Deliverable 5.4 Manual - Setting up investment plans for large scale RDI initiatives

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1. Introduction

This report results from the H2020 project entitled "EU-GREAT!".[1] Objective of the report is to capture the methodology and supporting documents that constitute a methodology for the development of a business and investment plan for an LSI.

Box 1: Definition of an LSI

Large-scale research, development, and innovation initiatives (LSIs) are defined within the framework of EU-GREAT! as "industry and application driven, long-term, broad (open) access, multi-stakeholder partnerships strategically targeting large-scale research, development and innovation activities using a combination of different funds aiming at accelerating the commercialisation of technology, boosting competitiveness of companies and renewing industrial ecosystems towards sustainable economic growth and well-being of society." They can be considered in practice as Public Private Partnerships (PPPs) defined by cost-intensive research infrastructure, addressing the later stages of the innovation process (i.e. pilot production and demonstration).

This report builds on prior results of the EU-GREAT! project (see Figure 1), including an extensive exercise in which the approach for the development of business and investment plans was assessed, and actual plans were developed. The assessment of the approach and drafting of the plans included interviews with relevant stakeholders in the LSI from RTOs and governmental (funding) institutions. Also external financiers involved in equity and debt financing were involved.

Box 2: The EU-GREAT! project

Objective of EU-GREAT! is "to identify the key issues combining different funding mechanisms to support scale up of research into commercial manufacturing in large scale RDI initiatives. Next to this overall objective, the impact of the project is to further initiate the development of these RDI initiatives, using a combination of different funding mechanisms. This is being facilitated with concrete deliverables, being both recommendations to policymakers and private investors to improve the combination of funding, as well as manuals for organizations to setup investment plans for RDI initiatives using a combination of funding mechanisms."

The rationale for EU-GREAT! stems from the observation that more funding is needed to bridge the gap between the laboratory and the market and both public and private sectors must join forces to increase the number of large-scale RDI initiatives (LSIs) in Europe in order to ultimately boost the commercialisation of new technologies, products and services, able to strengthen the competitive-edge of the European Industry (bridging the so-called 'valley of death').

Stakeholders of large-scale RDI initiatives often have to deal with the challenges of applying for, and combining, funding from different public and private sources including European Structural and Investment Funds (ESIF), Horizon 2020, as well as national, regional and private investment programmes, to build and manage a portfolio of synergetic projects.

This report includes a presentation of the *Approach* towards drafting a business and investment plan for an LSI. It furthermore contains the corresponding documents that support the development of such plans: the *Business plan* outline; *Canvas method*; and the outline *financial plan* (all marked in red in Figure 1). These documents and (underlying deliverables) form the basis for the interactive website of the EU-GREAT! project, that guides stakeholders involved in the set-up or continuation of an LSI towards a business and innovation plan with which financiers (public as well as private) can be approached for funding or investments.

[1] See www.eu-great.com.

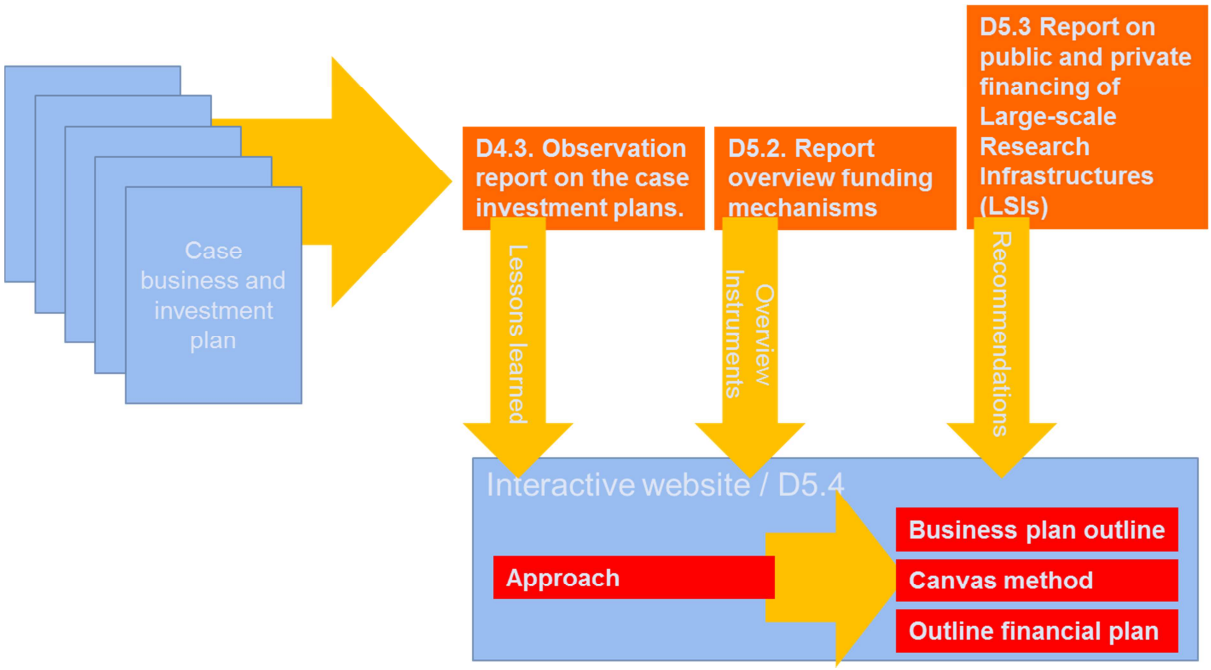

Figure 1: D4.5 and its link with other deliverables

All elements that constitute the interactive website (e.g. Outline *financial plan*, *Business plan* outline) can be downloaded from the project website (www.eu-great.com/).

Box 3: EU-GREAT! and its link to I4MS

Some of the results of the EU-GREAT project are presented according to a format that refers also to the I4MS project. Both are co-funded by the European Commission under the H2020 programme. The EU-Great project (NMP 37-2014 CSA) and aims at the assessment of the (combined) funding of so-called Large Scale RDI initiatives (LSI). The XS2I4MS (NMP-FoF9 2015 CSA) aims at supporting support consortia to assess the feasibility of so-called Digital Innovation Hubs (DIH) in their region.

Combining EU-Great and XS2I4MS activities was considered important, as both projects focused on the assessment of new entities that can help research and innovation to cross the valley of death by sharing infrastructure and expertise. For these entities the EU-Great uses the concept of LSIs and within I4MS (DIHs), but show strong overlap in objectives and approach.

