agreed fee for access to the hardware and software used to, for example, measure, control, manage or monitor the condition of the product. In addition, this allows the manufacturer to offer additional associated services, such as predictive, preventive or corrective maintenance services that are charged separately.

Additions

The part of the base product of the offer is offered to the customer at a very competitive price. Subsequently, the customer is offered new products or extra services for which the customer pays if required. In the end, the extras that the customer demands during the entire life cycle of the product offsets by far the starting price of the base element itself. Still, the customer benefits from a wider, more personalised offer and the possibility to pay for what he really needs and when he needs it.

There are a number of products where the purchase is very affordable (even lower than its cost) but then the manufacturer's income is increased by other associated services, such as additional customised elements, consumables; control systems, monitoring and management of the product, maintenance, updates, product insurance at the end of life, etc.

Guaranteed availability

In this model, product availability is guaranteed by the manufacturer. The customers can use the product whenever they need it, and the manufacturer is responsible for making sure that the product is always available. The customer pays a pre-established fee for this guaranteed availability. The manufacturer uses previous experience, and economies of scale to minimise operational costs and to achieve availability levels.

This model tends to be applied when eventualities such as errors, breakdowns or unscheduled stops may pose a risk to the safety of the users and/or operators of the products, or involve very high economic costs.

Designed by the customer

The approach to product development following modular design principles and the introduction of new production systems has made it possible to individualise products efficiently. As a result, the customer can be satisfied at competitive prices with products manufactured through mass customisation. This results in an offer of services that the customer acquires in order to achieve such customisation.

For example, for some products (e.g. prostheses) flexible manufacturing and 3D printing allow mass customisation at lower cost. Thus, production is postponed until the last moment to allow individual customisation. Beyond the ability to provide more customised products and charge for services that enable the customer such customisation, it also reduces inventory levels and increases plant efficiency.

Business lies in data

In this model, monetisation is derived from the sale to third parties of data generated by customers during the use of the product. The manufacturer offers the user the product at very advantageous economic conditions or even free of charge. In return, the user agrees to share the data generated by the device with the manufacturer. The manufacturer then sells this information to third parties.

Recently, some hardware manufacturers have transformed their business model towards this type of models (for example, some manufacturers of fitness articles) since the data generated by their devices are useful for several service companies such as banks, insurance companies or companies in the health sector.

With no ornaments

The offer focuses on providing the most basic services possible at the lowest possible cost. In order to do this, it is essential to identify what is valuable to the customer and what is unwanted and unnecessary. The cost savings in the service are shared with the customer, resulting in access to a customer-base with less purchasing power or a more limited willingness to buy.

For example, for certain components or certain consumer goods, services that were considered indispensable some years ago have been delegated to the customer. Thus, personalised advice on the purchase, transport or assembly of the product is delegated to the customer or invoiced as additional services.

Digitalise - Virtualise

In this model the manufacturer digitalises all the services linked to the product. Services such as custom design or engineering, product installation and commissioning, customer training, support or maintenance are performed using only digital and/or virtual means.

This makes the services more accessible to customers, which may encourage customers to purchase some services that they previously did not consider or could not afford and differentiates them from competitors.

Digitisation-virtualisation of some services requires the manufacturer to develop ICT technologies, such as virtual reality or augmented reality.

Renting & Leasing

The customer does not buy the product, but rents it. This reduces the capital costs for the customer and gives them access to products with even higher performance than they could afford to buy. Moreover, the manufacturer never loses ownership of the product and achieves recurring and predictable income as long as the product remains on lease. Both parties benefit from greater efficiency in the periods of use and non-use of the product.

In addition, the rental services are experiencing a sophistication where, depending on the contract, the customer can renew or make use of better (Premium) or newer products, while achieving high levels of personalisation in the pricing thanks to the monitoring of the condition of the product during its use.

● ● ●

T12
MONETIZATION MODELS

Business lies in consumables

In this model the product is sold or rented at very competitive prices or even delivered to the customer free of charge. However, in order for this product to fulfil its function, it requires some consumables, and it is in these consumables that the business is in, as these are sold to the customer with wide margins.

