NGI TRUST

BRING YOUR TECH TO THE MARKET

Unai Calvar | Tecnalia Ventures

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agr

Brief presentation

- **Unai Calvar Aranburu** has worked at Tecnalia since 2007 in different positions:
  - **Innovation Policies**, providing strategic advice to public institutions on the definition, implementation and assessment of innovation policies, strategies and programmes that promote technology-based competitiveness and generate optimal environments for economic and social development
  - Visiting researcher at the **Joint Institute for Innovation Policies**
  - Working with the Basque Government in different projects related to the development of the **Information Society** in the period 2007-2013.
- He has participated in the **design of the Basque Government's strategic plan for the Information Society**, defining programmes and initiatives which aim at bridging the digital gap in society and SMEs.
- **Business developer at Tecnalia Ventures**, helping to develop business opportunities out of Tecnalia's R&D.
- At **Tecnalia Ventures** we develop business opportunities for the valorization and commercialization of technology by connecting the main pillars of an entrepreneurial ecosystem: Minds, Management and Money.

tecnalia ventures

Technology Value for Growth

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Before we start

- **Something to think about:**
  - Have you had **experience** with technology transfer?
  - What **barriers** do you face when addressing technology transfer?
  - What do you want to **achieve** in terms of tech transfer?

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Objectives and learning goals of today´s session

- Learn how to **identify business opportunities** by assessing current and future market needs
- Establish and **validate** the viability of our **business opportunity ideas**
- Incorporate **cooperation** and feedback mechanisms involving TTO personnel, potential clients, investors and final users
- Build a **team to develop business opportunities** around the initial idea

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1. **Introduction:** General concepts for technology transfer
2. **Identification of potential technology-based business ideas:** How do we identify new ideas?
3. **Work with TTO personnel:** The key to market-oriented research
4. **Potential impact of R&D** (business model, current and future competitors, financial/market/legal risks, the need for a business plan, etc.)
5. **The entrepreneurial ecosystem** and the necessary communication mechanisms for successful technology transfer
6. **Building the team for** the development of the business opportunity
7. **Negotiation and licensing** processes: Key aspects
8. **Real examples** of successful technology transfer cases
9. **Exercise:** Allocation of resources across a number of technology-based business opportunities
10. **Exercise:** Route to market for different technologies

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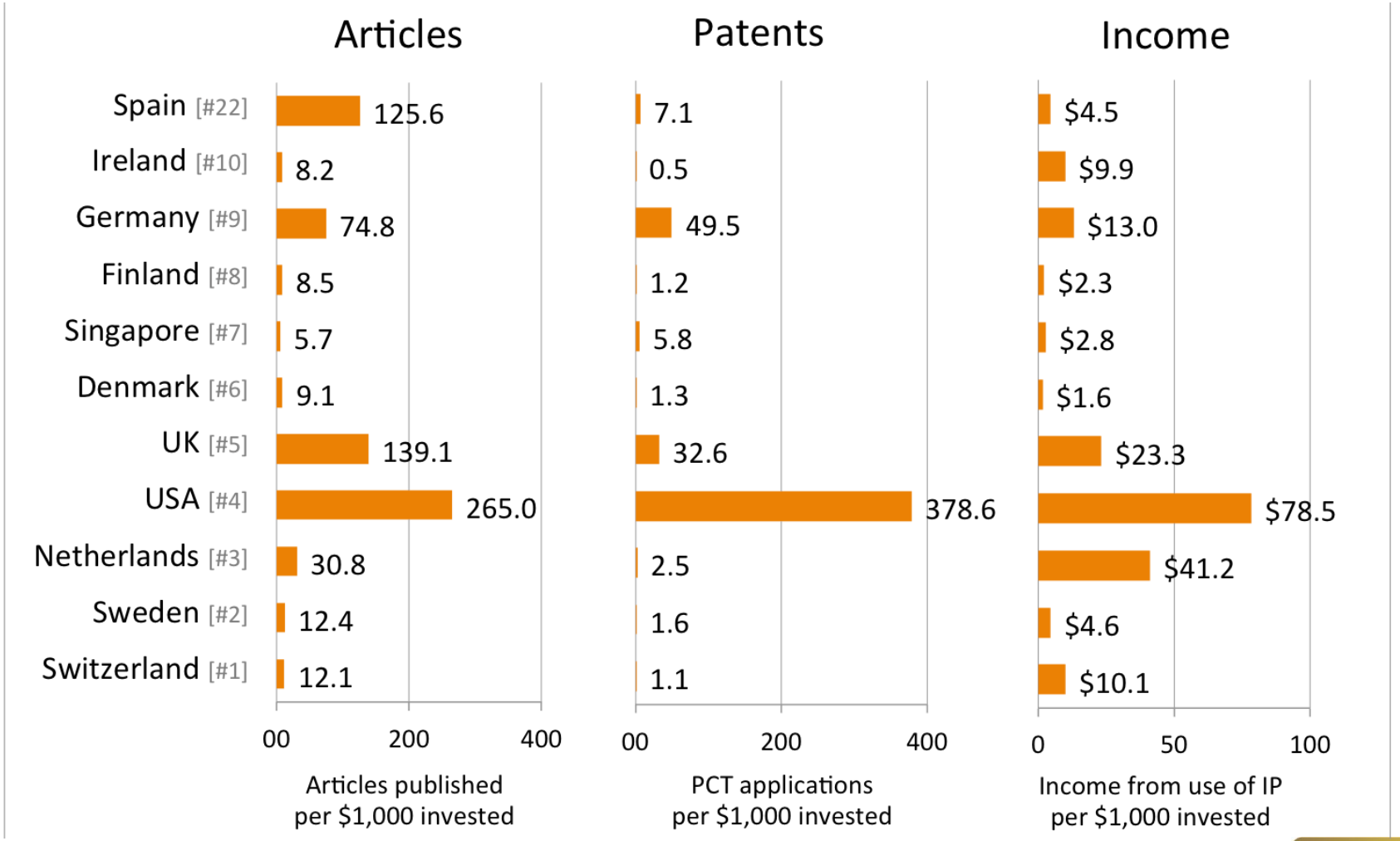
The problem



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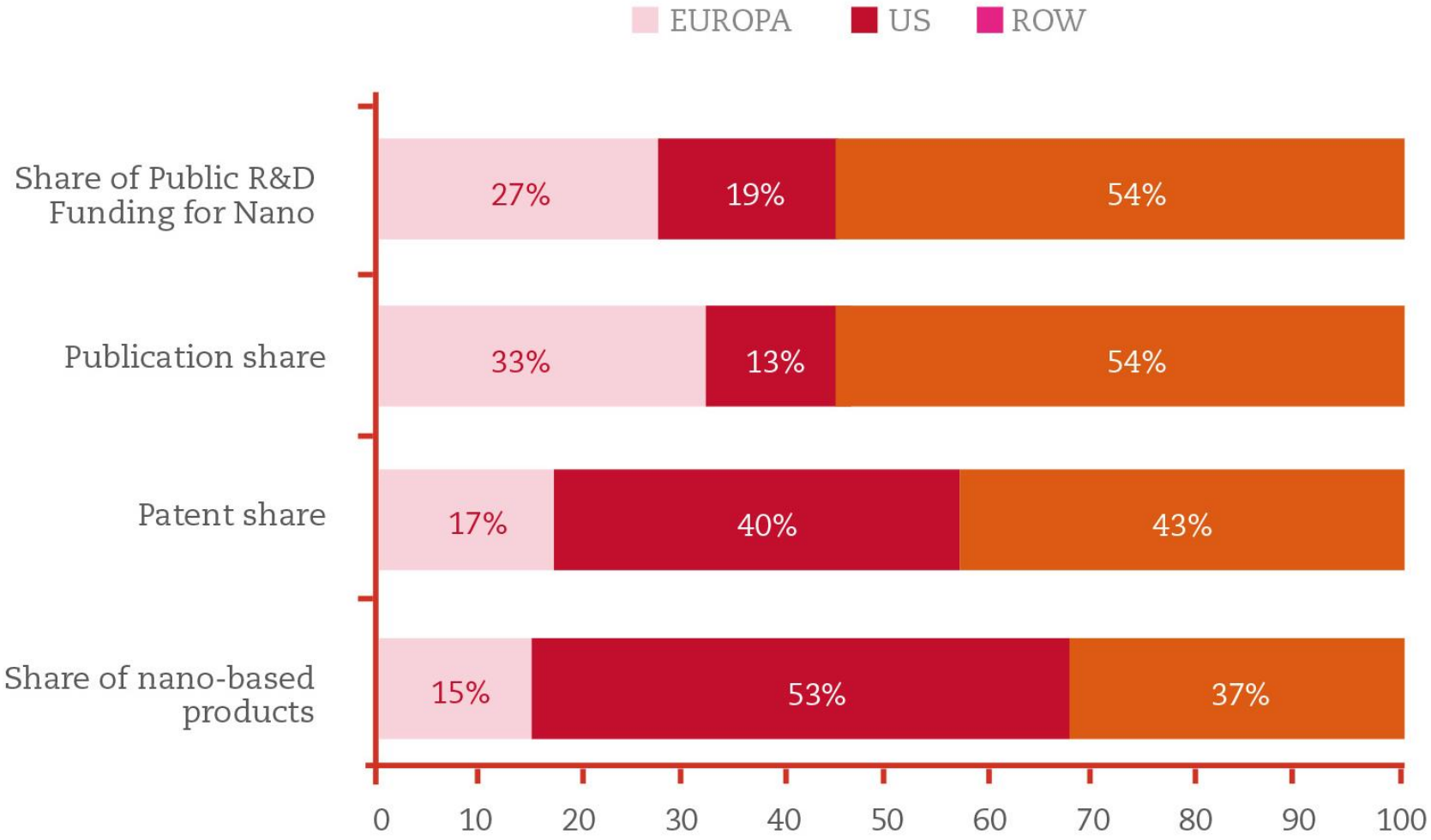
Return of investment in R&D - Nanotechnology