2. Approach for the development of a business and investment plan

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Objectives of the presentation

- ***Objectives:***
  - ***Create an overview of the core elements of a business plan for an innovation hub***
  - ***Create practical insights how to develop these different elements***

- ***Why:***
  - ***To provide a holistic overview of a business plan when starting the development of a hub, will support a more focused and efficient hub development process (reversed engineering)***

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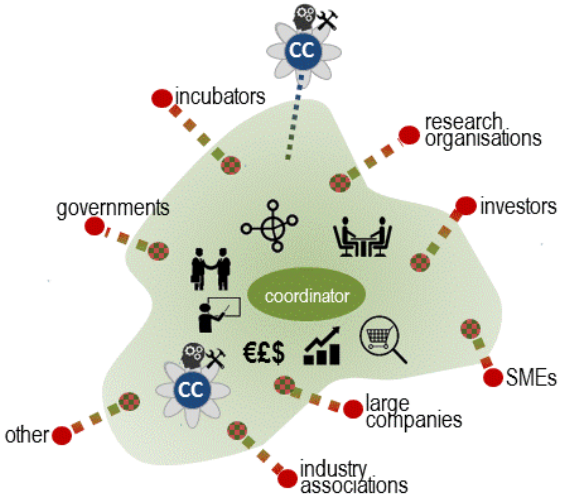
What is an Innovation Hub



- Support ***transforming*** technology into business (main focus TRL4-6)
- ***Sharing*** infrastructure and expertise
- ***Open*** innovation structure, allowing new partners and customers
- ***Tripartite*** cooperation between research, industry and government
- Formal ***linkages*** with a Competence Centre, or even a CC included.
- A ***spider in the web*** of the innovation ecosystem, supporting the community
- Formal ***linkages*** with important stakeholders in the innovation ecosystem
- Aiming a ***SMEs and MidCaps***, open for large companies

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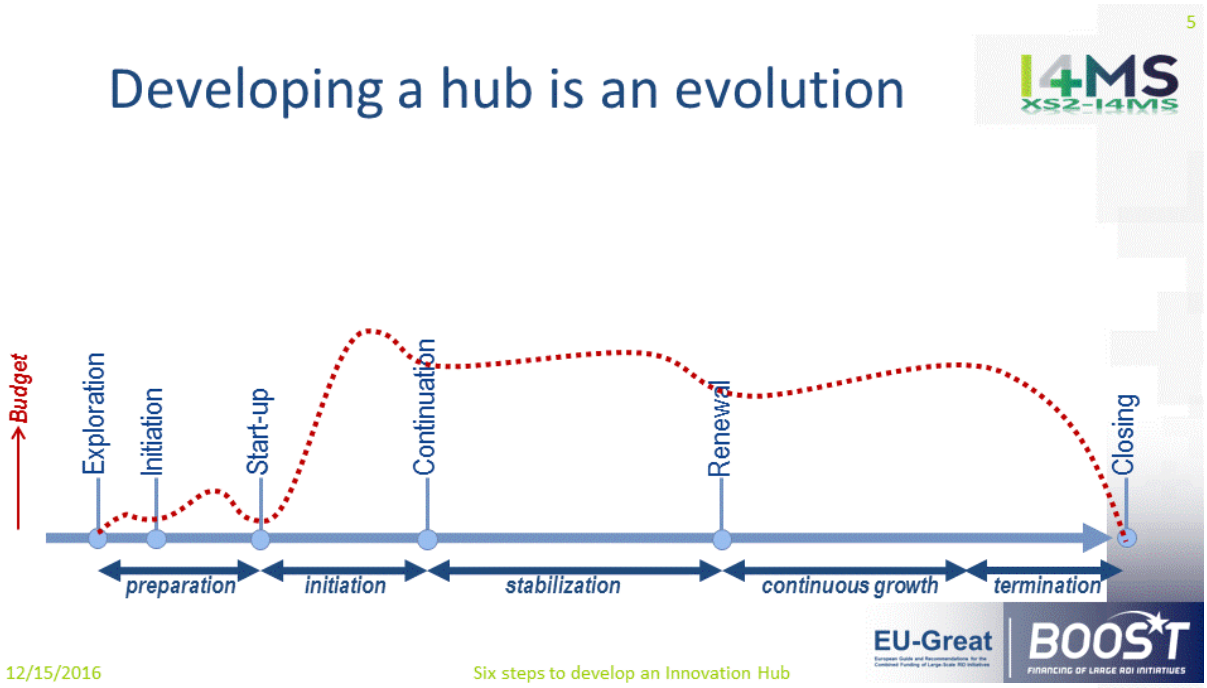
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Developing a hub is an evolution
I4MS
XS2-I4MS
Budget
Exploration
Initiation
Start-up
Continuation
Renewal
Closing
preparation
initiation
stabilization
continuous growth
termination
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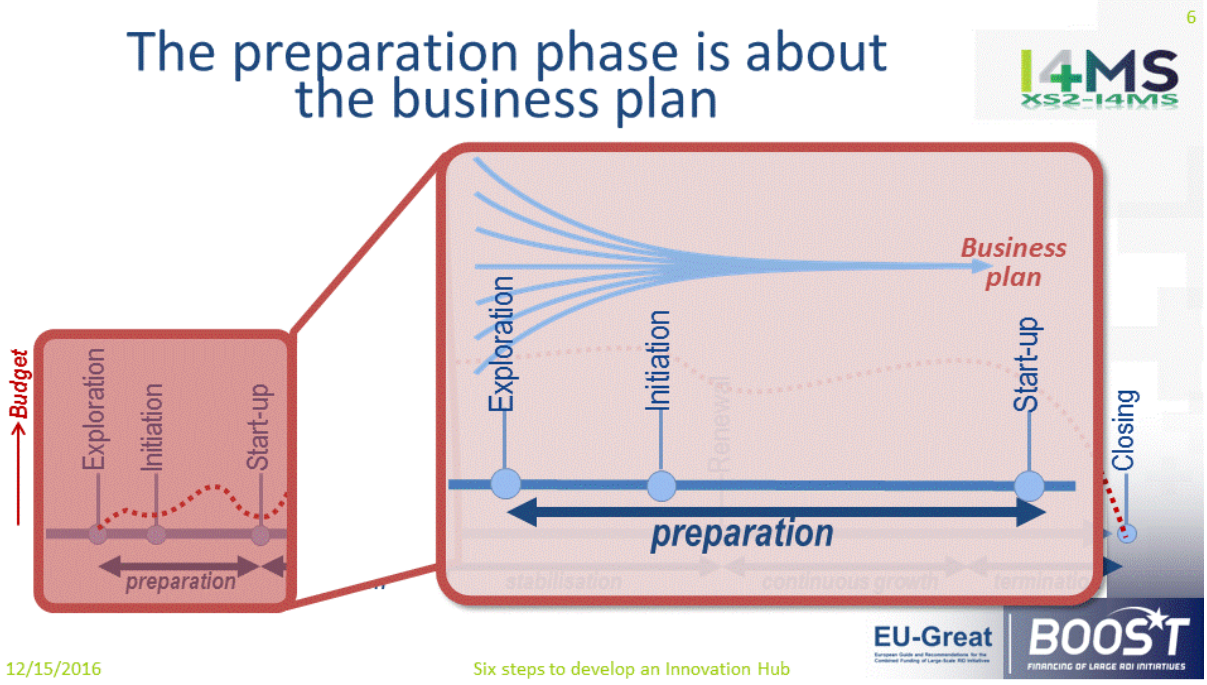
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The preparation phase is about the business plan
I4MS
XS2-I4MS
Budget
Exploration
Initiation
Start-up
preparation
Business plan
Exploration
Initiation
Renewal
Start-up
Closing
preparation
stabilisation
continuous growth
termination
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Why a business plan

- Objective: A document that details a venture and "tells the business story" by describing the purpose, basis, reason and future of the initiative.

- Why:
  - *To create a plan for the future*
  - *and* ***get funding***

Using a business plan as an end goal during the preparation phase, will focus the activities during this process and create:
- valuable **content** and a clear view on next steps;
- **commitment** to this content from the partners and stakeholders.

Both are needed for the actual initiation of the innovation hub.

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The business plan is a standard document, creating a solid conceptual basis to other proposals.