Thus, while the initial barriers to the purchase of the product are reduced by having it at a lower price, the manufacturer gets a constant source of revenue throughout the life of the product. Some manufacturers manage to hold their customers captive, as it is only their consumables that can be used with their products, making competitors' consumables incompatible with them. Razor blades or home printers are examples of this model.

End of life

The products are collected at the end of their useful life and then they are remanufactured, reconditioned, renewed, and/or repaired to be sold in another market or even to be transformed into new products or disassembled for the use of their parts. The model is based on achieving profits based on the purchase of these products at very low prices or even for free from the original customer. While providing waste disposal and reducing the costs associated with the end of life of the original customer, it offers a more economical alternative to the second customer.

This model is used when the value of the product or some of its components is very high for the customer. There are several examples of this model in sectors such as transport (land, sea and air), the military industry, industrial equipment, construction and luxury goods among others.

All services free of charge

In this model the customer only pays for the product. All services associated with the product are free of charge for the customer. This model tends to occur when products have a high value for the customer and are essential for the development of their activity.

Some manufacturers use this model, all the services offered are free for the customer with the purchase of the product, to build customer loyalty and differentiate themselves from competitors. Sometimes, manufacturers develop technological solutions (hardware and software) that serve as platforms so that their customers can in turn offer services to third parties, and they do charge for them. Manufacturers sometimes require customers to have access to the data collected by these solutions as a precondition for using these platforms. Thus, the manufacturer has access to relevant information for the improvement of its products.

Hook

The customer buys the product and the manufacturer provides a software platform with certain functions free of charge. The customer can enjoy the services and functionalities provided by this platform free of charge and without interruption. If the customer wants to make full use of all the functions of the platform he can upgrade it to the paid version by subscription (monthly, yearly, etc.)

This way, the manufacturer offers a free "hook" with the platform that, in addition to providing data on the use of its product, opens the door to monetize services on a recurring basis if the customer opts for the paid version.

Pay-per-use/performance

The price of the product is not determined by the product itself, but is determined by its functions, the value it delivers and the performance it has. In this model the ownership of the product is always in the hands of the manufacturer.

The best known model is the pay-per-use model, in which the customer pays based on the use they make of the product. This model can be extended to others where the customer pays based on a series of variables defined by different operation schemes. There are several models, such as payment by the hours that the product is in use, payment per piece produced, payment per performance improvements generated by the product, payment per reduction of the impact (environmental or otherwise) generated by the product, etc.

Pay per result

In this model, the customer pays the manufacturer according to the results obtained by all the products and services offered. In the most advanced models, the manufacturer can even invoice according to the income obtained by the customer. This encourages customers to opt for this type of offer since the manufacturer shares the risk with the customer.

For this purpose, the manufacturer installs in its products, free of charge or not, and with the customer's permission, the hardware and software necessary for monitoring the condition of the product. The customer shares the data generated by these systems with the manufacturer and the manufacturer performs periodic analysis of this data in order to intervene appropriately and improve the result.

Direct sale to the end user

In this model, the manufacturer chooses to develop a new service offering that previously corresponded to its customer. The idea is to develop services that the end user can acquire directly by skipping any type of intermediary (for example, skipping the distributors, installers and maintainers of the product).

While this model can generate new revenue from services, it is a risky option as it can create tensions in the value chain, as existing customers may see their business threatened and stop buying products from the original manufacturer.

Use and/or shared ownership

In this model the product is sold or rented to more than one customer at a time. Mechanisms are established by which access to the product by a group of customers is regulated. Thus, customers benefit from the use of the product without having to assume the total cost of the purchase or rental of the product.

In the meantime, the manufacturer can offer services associated with the use of such product, such as maintenance or product upgrades, which are also purchased by all co-owner customers, which in turn also reduces costs for each customer individually.

Turnkey

In this model, the manufacturer becomes a turnkey solution provider. The customer acquires a solution that includes a set of products and services based on the manufacturer's know-how.

In this model, in the offer, the product and the service cannot be dissociated. The customer buys the combination of both including services such as custom design, transport and installation, maintenance, end-of-life management, etc. Again, in this model there is also direct and continuous contact with the customer, which provides the manufacturer with information on the customer's habits and needs, which can then be used to improve the manufacturer's processes, products and services.