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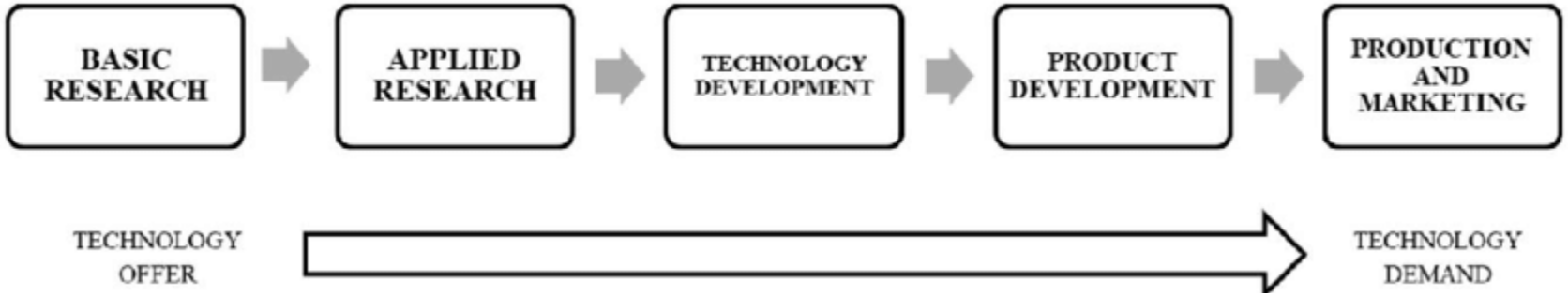
Technology transfer models

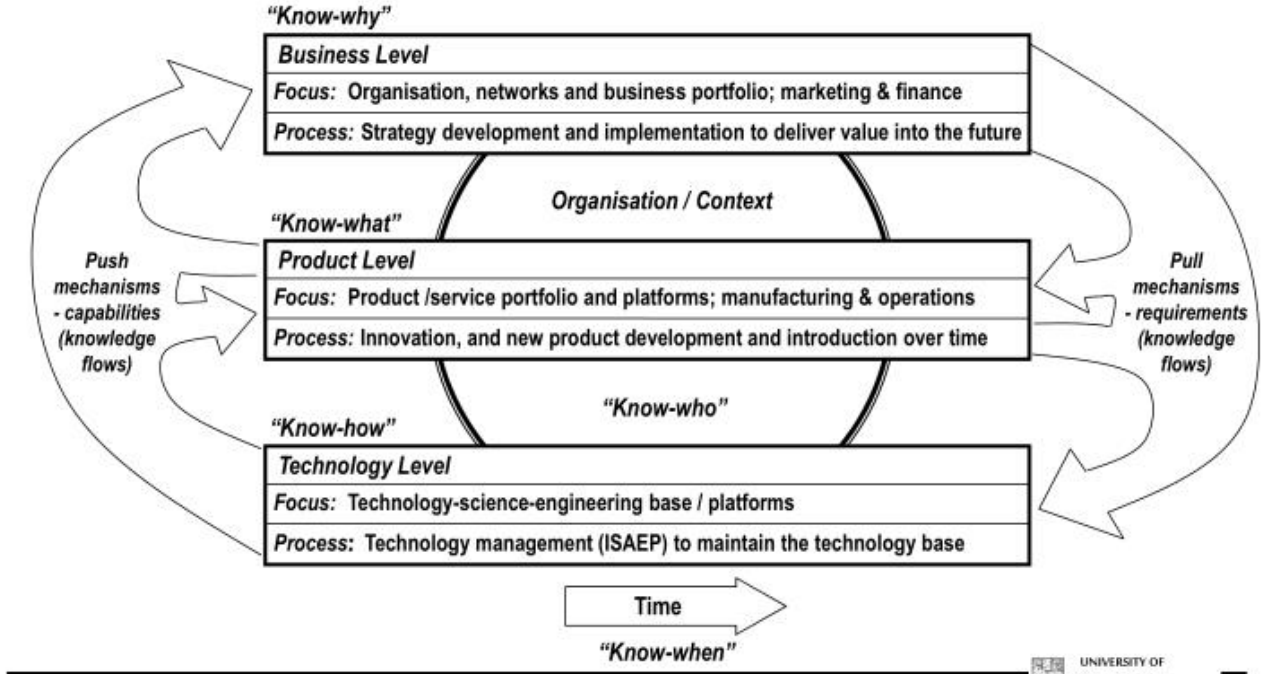
Lineal model

- Traditional university model
- We sell what we develop
- Research is not aligned with market needs
- Technology push



Incremental models

- Multiple iterations involving technological perspective and market environment
- Continuous adaptation of projects according to lessons learnt
- Synergy between technology push and market pull



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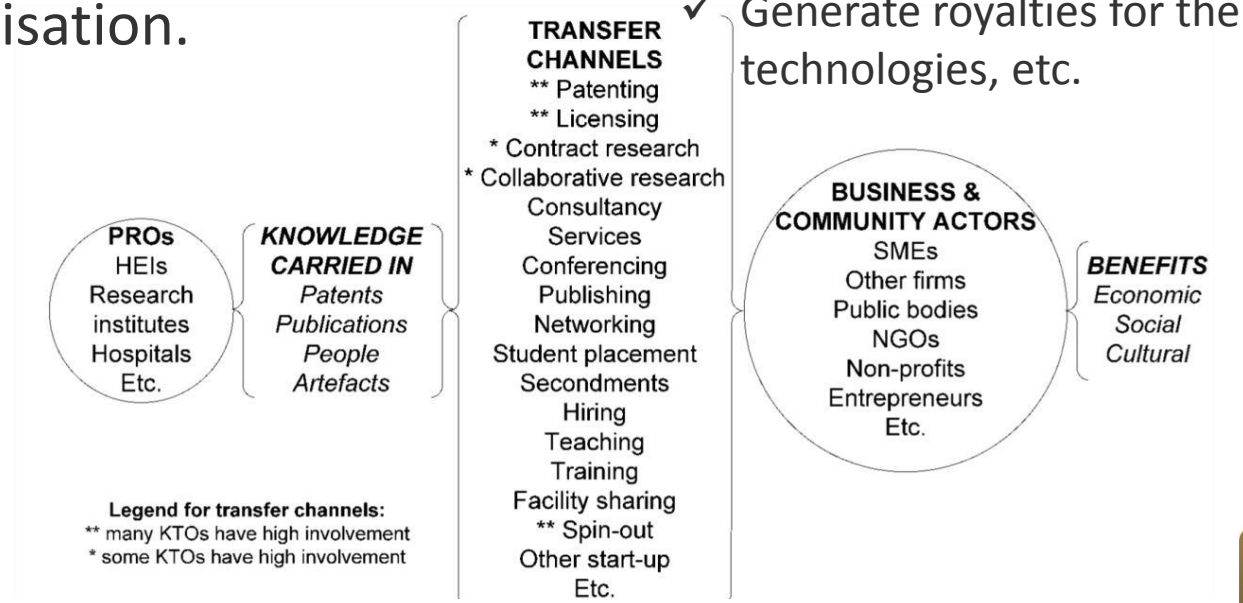
Technology Transfer Offices (TTO)

Technology transfer offices include different types of organizations whose main purpose is to **assist research organizations to manage their intellectual property assets** in a way that facilitates their transformation into benefits for the organisation.

This role includes different activities:

- ✓ Establish **relationships with companies** and other actors
- ✓ Generate **support to finance** its activities
- ✓ Provide assistance in the areas related to entrepreneurship and **intellectual property** (IP)
- ✓ Facilitate the creation of new technology-based companies (**start-ups** and **spin-offs**)
- ✓ Generate royalties for the **licensing** of technologies, etc.



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Structure of TTOs

There are multiple approaches to the organisation and structure of technology transfer in technology research centres or universities. **But the clear tendency is to conceive specific structures in the organization to address the technological transfer by the valorisation of the know-how either through licensing and / or the creation of new businesses.**

In Europe, the technology centres gathered in EARTO have specific structures, many of them constituted as separate legal entities. Some examples are:

Fraunhofer VENTURE

VTT VENTURES LTD

tecnalia ventures
Technology Value for Growth

cea investissement
AMORÇAGE TECHNOLOGIQUE

Other centres have merged digital accelerators, such as iMinds.

imec iMinds

There are entities that have taken their activities to support entrepreneurship to an external structure such as the University of Oxford, which has created Oxentia or TNO that sold part of TNO Companies (both operations in 2017).

TNO companies

OXENTIA

CONACYT
Consejo Nacional de Ciencia y Tecnología

CATAPULT

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Examples of TTOs

Germany

Fraunhofer has a **structure of centres with considerable autonomy**, distributed geographically. The **Ventures office is located in Munich** and has a disparate arrival at the different centres. They emphasize the intra-entrepreneurship promotion program -Fraunhofer Fosters Intrapreneurship (FFI) and an internal acceleration program (Fdays), aimed at increasing the number of start-ups. Important weight in the team of legal profiles linked to the protection of technological assets. www.fraunhoferventure.de

Finland

At VTT Ventures, they **seek to mature ideas and technologies jointly with VTT researchers**, providing the investors' point of view to facilitate additional financing. They have a specific program to incorporate entrepreneurs who seek to lead a technological start-up based on VTT developments. www.vttventures.fi

France

CEA Investissement is the subsidiary of CEA that carries its **investment portfolio**. Recently (2017) they have created an **investment fund** (Supernova Invest) dedicated specifically to investments dedicated to technological innovation from start-ups to mature companies. www.cea-investissement.com

United Kingdom

Although this entity was born as the technology transfer office of the **University of Oxford**, it has recently been constituted autonomously as a global consulting company in the field of innovation and work to develop its capabilities in innovation for the benefit of the economy and society. www.oxentia.com

Sources: EARTO White paper – How to Exploit the Untapped Potential of RTOs´Deep-Tech Start-ups in Europe.
Sesiones plenarias de TTO Circle – The European Technology transfer Offices Circle (2015-2017)

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Different types of technology transfer

Type	Description
Contract – **Service**	There is no development or technology transfer (e.g. **training**)
Contract – **technological development**	There is a technological development that is **transferred to the client**
Contract – **mixture of development and asset transfer**	We sell skills / competences and also assets that adapt or complete the project (e.g. **technology + training**)
"Pure" asset license	We sell or license **technological assets**, which the client will use to optimize / create new business
Diversification	We **sell a business based on technological assets** to diversify the offer of a company
New start-up	We create a new business based on technological assets with the aim of generating an exit in the short term
Personnel transfer	People are transferred to the productive fabric that work integrated in a company or organization