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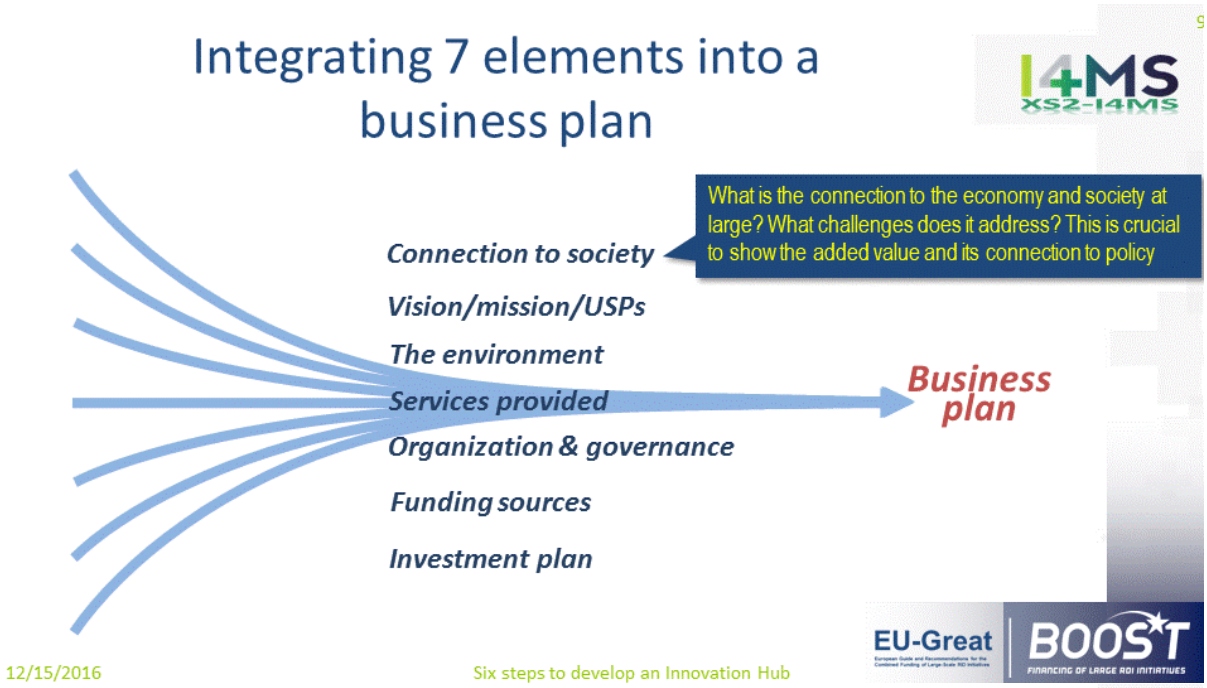
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
What is the connection to the economy and society at large? What challenges does it address? This is crucial to show the added value and its connection to policy
Connection to society
Vision/mission/USPs
The environment
Services provided
Organization & governance
Funding sources
Investment plan
Business plan
EU-Great
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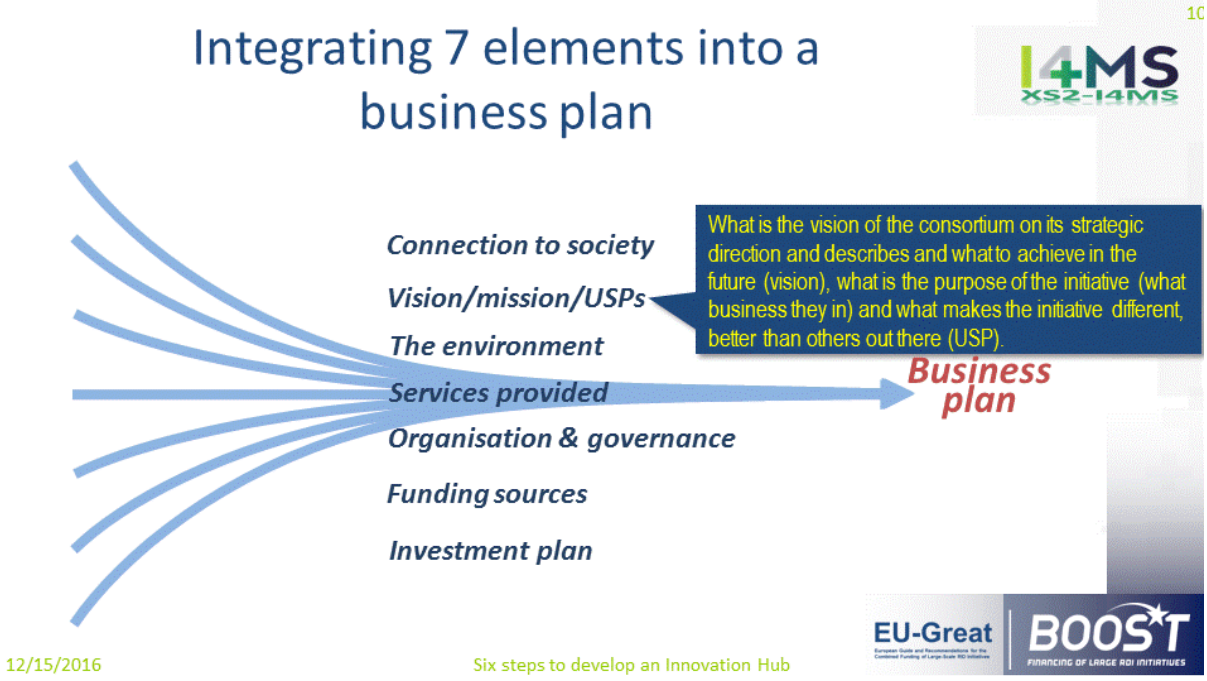
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
What is the vision of the consortium on its strategic direction and describes and what to achieve in the future (vision), what is the purpose of the initiative (what business they in) and what makes the initiative different, better than others out there (USP).
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governance
Funding sources
Investment plan
Business plan
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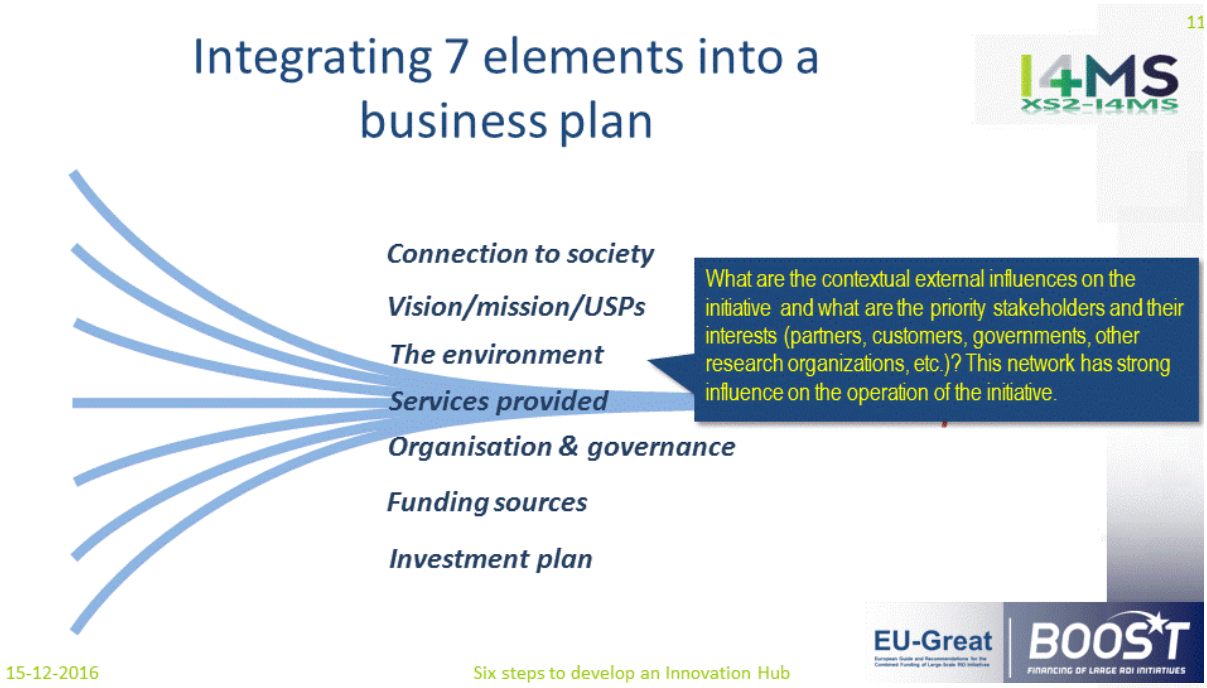
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governance
Funding sources
Investment plan
What are the contextual external influences on the initiative and what are the priority stakeholders and their interests (partners, customers, governments, other research organizations, etc.)? This network has strong influence on the operation of the initiative.