(A)

T12

MONETIZATION MODELS

Model 1

How would you apply this model to your service?:

Model 2

How would you apply this model to your service?:

Model 3

How would you apply this model to your service?:

Model 4

How would you apply this model to your service?:

Model 5

How would you apply this model to your service?:

Model 6

How would you apply this model to your service?:

	Value for the customer	Feasibility	Viability	Total
Model 1				
Model 2				
Model 3				
Model 4				
Model 5				
Model 6				

(B)

Adapted from: Gassmann, O., Frankenberger, K., & Csik, M. (2014).*The business model navigator: 55 models that will revolutionise your business.* Pearson UK.

T13
BLUEPRINT

Blueprints are visualizations that allow to map how the service works. They map and connect together the processes that are visible for the customer (front-end), as well as the processes that are not visible (back-end). There are several Blueprint models, we propose you use the model of the five sections, showed below:

Advice to develop a good Blueprint:

1. Keep in mind the Industry *Personas* profile previously defined.

2. Focus on the processes.

3. Go into the details as deep as necessary to ensure clarity of information.

4. Select a person charged with performing each improvement of the map.

5. Involve more people from your organisation.

6. Add key indicators (KPIs) to spot the most troubling areas.

7. Start from the already created layers on the Customer Journey Map.

STAGES	PRE			DURING		POST			
SUBSTAGES									
Touchpoints									
Customer actions									
Visible actions for the customer (front-end)				Interaction line					
Non-visible actions for the customer (back-end)				Visibility line					
Support processes				Internal interaction line					

Adapted from: Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service blueprinting: a practical technique for service innovation. *California management review*, 50(3), 66-94.

T14
FLOWCHART

A flowchart is the graphic representation of a service process. These diagrams use symbols with defined meanings that represent the steps of the process, as well as the execution flow, through arrows that connect the starting and end points of the process.

They can be represented in vertical, horizontal or panoramic format and they may include the various departments of the company. They are regulated by ISO 9001:2015.
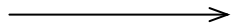
Basic symbols to map the processes:

Ellipse-oval/ Extreme symbol/ Start-end:
It signals the beginning and the end of a process. It may include words such as "Start" or "End", or others like "Delivered product" that refer to a particular situation.
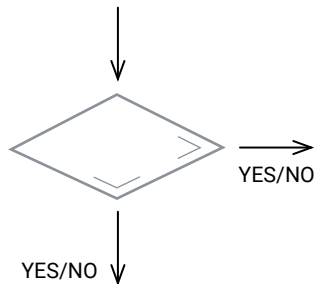
Rectangles:
They signal a process or an operation. E.g. "Assemble a product", "Revise information", "Complete plans", etc.

Arrows/ Flow lines:
They signal the order in which the operations are performed, concretely, in other words, the direction of the flow of the process. They can be horizontal or vertical.

Diamonds/ Decision/ Branching:
They are the points where a situation is analysed. They contain a condition and they branch the flow towards different exits depending on the result obtained when evaluating such condition. The response must be indicated in the different options (for example, "Yes" in one and "No" in another one). If this is affirmative, the flow continues a different route from a negative response.

A flowchart may be as follows:

Department 1	Department 2	Department 3	Department 4

T15
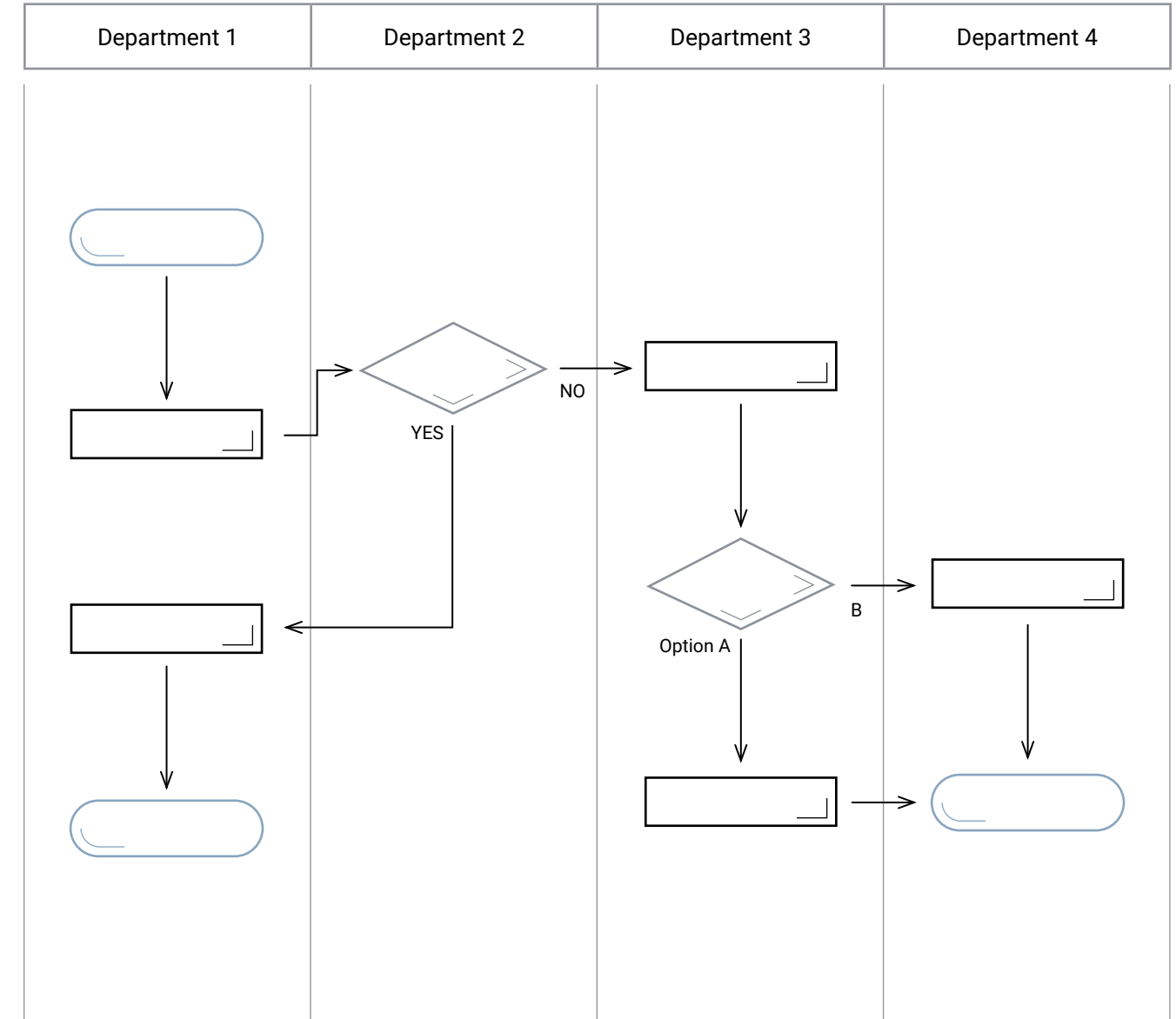
TOUCHPOINT MATRIX

The Touchpoint Matrix (contact points) is a visualization that will help you list all the contact points of your service in chronological order, including nuclear and peripheral contact points. It will assist you in determining who is responsible for developing and delivering each one of the contact points.

No.	Touchpoint	Aimed at	Description (what is its use)	Attributes	Required people (to develop and to deliver)	Required technology	Required support (from third parties)

T16

COST ESTIMATION

This template will help you make a preliminar approach of the potential cost structure that will support your service proposal. Use it to calculate the costs associated with each one of the stages and with the service processes. Based on three scenarios (in the best case scenario, in an intermediate case scenario and in the worst case scenario) propose the first hypotheses of the costs associated with the people and materials required.

Service Stages			Calculation in the best case scenario			Calculation in an intermediate case scenario			Calculation in the worst case scenario		
			Number of hours	Hourly rate	Total €	Number of hours	Hourly rate	Total €	Number of hours	Hourly rate	Total €
Stage 1	Process 1	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 2	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 3	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 4	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 5	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Total stage cost				0,00			0,00			0,00
Stage 2	Process 1	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 2	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 3	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 4	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Process 5	Staff			0,00			0,00			0,00
		Material			0,00			0,00			0,00
	Total stage cost				0,00			0,00			0,00
Stage n											
	Total costs				0,00			0,00			0,00

Adapted from: T-REX project - Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO (2017).

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