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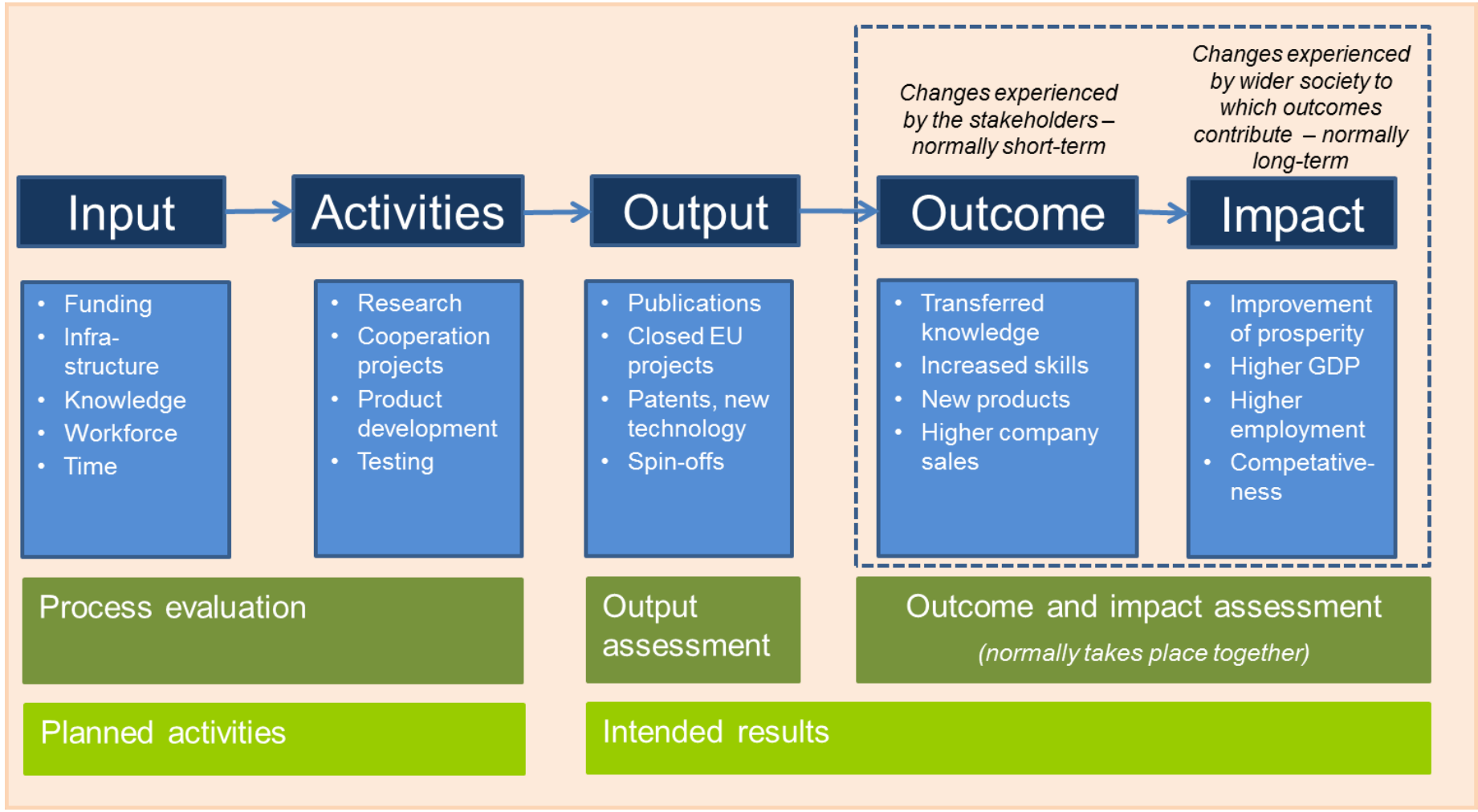
Indicators at different stages of technology transfer



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Commercialisation option 1: Transfer of rights

Definition

- Transfer of ownership of an Industrial Property Law (IPR) as a patent, trademark or design, from one party (transferor) to another party (assignee); In this way, the assignee becomes the new owner of the IPR.

- It is a very useful instrument for those cases in which the owner does not have sufficient capacity (financial, human resources, marketing etc.) to market the developed industrial asset, and when he wants to obtain an immediate cash flow from an intellectual property asset , that does not intend to explode by itself.

Key factors to be considered:

- ✓ **Confidentiality agreements** - A transfer process requires sharing exclusive information between the parties, even if the process does not end in agreement; therefore, confidentiality agreements are essential to ensure that confidential information will not be disclosed or used for different purposes.
- ✓ **Risk analysis through an IP audit** - The IP audit will clarify the following aspects: the status of the property, the status of IP protection, any restrictions on exploitation, the value of the asset (will be used as the basis during negotiations) and legal requirements.
- ✓ **Key points in the negotiation of an assignment** - The form of the agreement, the identification of IP rights, payment, guarantees and the applicable Law.

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Commercialisation option 2: Licences

Definition

- Contract under which a holder of an item protected by industrial or intellectual property (licensor) grants his permission to use another person (licensee), with limits established in the license agreement.

It allows the licensor to earn money with their intangible assets by charging the licensee for their use

Key factors to be considered:

- ✓ **Define the type of license:**
  - **Exclusive license:** only the licensee can use the IP or the licensed technology (the licensor cannot use or license it).
  - **Single exclusive license:** the licensor agrees not to grant additional licenses, although he reserves the right to use the licensed IP.
  - **Non-exclusive license:** both the licensor and the licensee can make use of the IP or the licensed technology (the licensor can also negotiate other non-exclusive licenses).
- ✓ **Confidentiality agreements** - Reduce the risk of leakage of valuable information for both parties.
- ✓ **Rights granted** - They must be clearly defined.
- ✓ **Key points for the agreement of a license** - The form of the agreement, the conditions of the agreement, the identification of IP rights, the type of license and the geographical and use scope.

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Commercialisation option 3: Franchise

Definition

- Special type of license in which the holder of a business model (franchisor) allows a replica of it in another place granting continuous support, as well as training to the recipient (franchisee).

Benefits for both parties

- The franchisor can expand his business using a minimum investment
- The franchisee can more easily enter the market

Key factors to be considered:

- ✓ **Conduct a reliability study** - The study must include the following sections: analysis of the legal requirements, potential franchisees, evaluation of ownership of the IP rights to be licensed, planning of the franchise system and financial reliability.
- ✓ **Evaluate the system** - analyze aspects such as the geographic scope and the franchise's business model to see its viability.
- ✓ **Pay special attention to the development of the contract**
- ✓ **Steps to launch a franchise** - Advertising (important when promoting the franchise system), selection of franchisees (development of a criterion for the process of recruiting franchisees), franchise disclosure document and advice.

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Commercialisation option 4: Joint Ventures

Deifinition

- Commercial alliances of two or more independent organizations, in order to carry out a specific project or achieve a goal, sharing risks; IP has a primary role in creating such collaborations, because the partners contribute their intellectual assets to the success of the Joint Venture.

Provisional agreement	Contract	Implementation	Finalisation
✓ Protect IP ✓ Sign confidentiality agreements ✓ Carry out audits ✓ Put the focus on competition laws	✓ Agree on the access rights to the IP of the fund ✓ Start deliberating on the IP of the foreground / results	✓ Determine the foreground / results ownership regime ✓ Clarify ownership of fund improvements ✓ Define who and how they will carry out the exploitation	✓ Agree on precise terms the termination and departure of a partner ✓ Take measures to finalize the right of access

Key factors to be considered:

- ✓ What is provided **(background)**, results **(foreground)** and access rights
- ✓ **IPR Specificities** - Patents, copyrights, trademarks and confidential business information
- ✓ **Conditions of entry and exit of the partners**, as well as their contributions
- ✓ Joint Venture **management structure**
- ✓ **Completion** of IP and related rights

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Commercialisation option 5: Spin-off

Deifinition

- Independent legal entity created by a parent organization in order to bring its IP assets to the market; This is an efficient solution for the parent organisation, who would not be able to market their own IP assets in the same way, such as universities or research institutes.

In this way, research organizations can focus on their main task, research, rather than marketing, which is precisely the main work of commercial companies (spin-off)

Spin-off by separation

- ✓ Formed by separation of the structure of the OM
- ✓ OM provides financing, human and intellectual capital
- ✓ The Spin-off is born from the OM in order to exploit its intellectual assets
- ✓ Normally, IP assets are transferred by **transfer** to the Spin-off

Spin-off formed by a person outside the parent organisation

- ✓ Formed by an external person to the OM for the exploitation of the IP assets of the parent organisation
- ✓ The IP assets operated by the new company (Spin-off) are transferred by **license** (the parent organization maintains control over them)
- ✓ The external professional can also be a capitalist partner

❖ **Tech transfer** to the spin-off:
- The transferred IP becomes the property of the Spin-off
- A decrease in the value of the IP has a direct impact on the viability of the spin-off, because the assigned IP is part of its capital

❖ **Licencing**:
- OM maintains ownership of IP
- If the value of the IP decreases, the existence of the spin-off is not at risk; therefore, that decrease only causes a decrease in income.

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Technology-based business opportunity (I)

What is the problem that this idea solves?

- What is the **business problem** that this idea solves?
- What is the **market need** not covered?
- In a B2B environment it should be possible to encrypt the **profits in monetary terms** that this solution represents in relation to the existing situation (e.g., these energy efficiency services will save the company 30% on its energy bill).

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Technology-based business opportunity (II)

What is the potential market of this business idea?

- What is the specific **market segment** to which this project is directed?
- What is the **monetary dimension** of the potential market?
- **Is it a growing market**?
- What are the **dynamics of the market**?
- Is it a **global** opportunity?
- Who are the **final customers** of this product / service?
  - B2C (geography, demography)
  - B2B (sector, geography, dimension)
  - Names and surnames!
- How do end customers make **purchasing decisions for similar products / services**? Why would they buy this product or service?

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Technology-based business opportunity (III)

What is the concept and business model?

- What is the **product/service**?
- What is the **market** and the **end customers**?
- What are the **channels** chosen to reach the final customers?
- What is the **sales strategy**?
- How does this company **make money**?
- What are the **margins**?
- Is this business model **scalable** in the short term?

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Technology-based business opportunity (IV)

What are the competitors / competitive advantage?