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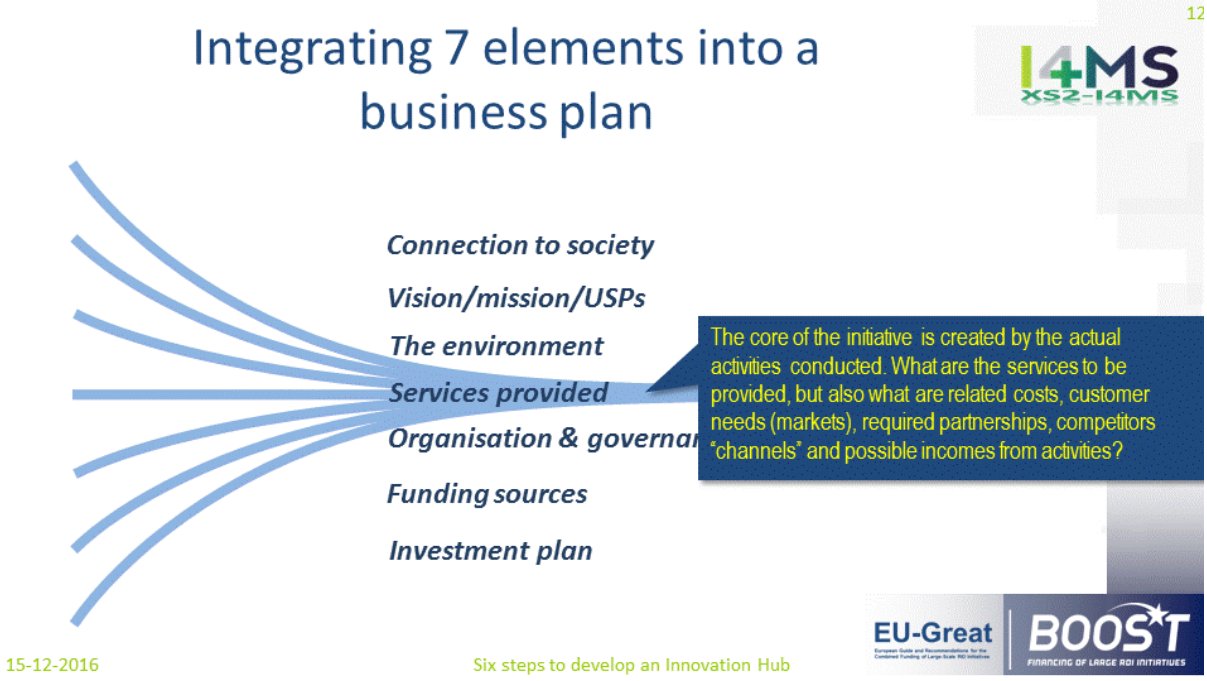
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governar
Funding sources
Investment plan
The core of the initiative is created by the actual activities conducted. What are the services to be provided, but also what are related costs, customer needs (markets), required partnerships, competitors "channels" and possible incomes from activities?
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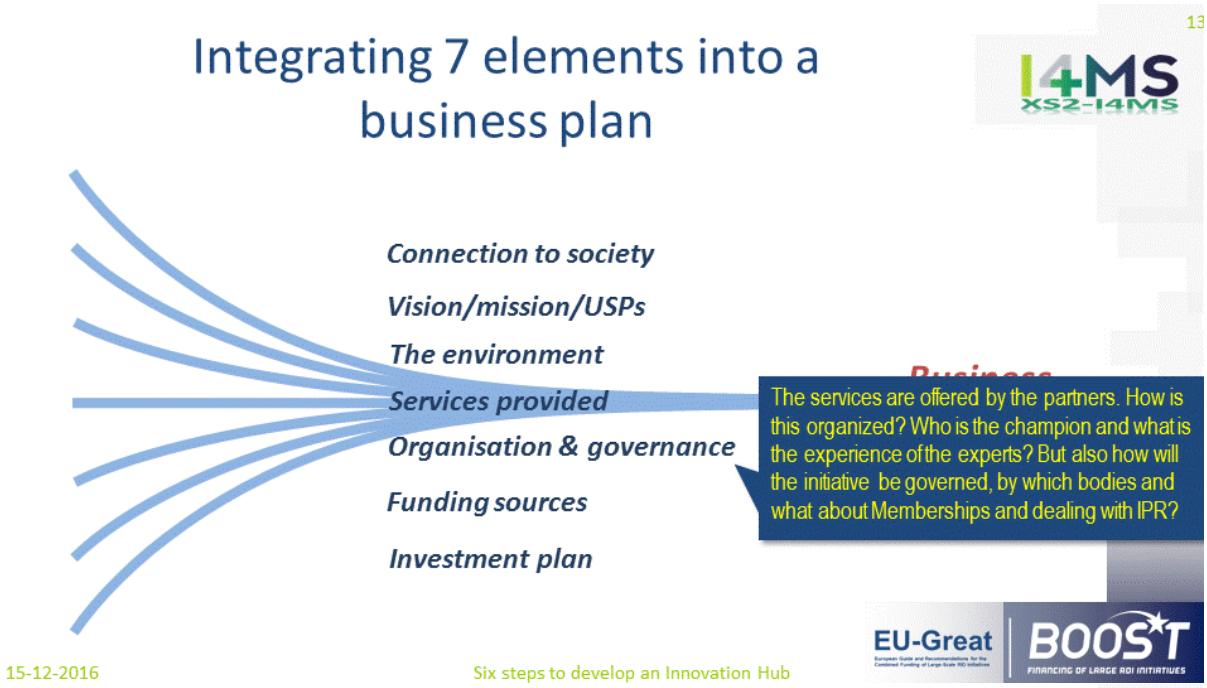
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governance
Funding sources
Investment plan
The services are offered by the partners. How is this organized? Who is the champion and what is the experience of the experts? But also how will the initiative be governed, by which bodies and what about Memberships and dealing with IPR?
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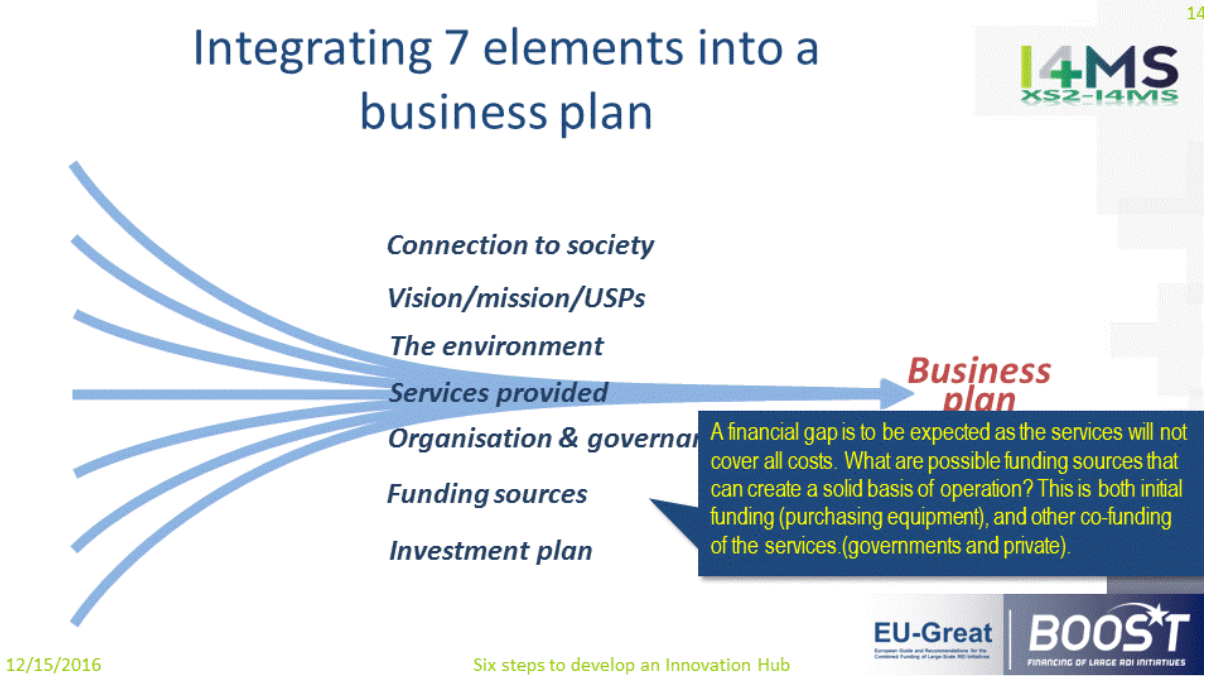
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governar
Funding sources
Investment plan
Business plan
A financial gap is to be expected as the services will not cover all costs. What are possible funding sources that can create a solid basis of operation? This is both initial funding (purchasing equipment), and other co-funding of the services (governments and private).
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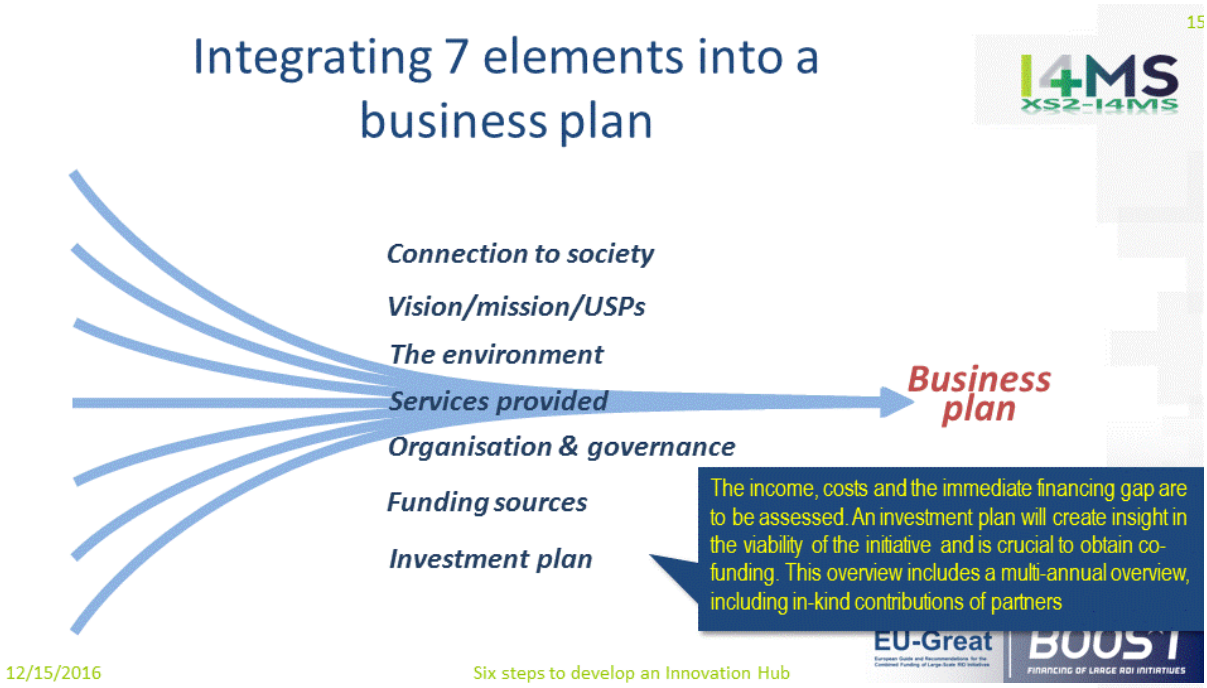
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governance
Funding sources
Investment plan
Business plan
The income, costs and the immediate financing gap are to be assessed. An investment plan will create insight in the viability of the initiative and is crucial to obtain co-funding. This overview includes a multi-annual overview, including in-kind contributions of partners
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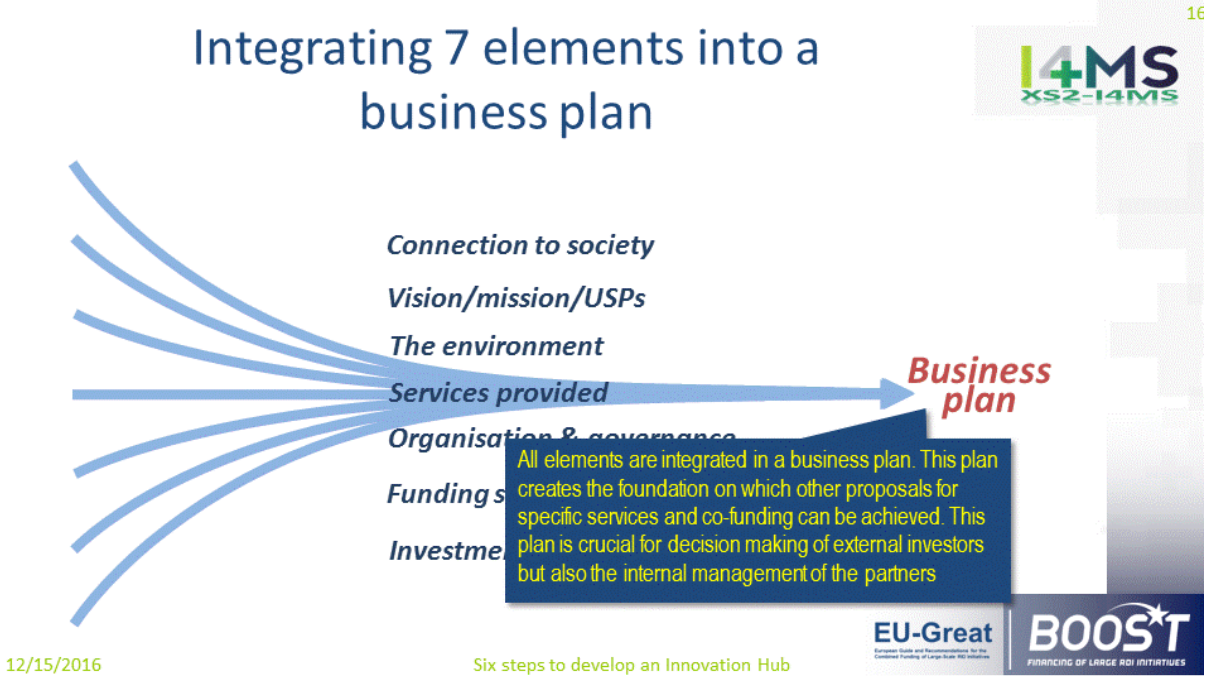
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Integrating 7 elements into a business plan
I4MS
XS2-I4MS
Connection to society
Vision/mission/USPs
The environment
Services provided
Organisation & governance
Funding s
Investme
Business plan
All elements are integrated in a business plan. This plan creates the foundation on which other proposals for specific services and co-funding can be achieved. This plan is crucial for decision making of external investors but also the internal management of the partners
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Content overview of a business plan