- Who are the competitors in terms of geography / type of product / similar service offered?
- What are the **vectors of differentiation** compared to the competition?
- How can this project be **protected**?
  - Intellectual property / patents
  - Disruptive technology
  - Pioneer in the market
  - Cost structure

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Technology-based business opportunity (V)

Is the team involved in the project the best prepared to take advantage of the identified market opportunity?

- What is the **relevant experience** of the project promoters?
- How did the promoters meet / what is the **"story" behind the project**?
- Who will **go to the market** within the management team?
- What is the level of **commitment** of the management team with the project?
  - How much **capital** have you contributed to the business?
  - What is your **motivation** to build the business?
- Members of the **board of directors**?

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Technological innovation strategy

The strategy requires information:

- ✓The big **trends** and future **challenges**,
- ✓The **markets** and their **foreseeable evolution** (sectoral knowledge and socio-economic context),
- ✓Our **strategic clients** (current or potential) and their **business models**,
- ✓Our **competitive environment**,
- ✓The **technology** that is used in our organization, our **capabilities** and our **competitive position**

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Innovation strategy

Area	Type of strategic information needed
Technology	• Develop your technological knowledge. • Monitor technological advances. Detect emerging technologies • Know what is being researched in a certain technological area, distinguishing what is emerging or what is already in decline. • Identify industrial opportunities • Knowing what each of the competing companies / centers is doing, focusing on their technological trajectory (eg patent maps ..) • Know experts in a certain area, as well as the most active companies / centers.
Commercial/ Market	• Monitor your customers. Monitor specific sectors and segments of the current market • Search development opportunities • Detect opportunities in new markets (may be current market sectors, markets in other countries, etc.)
Marketing	• Know the market trends. • Learn more about a competitor. Compare practices.
Purchasing	• Monitor a strategic supplier. Detect new suppliers
Society	• Understand the behavior of consumers. • Are there pressure groups in the market?
Innovation	• Generate ideas for new products / services. Identify new axes of development.

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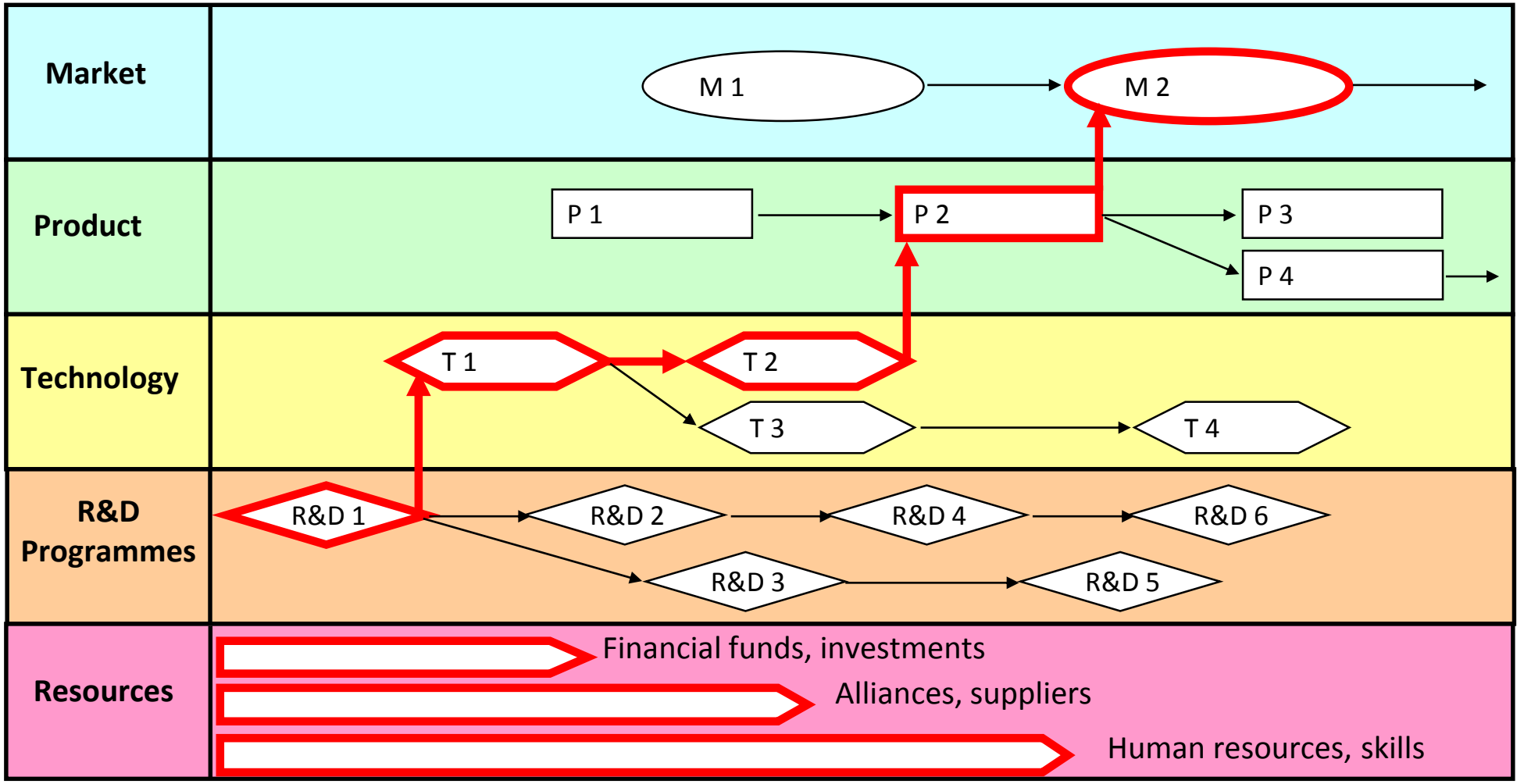
Technology roadmapping



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Tools: Incubation acceleration methodology (IMPACT)

Identify & Attract	Mark & Select	Protect	Accelerate & Develop	Commercialise	escalaTe
Set up antennas to detect , develop and attract technology-based business opportunities.	Use investment criteria to select the business opportunities with high commercialisation potential.	Develop and apply the most appropriate protection strategy based on commercialisation strategy.	Develop and execute a value-creation roadmap to validate market assumptions and dissipate tech. risks	Negotiate and sign tech. transfer agreements. Licence technology or constitute start-up, involving smart capital.	Grow the business scaling to new markets and diversifying the offer.
Prepare pitch addressing mainly market segment and size, commercialisation channels , value proposition and business model	Carry out pitching sessions in venture contest format. Assign resources to selected opportunities	Provide support on patents, copyrights, trade marks and other forms of protection	Iterate in a learning process by checking project at value-creation milestones.	Complete entrepreneurial team and ensure that opportunity is ready-to-invest.	Support additional investment rounds and negotiate exit.

Entrepreneurship Infrastructure
Ecosystem – Funding - Incentives

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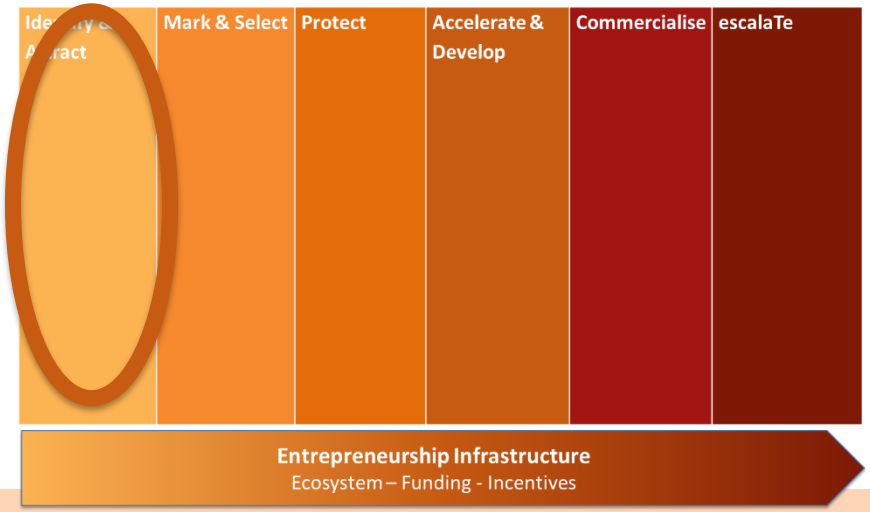
Identify & Attract



Objective

Attract entrepreneurs and intra-entrepreneurs that identify business opportunities characterized as a problem (existing or potential) in the market and a value proposition that provides a solution to this problem.

The exploitation of the business opportunity implies tackling the problem by identifying, developing or incorporating technologies and eventually developing new businesses within your organization (intra-enterprises) or in a new organization (entrepreneurship).

Issues to be addressed

Where do the technological asset development ideas / business opportunities come from?

What actions to attract companies / individuals with ideas or problems identified is carried out?

How do you assess the size of the market and access to the market for an opportunity?

How is the value proposal specified / quantified?

Are the risks (technological and market) explicit for the business opportunity?

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Identify & Attract – Strategic surveillance

Objectives

- Transform the information collected by the organization into ideas that lead to the improvement of the organization within its environment.
- Generation and treatment of ideas applicable to the development of new products, services or processes, or in the improvement of existing ones.

Methodology

- Monitor the environment (search, collect and analyze information that is considered relevant to the organization).
- Exploit information, in such a way that it is distributed and used in a way that allows decision making.

STRATEGIC SURVEILLANCE

TECHNOLOGICAL SURVEILLANCE Information of a scientific and technical nature	COMPETITIVE SURVEILLANCE Current and / or potential competitors
COMMERCIAL MONITORING Customers, suppliers, markets, labor in the sector	SURVEILLANCE OF THE ENVIRONMENT Legislation, regulations, politics, economy, culture, environment

- ✓ See what others invent can give us clues
- ✓ It is necessary to establish the resources for obtaining information

http://www.prodintec.es/catalogo/ficheros/aplicaciones/fichero_13_5034.pdf

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Intelligence vs. surveillance

Competitive Intelligence encompasses and exceeds the concept of Technological Surveillance, adding the strategic or business dimension.