1. Executive summary
2. Introduction to the hub
3. Key benefits of the hub
4. The technology concept
5. Services provided
6. Governance and organization
7. Financial plan
8. Next steps
9. Letters of intend, expressions of interest

18-4-2016 XS2I4MS Kick-off meeting poineering stage

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Executive summary

Objective: **First version, a concept note; after preparation phase informing laymen**

Audience: ***S*****takeholders on management level; after preparation phase higher management.**

- **Contextual** description (ecosystem)
- Short description of the **vision/mission**. Link to the **USPs**.
- Main technology/innovation **orientation**.
- The societal **business case** and industrial business cases.
- The core **services**, value proposition, markets.
- The core **partners** and overall consortium, including main stakeholders
- Potential key **resources**: human, technical, installations, partnerships, etc.
- **Location** and its relevance to the initiative.
- Global overview of the **investment** plan, financial constructions and risks.
- Overview of **next steps**
- Stating different **options**, including pro's and con's

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Executive summary

Objective: **First version, a concept note; after preparation phase informing laymen**
Audience: **Stakeholders on management level; after preparation phase higher management.**

- **Contextual d**
- Short descrip
  Link to the **US**
- Main technolo
- The societal **b**
  business case
- The core **serv**
  markets.
- Stating different **options**, including pro's and con's

2-5 pager
stand alone
Pictures, tables
highly readable

verall consortium,
ers
human, technical,
s, etc.
ce to the initiative.
vestment plan,
nd risks.

- Overview of **next steps**

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Introduction to the hub

Objective: **Give a clear, concise and appealing overview why the hub is needed.**
Audience: **Decision makers on middle management level**

- An overview of the ecosystem
- Core partners of the initiative and their added value
- Core mission and main USPs in more detail
- What challenges is the hub addressing, today and tomorrow
- Relevant policy connections (regional, national, European)
- Elaborated vision and mission

Introduction to the business plan
- *Short historical introduction*
- *Contextual overview*
- *Reader and intro to the business plan*

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Introduction to the hub

Objective: **Give a clear, concise and appealing overview why the hub is needed.**
Audience: **Decision makers on middle management level**

- An overview
- Core partners
  added value
- Core mission
- What challeng
  today and ton
- Relevant polic
  national, European)
- Elaborated vision and mission

This chapter will create the interest and sense of urgency for stakeholders to be involved:
- *Added value to what they have*
- *Connection to their problems*

he business plan
al introduction
verview
ntro to the business plan

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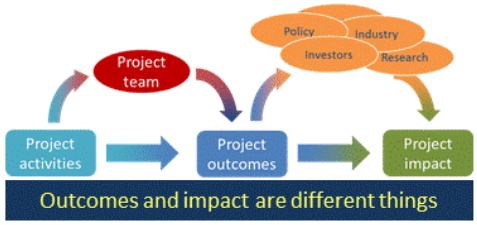
Key benefits

Objective: **Get more detailed information on which decision makers will say "yes, I am interested"**
Audience: **Stakeholders on management level**

- Introduction to the benefits (overview)
- Discussion of the benefits for specific stakeholder groups (outcomes)
- Concrete examples of the specific benefits in textboxes
- Conclusions on impact
  - *Overall*
  - *Concrete information with regard to specific challenges*



Example of how the key benefit is made operational in a concrete case
- *Introduction and demarcation*
- *Argumented and calculation backed statement on the key beneft*
- *Conclusion on the specific case*

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Key benefits

Objective: **Get more detailed information on which decision makers will say "yes, I am interested"**

Audience: **Stakeholders on management level**

- Introduction t
- Discussion of stakeholder g
- Concrete exa in textboxes
- Conclusions
  - *Overall*
  - *Concrete information with regard to specific challenges*

Be convincing in your examples and benefit assessment!

But also take a bit of a leap with impacts!

erent things

benefit is made
case
emarcation
alculation backed
ey beneft
- *Conclusion on the specific case*

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The technology/innovation concept

Objective: **Make the detailed connection between the (future) innovation and the business**

Audience: **After a short introduction to management, stakeholders on expert level**

- The overall technology/innovation view
- The different programmatic lines of technological development:
  - *Roadmap*
  - *Key research/innovation challenges*
  - *IP position of the partners*
- Sharing is crucial
  - *Added value of sharing infrastructure*
  - *Added value of sharing expertise*
- Remarks:
  - *Often research/development/innovation is crucial as USP*
  - *Also look at non-technological issues*
  - *Show today and tomorrow's added value*

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The technology/innovation concept

Objective: **Make the detailed connection between the (future) innovation and the business**
Audience: **After a short introduction to management, stakeholders on expert level**

- The overall te
- The different
  - *Roadmap*
  - *Key resea*
  - *IP positio*
- Sharing is cru
  - *Added value of sharing infrastructure*
  - *Added value of sharing expertise*

pment/innovation is

ological issues

row's added value

This is crucial to align partner technological and HR capacities

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The services provided

Objective: **Explanation how the hub can earn money with its activities**
Audience: **Decision makers on middle management, business developers and the experts**

- Introduction: The overall business case of the hub:
  - *History of the hub*
  - *Introduction to the services <=> USPs*
  - *Introduction to the markets, their needs and domestic advantages*
  - *Overall key partnerships*
  - *Introduction to competitors*
- SWOT, industry structural analysis
- Short assessment of the ecosystem
- In depth discussion on the individual services:
  - *The offering (what, its costs and its revenues)*
  - *USPs, key technologies and expertise*
  - *Demand, market potential & segmentation*
  - *Key partners and their contributions*
  - *How to access the market*
  - *Key outcomes of the hub*
- Sharing infra and expertise
- A concluding overview and risk assessment

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The services provided

Objective: **Explanation how the hub can earn money with its activities**

Audience: **Decision makers on middle management, business developers and the experts**

- Introduction: T
  the hub:
  - *History of*
  - *Introducti*
  - *Introducti*
    domestic
  - *Overall ke*
  - *Introduction to competitors*
- SWOT, industry structural analysis
- Short assessment of the ecosystem

This is what the hub is going to do.
Combine services!!!

Contract R&D *Innovation development*
Testing *Validation* *Business support*
Community building *Supporting start-ups,*
Training/education *Small series production*

e individual services:
costs and its revenues)
es and expertise
ntial & segmentation
contributions
rket
ub

- Sharing infra and expertise
- A concluding overview and risk assessment

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Governance and organization

Objective: **Show who is going to do what. Partners: create cooperation. Financers: Create trust**

Audience: **Partners (higher management), financers**

- Overall overview of the organization
- Introduction to the team:
  - *The Champion*
  - *Management*
  - *The team members*
  - *Partnering with external experts*
- Organization of the programmatic RDI
- Memberships: Tier1/2/3
  - *Fee, timeframe, influence, IPR, participation*
- Governance:
  - *Overall structure*
  - *Steering board members and responsibilities*
  - *Board of directors, advisory board*
  - *Industry, research, government influence*
- Location and its impact
- How to deal with IPR
- Organizing the community
- Legal status

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Governance and organization

Objective: **Show who is going to do what. Partners: create cooperation. Financers: Create trust**

Audience: **Partners (higher management), financers**

- Overall overvi
- Introduction t
  - *The Chan*
  - *Managem*
  - *The team*
  - *Partnering*
- Organization
- Memberships: Tier1/2/3
  - *Fee, timeframe, influence, IPR, participation*

Governance and organisation has direct impact on the financial plan!
IPR, location, memberships, in-kind contributions

rs and responsibilities

vernment influence

- How to deal with IPR
- Organizing the community

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The investment plan

Objective: **Convince potential investors/financers to support the initiative**

Audience: **Decision makers on middle and higher management level (investors/financers)**

- Overall overview of costs, revenues, the gap
  - *Assumptions*
  - *Use the template!*
  - *Some elaboration on the elements*
- The investment strategy
  - *Description of investors, (requests /interests)*
  - *Strategy for further investments*
- Public funding
  - *Description of the market failures*
  - *National, regional, EU opportunities*
- Membership scheme:
  - *Memberships: Tier1/2/3*
  - *Fee, timeframe, influence, IPR, participation*
- Private investors
  - *Possible approaches to involve them*
  - *Opportunities*
- Risk assessment
  - *Dealing with risks (mitigation)*

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The investment plan

Objective: **Convince potential investors/financers to support the initiative**

Audience: **Decision makers on middle and higher management level (investors/financers)**

- Overall overvi
  - *Assumptio*
  - *Use the te*
  - *Some ela*
- The investme
  - *Descriptio*
  - *Strategy f*
- Public funding
  - *Description of the market failures*
  - *National, regional, EU opportunities*

Income:	***Costs:***
RDI projects (contract/public)	Preparation business plan
Memberships	Infrastructure
Consultancy and services	Resources
Other, like IPR, conferences	R&D personnel
In-kind contribution partners	Staff (management/business)
Sponsorships	Training

articipation

em

- *Dealing with risks (mitigation)*

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The template

	A	B	C	D	E	F	G	H
1		**Financial plan**						
2		***Income***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***
3		***R&D&I projects***						
4		Public cofunded RDI projects						
5		Fundamental research projects						
6		Contract RDI activities						
7		Initial series production						
8		Other, namely						
9		***Subtotal R&D&I projects***	***€ 0***	***€ 0***	***€ 0***	***€ 0***	***€ 0***	***€ 0***
10		***Memberships***						
11		Memberships-1st tier (200kE pm)						
12		Memberships-2nd tier (5kE pM)						
13		Other, namely						
14		***Subtotal Membership and sponsering***	***€ 0***	***€ 0***	***€ 0***	***€ 0***	***€ 0***	***€ 0***
15		***Consultancy and services***						
16		Workshops						
17		Training and education						
18		Studies (market impact, economical assessments, etc)						
19		Scouting and market intelligence						
20		Incubator services						
21		Other consultancy, namely ...						
22		***Subtotal consultancy and services***	***€ 0***	***€ 0***	***€ 0***	***€ 0***	***€ 0***	***€ 0***
23		***Other***						
24		IP(R) - revenues						
25		Participations (e.g. in spin-offs, etc.)						
26		Conference fees						
27		Renting out infrastructure						

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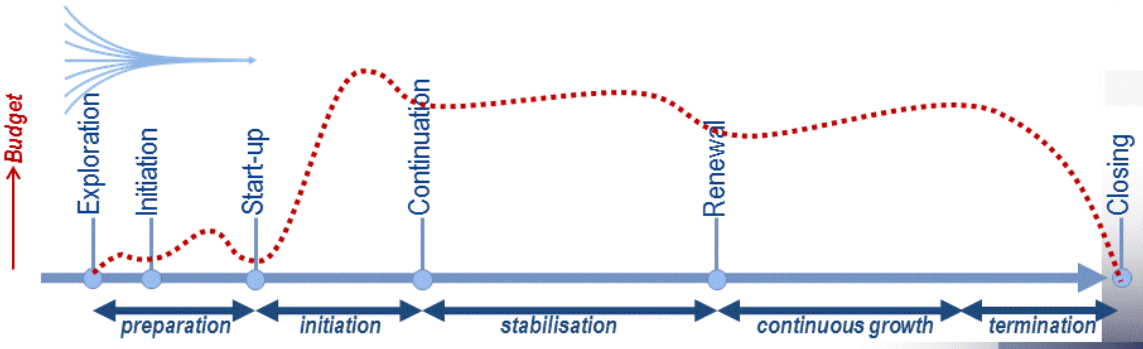
Next steps: Remember, developing a hub is an evolution



15-12-2016 Six steps to develop an Innovation Hub

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Next steps

Objective: Initiate the next phase of the initiative, after the preparation phase, with concrete steps

Audience: Decision maker (show the future), operational personnel (plan actions)

- Conclusions from the previous chapters
  - *Overall status of the initiative*
  - *Conclusions on content focus, partnerships to be developed, the financing of the hub*
  - *Several strategic options for the further development with pros/cons*
- Risks and mitigation
- Further steps in financing
  - *Who to involve*
  - *What funding opportunities to chase*
- Marketing and communication plan
  - *What are the activities to further get the*
- Sales plan
  - *Actions for business development (what, who, when, how)*
- How to initiate the initiative (project plan)
  - *Operational issues in the coming 6 moths*
  - *Who is going to do what when and how*

15-12-2016 Six steps to develop an Innovation Hub

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Next steps

Objective: Initiate the next phase of the initiative, after the preparation phase, with concrete steps
Audience: Decision maker (show the future), operational personnel (plan actions)

- Conclusions f… …cation plan
  - *Overall st… …to further get the*
  - *Conclusio… to be deve…*
  - *Several s… …evelopment (what, who, develop…*
- Risks and m… …e (project plan)
- Further steps in financing …he coming 6 moths
  - *Who to involve*
  - *What funding opportunities to chase*
  - *Who is going to do what when and how*

Show that you are thinking about the next steps and committed to it!

This will create the momentum to initiate the start-up

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Annexes

***Objective:* Show the reader that the business plan is supported**
Audience: Decision makers, both internally and external

- Supporting letters from important stakeholders
- Overview (CVs) of the most critical personnel

3. Business Plan outline

ICT Innovation for manufacturing SMEs
EU-Great

I4MS Mentoring programme

Business plan

This report is a cooperation between the EU-Great and the XS2I4MS project. Both are co-funded by the European Commission under the H2020 programme. The EU-Great project (NMP 37-2014 CSA) and aims at the assessment of the (combined) funding of so-called Large Scale RDI initiatives (LSI). The XS2I4MS (NMP-FoF9 2015 CSA) aims at supporting support consortia to assess the feasibility of so-called Digital Innovation Hubs (DIH) in their region.