Surveillance has a role of detection while **competitive intelligence has as mission the strategic positioning of the company in its environment**

Intelligence is not only observation but an offensive and defensive practice of information. It is a tool that connects the knowledge of the company with the action

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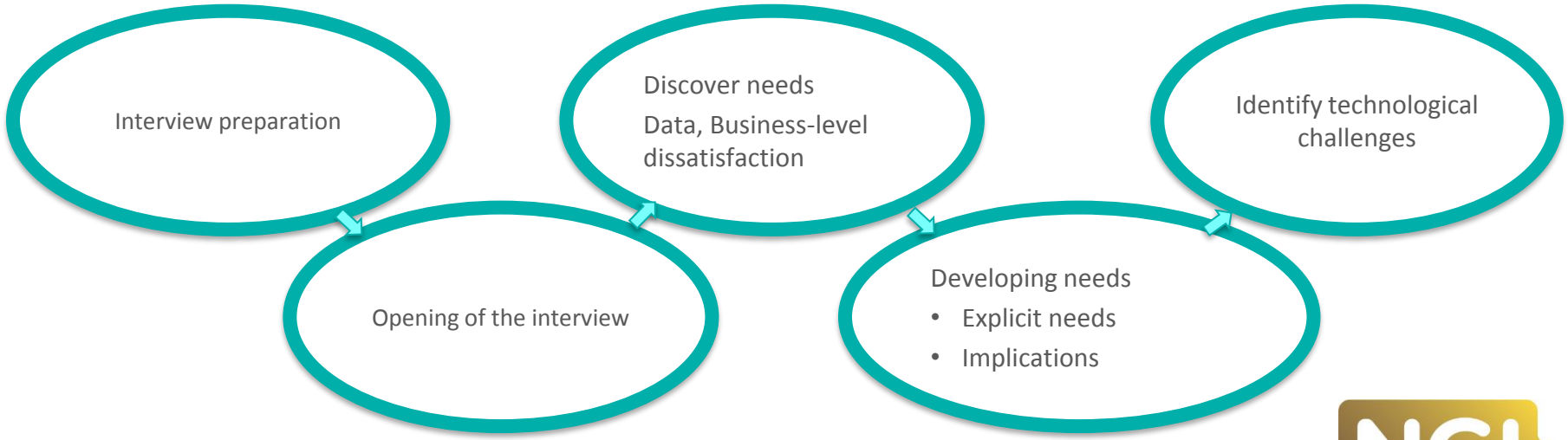
Identify & Attract – Identification of challenges

Objective

- Identify technological and market challenges so that, at a later stage, we can find the market and technological niches in which we can focus to offer competitive solutions.

Methodology

- Analysis of strategic technology and innovation plans and market and technological trends. In this way, we will openly and creatively identify technological and market challenges based on the experience of different companies, as well as the demand from the market.



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Detecting challenges through talking to clients

Preparation of the visit: key to credibility

Do **NOT** appear as the developer of **great solutions** and realities unknown to the client but of ability, interest and credibility to be of real **HELP**

What would be unforgivable not to **know about the client**?

Company, sector, challenges, information available in the press, from other colleagues, etc.

Who is the **contact person**? Is it the right one?

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Detecting challenges through talking to clients

What not to do:

- **Giving information is less useful than requesting information**. Not giving unsolicited information. Do not talk about our capabilities.
- **Do not discover a solution**, or give a catalogue of solutions. If the problem is not clear, the solution has a high probability of being inadequate.
- If the solution is given too soon, the client enters **objection mode** and goes into defensive mode.

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Detecting challenges through talking to clients

Identifying needs

1. Keep a list of potential dissatisfactions
   - *Maintenance takes more and more time ...*
   - *It is a problem to change technology without sufficient information ...*
   - *We are behind the competitors ...*
2. Questions about things that are already known to position them in the mind of the interlocutor. Remember previous conversations
   - *What percentage of effort does maintenance take?*
   - *What market share do you have?*
   - *How does the crisis affect?*
3. Questions about problems/needs
   - *You are totally satisfied with...*
   - *What disadvantages do the current processes present?*

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Identify & Attract – Idea competition

Objective

- Attract entrepreneurs and intra-entrepreneurs that identify business opportunities that respond to specific challenges (existing or potential) in the market and a value proposition that provides a solution to this problem.

Methodology

- It consists of developing a platform (usually online) in which entrepreneurs can share their ideas, so that the best ones can be selected, supported and followed up and awarded; guidelines can be established, although it is also possible that the competition is completely open and without any type of restriction.
- There are platforms that allow organizations to publish their technological and market challenges in order to find solutions to these challenges.

Open to public or private

Clear strategic objective

Possibility of collaborating on the ideas of others

Selection criteria determined

Clear process: reward and follow up on the winning idea

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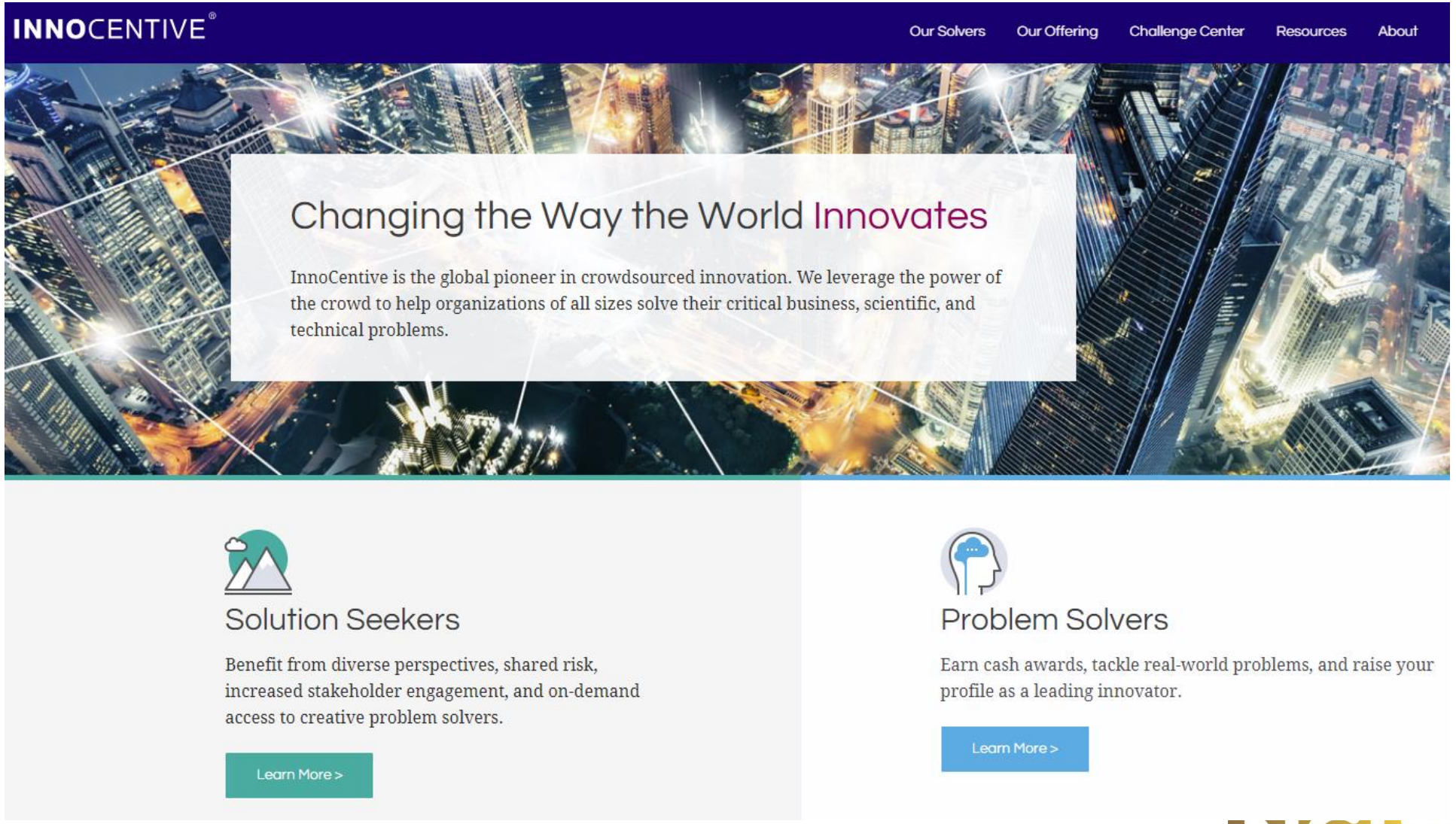
INNOCENTIVE Platform



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TRANSLUCENT INNOVATION Platform

Translucent Innovation®

Safe Open Innovation for Free

Innovating with partners by sharing risk and sharing reward

1. Need	Start with a technical problems, customer needs or future potential business opportunities
2. Request	The need is made public in a standardized way via the web, intermediator, LinkedIn or e-mail lists
3. Response	Anyone is welcome to contribute: companies, universities, polytechnical institutes, private inventors
4. Evaluate	One or a few solutions are selected and discussed under NDA
5. Win-Win	Joint ventures, supplier deals, contract research, capital awards

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The key to a business

The key to a business is not the idea, but the problem we solve. Hence, more than the imagination (which is needed to create the solution), the key is in the observation to identify unresolved problems.

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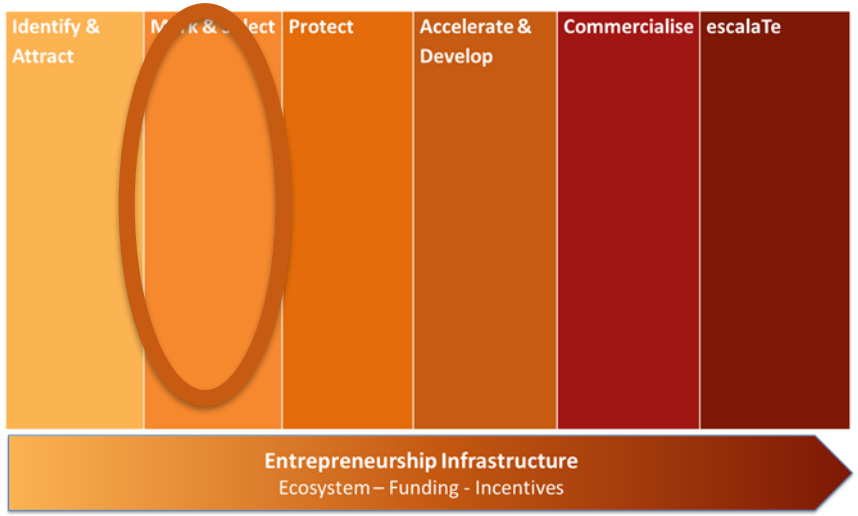
Select



Objective

Prioritize business opportunities by establishing a "deal-flow" portfolio with business opportunities based on technologies, piloted by committed entrepreneurs. We focus on business opportunities with high growth capacity that typically require technological development or the application of technologies and business models in an innovative manner.

Issues to be addressed

What criteria are used to decide / prioritize the development of technological assets / business opportunities?
How do these criteria apply?
Who participates in the decision?
Analysis of risks vs. benefits?

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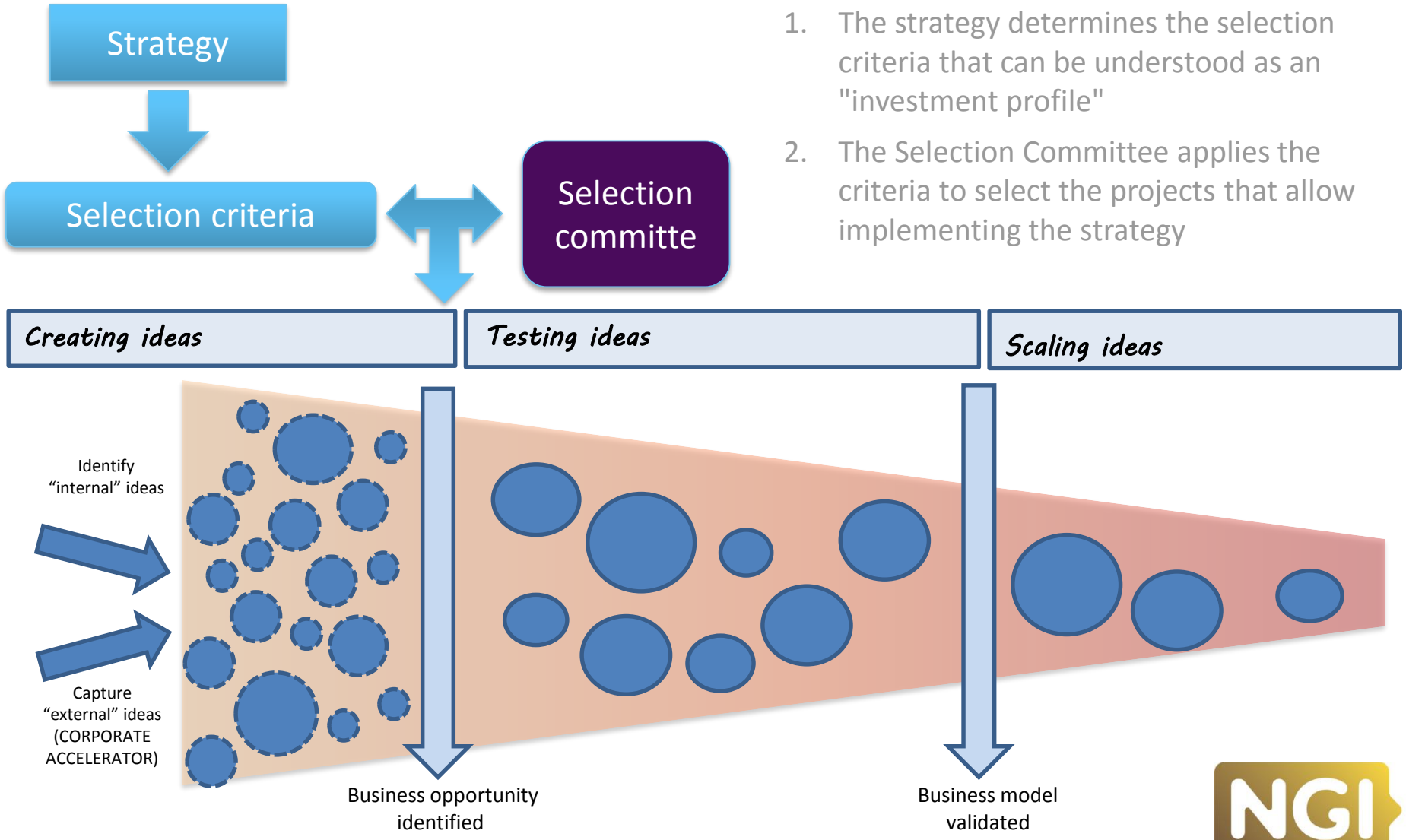
Investment committee



1. The strategy determines the selection criteria that can be understood as an "investment profile"
2. The Selection Committee applies the criteria to select the projects that allow implementing the strategy

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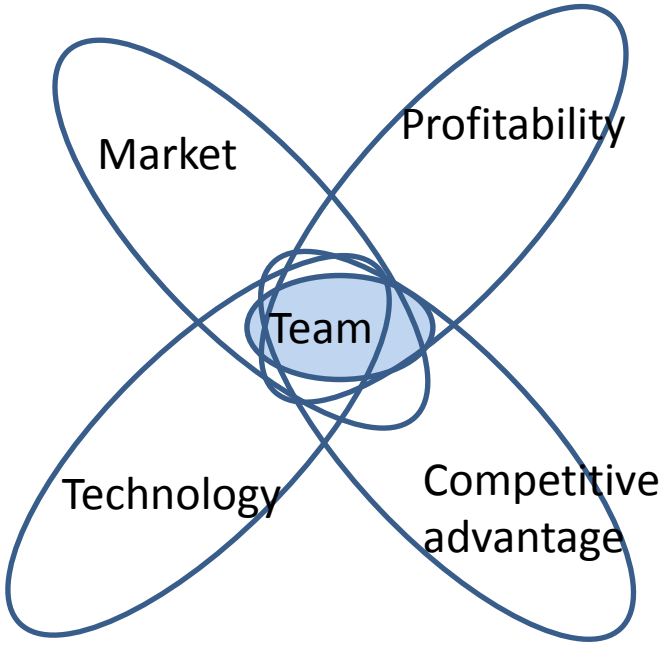
Selection criteria – applicable regardless of project



Criteria	Explanation
Market	Identify big and growing market
Technology	Validated technology to solve the problem effectively
Profitability	Sustainable business with sound business model
Competitive advantage	Innovation creating an advantage wrt competitors. Sustained advantage (e.g. through protecting technology)
Team	Competencies, capabilities and commitment of team members

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Select – Elevator pitch

Objectives

- ✓ Evaluate business opportunities presented by committed entrepreneurs. We will identify business opportunities with high growth capacity that typically require technological development.
- ✓ We will select the best ideas based on pre-defined criteria.

1. **Problem:** What problem is solved? Market opportunity?

2. **Value proposition:** business concept (product / service description)

3. **Market:** identification of potential customers, channels and sales strategy

4. **Business model:** How is money made?

5. **Positioning:** competitors and competive advantage

6. **Risks:** identification of risks and mitigating factors

7. **Team:** persons, roles, commitment, partners

8. **Cost effectiveness :** Financial perspective (sales, income and expenses)

9. **Roadmap:** identification of value creation milestones and financing needs

10. **Proposition for investors:** returns, alliances and "exit" strategy

NGI TRUST

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Select – Canvas Business Model

Objective

✓ Guiding the process of incubating an opportunity to pass, through iterations, a preliminary A value proposal, to a B value proposal with real options to operate in the Market; it helps to identify the critical aspects of an opportunity and to design and model the value proposal iteratively.

How?

➢ **Key partners** Define the necessary alliances to carry out the opportunity with guarantees.	➢ **Key activities** Detail the internal key activities that will allow us to deliver the value proposal to the client. ➢ **Key resources** Describe the resources necessary to bring the proposal to the market.	➢ **Value proposition** Formulate the Single Value Proposal in a clear and synthetic way; It is necessary to reflect why we are different and what is the key value of the purchase (it has to be different and that difference has to matter).	➢ **Customer relations** Relationship that we are going to maintain with our clients, as well as what we are going to inspire them ➢ **Channels** How to deliver the value proposal to the client, and through which channels interact with them.	➢ **Segmentation of customer** Define which segment we are going to address (necessary to know the market niche and opportunities of our business).
➢ **Cost structure** The formula lies in the maximum value for customers at the lowest cost.			➢ **Revenue sources** We must find a solid revenue structure that amortizes our value proposition.	

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Selecct - Market sizing

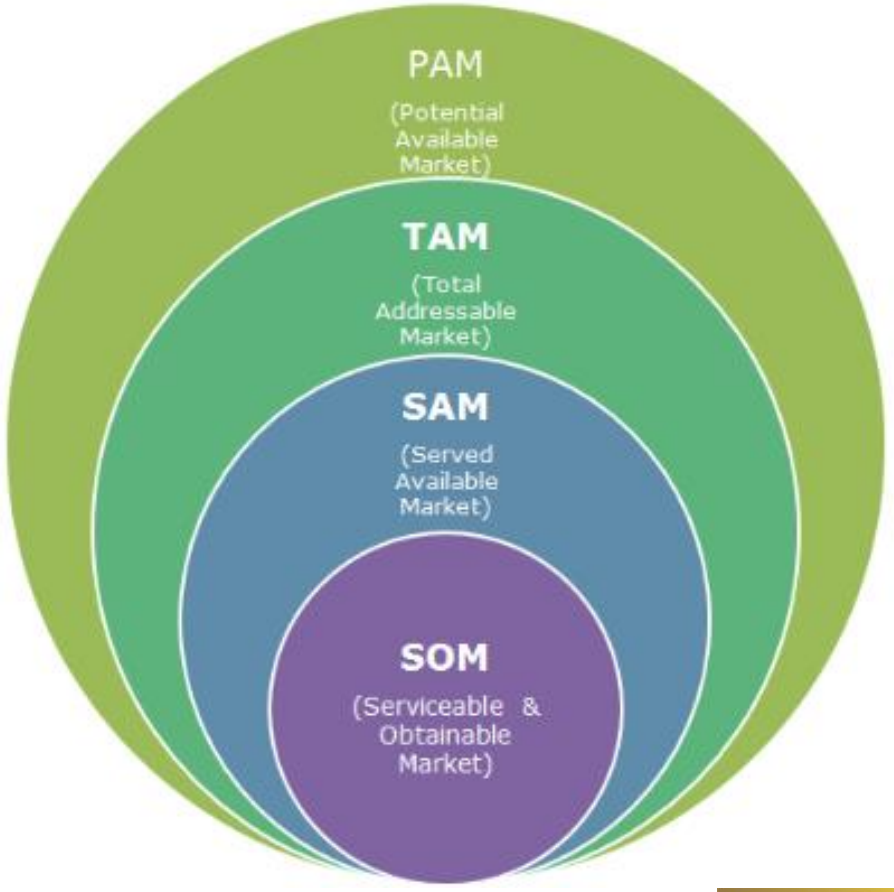
Objective

✓ Determine the size of the market in quantitative and qualitative terms.

TAM: Expenditure by customers on a particular market segment

SAM: Expenditure by customers on a particular market segment on my product category

SOM: Expenditure by customers on a particular market segment on my product



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Risks

Which are the most significant risks in the project?

1. Factors for success/failure
   - *Regulation*
   - *Window of opportunity*
   - *Competitors*
   - *Traction*
2. Migitating factors
   - *Implications in the roadmap: reduce risk*
   - *Other strategies*

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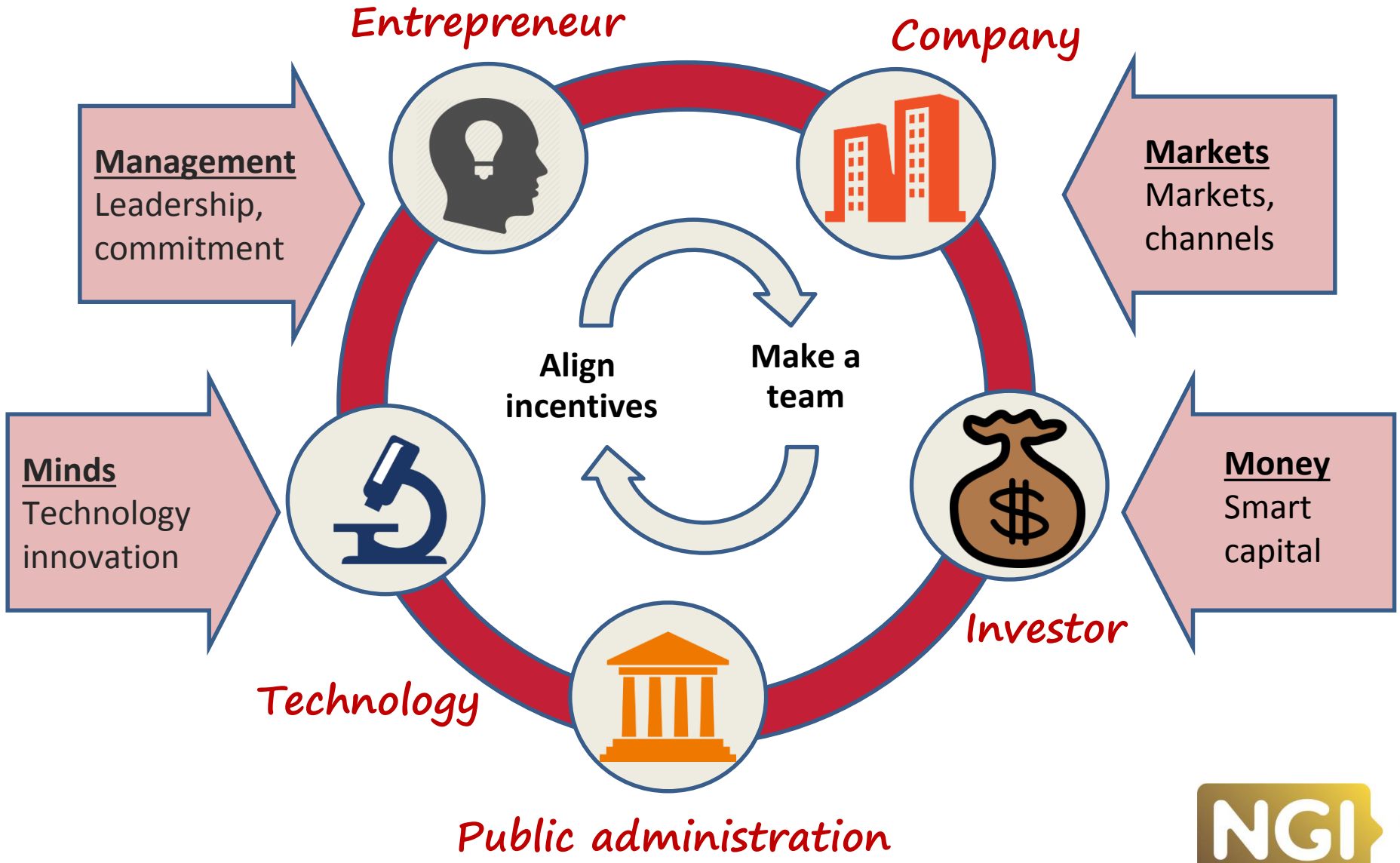
Necessary elements for technology transfer



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Team

Is the team involved in the project the best prepared to take advantage of the identified market opportunity?

- What is the relevant **experience** of the project promoters?
- How did the promoters meet / what is the **"story" behind the project**?
- Who will play which **roles**?
- What is the level of **commitment** of the management team with the project?
    - How much **capital** have you contributed to the business?
    - What is your **motivation** to build the business?
- Members of the **board of directors**?

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Example of a team

CEO

Raúl Otaolea
SW Engineer
MBA
10 years of experience in videogame startups (GamePRO, juegon.com, Novoplay)

Business developer

Alex Conceiro
SW Engineer
5 years of experience in videogame startups (GamePRO, Koneo Entertainment).

CTO

Kiko Almeida
SW Engineer
10 years of experience leading videogame teams (GamePRO, juegon.com, ludado)

Software engineers

Enthusiasts of agile technologies and SCRUM. **Experts in tehcnology** with more than 10 years of experience in graphics, tools, architectures, middleware, UI / UX, communications and R & D.

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TECHNOLOGY TRANSFER – Preparation of negotiation

Once the asset has been identified, protected and valued, it is necessary to define a **marketing strategy** based on a series of additional criteria. Planning is key and attitude too!

- Have **clear objectives** and sufficient empowerment.
- Negotiate with **confidence and credibility**
- Be flexible and create a **climate of trust**. Win-win layout.
- **Do not reject any option without analyzing it 100%**.
- **Do not present hot options without analysis**.
- **Analyze first encounter**: client strategy and flexibility. Strengths and weaknesses. Establish what aspects have been key or trivial for the other party. Ditto on our part. Orient the possibility of success and minimize wear.
- Knowing how to conclude or **withdraw on time: <u>It is NOT a failure</u>**.

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TECHNOLOGY TRANSFER – Preparation of negotiation

- **Establish selection criteria for the most appropriate partner:**
  - At the strategic level (shared objectives, complementary needs, technological capacity, market access ...)
  - At the collaborative level (compatibility of values, ways of acting ...)

- **Most suitable transfer modality:** assignment, securitization, license ... Focused on licenses, determine geographical area, sector, customer profile and type:
  - **Exclusive license:** full powers are granted to the licensee, so that the technology owner can not grant licenses to others or exploit by himself.
  - **Single license:** both the licensee and the licensor are entitled to exploit the results, however, the technology owner can not grant licenses to others.
  - **Non-exclusive license:** the owner of the technology maintains the right to exploit the technology by himself and can grant all the licenses he deems appropriate.

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TECHNOLOGY TRANSFER – Preparation of negotiation

- **Establish value strategy,** based on an upfront payment and some royalties, which must be perfectly evaluated at the start:
  - Define, based on expected benefits, **what each party must obtain** to adjust the royalties.
  - As a general criterion, the licensor must receive between 25 and 33% of the expected benefits. **Agree a percentage on sale price, not on margins (we do not have that information).**
  - **Avoid**, as far as possible, **fixed fees** in upfront and royalty.
  - Collect **annual minimums** for the exploitation of licenses.
  - Include **correction mechanisms** to facilitate agreements.
  - How we want the **payment method**.
- **Previous NDA well built,** never start negotiations without it

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TECHNOLOGY TRANSFER – Preparation of negotiation

- Disposition **WIN-WIN** attitude is important in a negotiation.

- **CRITICAL:** We must be very clear, before starting the negotiation process, the **limits that I must impose on the transaction**, without forgetting win-win criteria:

  - What **I WOULD LIKE** to get
  - What **I INTEND** to get
  - What **I MUST** get

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TECHNOLOGY TRANSFER – Preparation of negotiation

- It is not necessary, but if you have to sign a **Memorandum of Understanding (MOU) or Letter of Intent**, make sure that we **do not sign anything whose consequences on the subsequent license agreement are unknown or vague**. They are legally binding in many countries.
  - The agreements of intentions are held in negotiation processes, and constitute pre-contractual agreements other than the pre-contract.
  - But they contain provisions that are mandatory, such as confidentiality agreements, non-competition or criminal clauses.
  - Legally extremely delicate document.
  - It should contain concrete and binding deadlines and activities.

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TECHNOLOGY TRANSFER - Contract

The transfer of technology represents a commercial relationship and is therefore a CONTRACT. It is therefore necessary to establish legal requirements that give it a binding and enforceable nature.

Consider that all license agreements are, for all the above, UNIQUE. It reflects individual needs and expectations. They can not be serialized. The variety is almost infinite, but there are fundamental aspects that should be taken into account in transfer contracts:

- Unambiguous **identification of the parties and their interests**
- Clear **description of the asset** that is transferred, phase in which it is located (pilot, industrialization ...) and associated development needs, quantified.
- **Transfer mode**

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TECHNOLOGY TRANSFER - Contract

- **Considerations:** mutual assignment, fixed payment, mixed fixed and proportional to sales, participation in capital ...
- **Terms of payment**, with its nuances (set exchange rate if it is in foreign currency, terms, guarantees ...) and obligations (audit in client if there are royalties ...)
- Define the **scope and quantification of future services** very well and separately (additional development, public support ...)
- **Duration** of the agreement
- Use of **brands**
- Regulated **acquisition possibility** based on objectives
- **Sublicenses and distribution of benefits**
- Cases of **non-compliance, arbitrations, compensation**
- **Adjustment mechanisms**...

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TECHNOLOGY TRANSFER - Contract

Some **relevant aspects of a transfer contract**:

- Even if there is an **NDA**, the negotiation goes into more detail in the technology and its market. Therefore, it is advisable to have a specific **section in the NDA that guarantees the confidentiality of subsequent conversations**.

- **Scope of rights**: what is transferred exactly and for what purpose (**exclusivity, territory...**). If possible, we don't want to give exclusivity:

    - For **economic reasons** of impact maximization
    - Because we will **not depend on the success of a single licensee** whose operability/will we do not control
    - Because we maintain a better **control of technology** and allows it to evolve more by being in several markets and even in different products
    - Define it always based on **customer profile** (does it operate internationally?)

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TECHNOLOGY TRANSFER - Contract

- **Control sublicenses** very specifically. From the start, try to avoid it. If it is done, incorporate that is always under the tacit agreement of the licensor and determine how the benefit is distributed.
- Special attention to the **improvements**, which are also contemplated in Law. It is necessary to clarify very well what is improvement and what is not and therefore not covered by the Agreement.
- Establish **royalties based on gross sales or units sold**, avoiding decreasing values by volume.
- Establish an **annual minimum** to ensure customer diligence or avoid commercial strategies that are contrary to exploitation.
- If appropriate, **share risk** in exchange for a greater benefit.

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TECHNOLOGY TRANSFER - Contract

- Establish **financial control** over sales, including **external certification** option and who assumes the costs.

- **Do not allow ambiguous clauses** of the type "the client will make the maximum efforts in the commercialization ...". Minimize the requirements and if resistance is perceived, increase the annual minimum.

- Take care of the **clauses that go against legislation**: setting product prices, prohibiting customer relations with certain companies, reciprocal licenses, obliging to accept additional products to the licensee...

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1 Oceantec - Technology to exploit the power of the waves

EXIT

In September of 2018, **IDOM**, the multinational company that offers professional integrated services in Consulting, Engineering and Architecture around the world, established a new business unit due to the acquisition of OCEANTEC business.

This investee company of TECNALIA, has been the first company in Spain to overcome the milestone of a **wave energy collector** installed in the sea, which is connected to the grid. In order to achieve this milestone, OCEANTEC fell back on EVE (The Energy Agency of the Basque Government).

OCEANTEC

In this way, TECNALIA Ventures has successfully completed the integral management of the life – cycle of the technological asset on which OCEANTEC was developed.

OCEANTEC, is a technology-based company, whose purpose is to become one of the main role-players in the wave energy industry. So as to achieve that purpose, OCEANTEC develops a wave energy converter, which will compete in the market as one of the bests in terms of the costs of the produced energy and maintenance costs.

NGI TRUST

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2 White Zone – Cybersecurity asset to restrict access of malware

LICENSE

TECNALIA Ventures signed an agreement with a company that belongs to a great corporate group and with another big IT consultancy firm so as to supply Whitezone. This is a product patented by TECNALIA, which is used in cybersecurity in order to define the industrial zone out of malware (threats) and restrict access only to secure software and to authorized people within the area enclosed as the operating area.

WHITE ZONE

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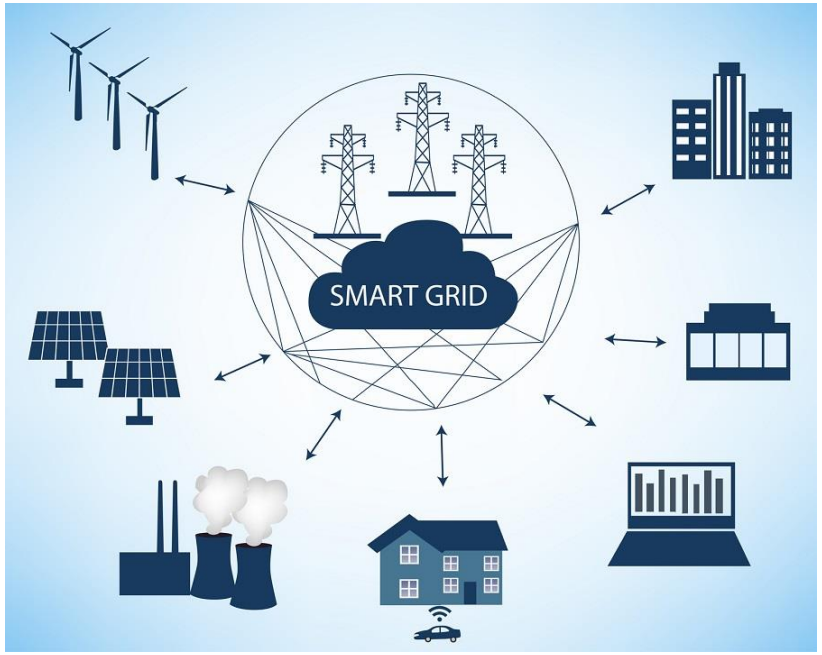
3 SOTER – Cybersecurity in Smart grids

LICENSE

TECNALIA Ventures signed an agreement under royalties with SABICO Security in order to supply SOTER internationally. SOTER is a non-intrusive system for detecting cybersecurity anomalies and operations for the Smart Grid through the comprehensive monitoring of communications, which was developed by TECNALIA.



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4 DINOFLUX - analysis of massive malware and generation of threat intelligence

EXIT (Not-Tecnalia)

In May of 2018, **ElevenPaths**, Telefonica's Cyber Security Unit, acquired **Dinoflux**, one of the startups that got to the final of the International Acceleration Program of Cybersecurity Ventures, a program that was partly managed by TECNALIA Ventures. The main aim of this acceleration program was to develop the participants' businesses in order to attract investors and customers. This way, TECNALIA Ventures, together with Cybersecurity Ventures, not only has accomplish the goal of the program, but also has achieved to successfully complete the integral management of the life – cycle of the technological asset on which Dinoflux was developed.

Dinoflux is a startup that focuses on the analysis of massive malware and generation of threat intelligence in real time, providing the needed tools to answer adequately to security incidents.

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5 NEM SOLUTIONS. Intelligent maintenance of complex systems

EXIT

In 2015, TECNALIA sold to GAMESA its participation in the shareholding of NEM Solutions company which has a turnover of 4.2M € and employs 41 people. In this way, TECNALIA Ventures has managed successfully the entire lifecycle of the technological asset on which NEM Solutions was based, obtaining the highest return on the investment in R&D performed by TECNALIA in it.

Nuevas Estrategias de Mantenimiento S.L., which operates under the trademark NEM Solutions, is a technology-based company focusing on the intelligent maintenance of complex systems. It provides innovation, creativity and efficiency to the field of maintenance, resulting in a competitive product that provides companies a bridge between their daily work and technology and research. In this Way, it allows an interaction full of information and knowledge between the maintainer and the machine, thanks to thanks to the incorporation of state-of-the-art engineering technology maintenance, with the aim of facilitating and optimizing the activity and profitability.

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Exercise – Allocation of resources

Objective: **Decide which research project you want to join, keeping in mind potential business opportunities**.

- Please read the outline **descriptions of technologies** on the following slides.
- Each of these is **a potential new project for you to work on**. You need to decide how to allocate your time and other resources to each of these projects.
  - Which is best? Which is worst?
  - What factors do you take into consideration?
- You need to decide which are the highest **priorities** for you.

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Exercise – Allocation of resources

1. Camera Projector

- A researcher in the Department of Electrical Engineering brings to you a working prototype of a digital camera modified to be used as a digital projector for PowerPoint presentations for example.
- The invention is unpublished and is the work of a team of researchers involved in European Framework funded research programme.
- The invention is patentable.
- There is clear demand for the technology as a portable replacement for digital projectors; it works!

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Exercise – Allocation of resources

2. Malaria Invention

- Fellow researchers in the University's Research Centre for Tropical Diseases arranges a meeting with you to discuss very impressive new, unpublished results for a new vaccine candidate for anti-malaria vaccination, twice as effective as other vaccine candidates in clinical trials.
- The Professor has filed a number of patent applications with you before on her other vaccine work, and is a consultant to a global pharmaceutical company.
- Personnel from the technology transfer office have already contacted you and are willing to work with you to file patents and get the technology to the market.

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Exercise – Allocation of resources

3. Submarine

- A retired medical doctor who used to be one of a team of doctors at the University Student Medical Centre, brings a model for a new submarine design based upon the invention that the submarine is more efficient if it has a vertical hole through the body of the submarine.
- His invention was made whilst he was on a dolphin watching holiday, when he observed how well dolphins move with a hole in the top of their bodies.
- The Doctor has done a patent search in his local library and identified no prior art.
- He has produced the model under strict confidentiality conditions at home.

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Exercise – Allocation of resources

4. Tent

- A team of researchers in your university has designed a new, lightweight, rapidly erected tent for all applications from leisure to defence.
- The requirement for an easily transported and rapidly erected tent or shelter system is essential for military and emergency aid situations, civilian applications and the leisure industry.
- Using a series of simple mechanical linkages a 2D sub-unit can be easily expanded to provide temporary accommodation of high strength suitable for use in a wide range of climatic conditions.
- The invention is patentable.

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Exercise – Allocation of resources

5. Smart Meter

- Researchers at your university have developed a metering device which helps consumers identify the use, or more appropriately misuse, of appliances in the home and work environment.
- The “Smart Meter” tells consumers which electrical devices are switched on and how much power they are consuming at any point in time, and over time.
- Meters are currently available to measure electricity supply but only provide information on total consumption in half-hourly periods.
- By altering behaviour when using electricity the consumer can significantly reduce their consumption, save money and reduce their CO2 footprint.

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8. **Real examples** of successful technology transfer cases
9. **Exercise:** Allocation of resources across a number of technology-based business opportunities
10. **Exercise:** Route to market for different technologies

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Exercise – Route to market

Objective: How to decide the right 'route to market' for a number of example technologies.

- **Select one / two of the projects from the previous exercise** and prepare a plan for how you are going to manage the **commercialisation** of the project.
- Describe how you plan to **evaluate, protect, and market the project**. What is the route to market for the technology?
- Please prepare to **explain** how you will commercialise the project.

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Exercise – Route to market

Keep in mind

1. IP Protection
2. Urgency
3. Novelty
4. Inventor(s)
5. Market Size
6. Support from Technology Transfer Person

When to go ahead with research

1. Protectability
2. Sufficient Novelty & Market Size
3. Consistent with Institutional Mission

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NGI TRUST

THANK YOU!

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