Combining EU-Great and XS2I4MS activities was considered important, as both projects focused on the assessment of new entities that can help research and innovation to cross the valley of death by sharing infrastructure and expertise. For these entities the EU-Great uses the concept of LSIs and within I4MS (DIHs), but show strong overlap in objectives and approach.

This report uses the insights in the development of a business plan that was gained during four case studies conducted during the EU-Great project, in which studies business/investments plans were developed for actual LSIs. These insights were transformed into this template using the needs expressed by the consortia to assess the DIH feasibility (XS2I4MS), as one of the deliverables is a business plan. Combining the insights enabled a more in-depth assessment and creating user oriented materials that can be applied by the target audience of both projects.

Date:	15 December 2016
Authors:	Maurits Butter, Govert Gijsbers, Marcel de Heide, Martijn de Graaff
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Dissemination	
Contract	

This project has been
co-funded by the European Union

Table of Contents

Executive summary

The objective of this summary is a short description that can be distributed as an appetizer to create interest with stakeholders to discuss the business plan.

The following elements should be discussed:

- Short description of the vision, mission and ambition. Linked to the USPs.
- Main technology and innovation orientation.
- The societal business case and industrial business cases.
- The core business model and its underlying value proposition, markets.
- The core partners and overall consortium, including involved main stakeholders
- Potential key resources: human, technical, installations, partnerships, etc.
- Location and its relevance to the initiative.
- Finance, including global overview of the investment plan (costs, income, gap), financial constructions and key risks.
- Overview of next steps: how the development is foreseen, including options for development.

Introduction to the DIH

[Core mission and main USP of the DIH]

The objective of this section is to introduce the reader to the business plan, but also to the initiative. The section needs to inform the reader about the context, its mission and why the initiative is so important. It needs to create a sense of urgency that the reader is convinced that the initiative has added value.

Introduction to the business plan

- *Short historical introduction*
- *Contextual overview*
- *Reader and intro to the business plan*

The following elements should be described:

- Contextual introduction of the concept of the initiative, including its mission.
- Societal/economic implications and grand challenges that are underlying to the vision/mission
- Contextual issues that the LSI addresses and background information about these issues
  - ⇨ Facts and figures, e.g. concerning the societal issues
  - ⇨ Problem assessment and theory: What does the LSI address
  - ⇨ Methodologies (e.g., role of science and innovation, towards triple helix, valorisation/diffusion)
- Challenges the LSI addresses and conceptually the way it addresses it, regional, national, European
- Conclusions for the LSI and its demarcations
- Motivation for this business plan, also with regard to the partners.
- Status of the business plan.
- Reader for the business plan

Addressing challenges of today and tomorrow

This section globally assesses the challenges relevant to our society, both today and in the future. It is an introduction that provides the reader further structure in what the core societal issues that the initiative addresses. These topics will be addressed in chapter 2.

Relevant resent policies linking to the DIH

This section will describe the linkages with public policy, as this often is an important funding source. But also again the linkage is made to societal challenges.

Regional

The operational scope of the initiative is often region and in this section the linkages to the specific regional policies is to be made.

The following elements need to be described:

- Demarcation of the region(s) and stating the most important regions.
- Short introduction on the relevant policies of the region(s) and the linkages to the challenges described earlier.
- What could be expected from the region with regard to support (funding, but also connection to other available other initiatives).

National

The operational scope of the initiative is often also supported by National governments and in this section the linkages to the specific national policies is to be made.

The following elements need to be described:

- Short introduction on the relevant national policies and the linkages to the challenges described earlier.
- What could be expected from the national government with regard to support (funding, but also connection to other available other initiatives).

European

The initiative can also be linked to European policy and in this section the linkages to the specific European policies is to be made.

The following elements need to be described:

- Short introduction on the relevant European policies and the linkages to the challenges described earlier.
- What could be expected from the European Commission with regard to support (funding).
- Overview of available European initiatives that are relevant.

Our vision on the future and mission of the initiative

This section draws the conclusions of the previous sections and comes to a short description of the vision and mission of the initiative. The objective of this section is to create a communicable short statement on the initiative on what added value it would have and why it is important.

This section includes two elements:

- Vision on the initiative: An aspirational description of what the initiative would like to achieve or accomplish in the mid-term or long-term future. It is intended to serves as a clear guide for choosing current and future courses of action. It includes the main added value of the initiative with regard to the contextual environment.
- Mission: A declaration of the core purpose and focus that normally remains unchanged over time. Properly crafted mission statements (1) serve as filters to separate what is important from what is not, (2) clearly state which markets will be served and how, and (3) communicate a sense of intended direction to the entire organization.

A mission is different from a vision in that the former is the cause and the latter is the effect; a mission is something to be accomplished whereas a vision is something to be pursued for that accomplishment.

Key benefits of the initiative

This chapter should give a clear overview of the added value of the initiative, starting from the vision/mission the previous chapter provided. The objective is to convince the interested reader that the initiative should be pursued. It is important that the key benefits are highly linked to the context of specific readers/investors/target audiences. This allows quick skipping of the reading it the specific benefit is not interesting.

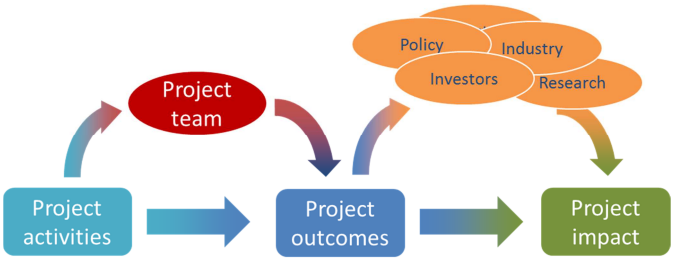


Figure: Impact, a result of the project outcomes.

A distinction can be made between the actual direct project outcomes that can be expected from the initiative (section 2.1) and its impact to the economy/society (project impact) (section 2.4). The difference between these two is that the initiative aims at changing the community (impact), but this depends highly on other stakeholders the initiative has limited influence on. The actual project outcomes are within the scope of influence of the consortium.

Within this chapter these two elements are to be connected: Show the actual benefit of the core innovation on a concrete level, connect it to the broader impact at society level and then connect it to the priority challenges of specific potential investors/funding bodies. In this way, they can be convinced about the importance.

Overall introduction to the benefits

The objective of this section is to create an overall logical framework on the key benefits of the initiative. This would help the reader to have a clear view on the different elements of its added value.

The following elements are to be described:

- Introduce the section with a summarizing the vision/mission statement.
- Providing a more holistic view on the benefits and its argumentation on the underlying specific benefits.
- Translation to the key benefits and summarizing them. This introduces the following sections.

Benefit ##

This section described in more detail a specific key benefit. This description should be described in a way that a potential reader (investor!) can relate this to his/her specific situation and interests.

The following elements are to be described:

- Introduction to the benefit, making the connection of the service provided and the societal/industrial challenge.
- Argumentation of this connection, including linkages to the policy and other supporting strategies.
- Further scale up, based on the example.
- The conclusion for the benefit.

Example of how the key benefit is made operational in a concrete case

- *Introduction and demarcation*
- *Argumented and calculation backed statement on the key beneft*
- *Conclusion on the specific case*

Benefit ##

Conclusion: the initiative has high impact

This section summarized the described benefits and offers the different target audiences an overview of the key benefits relevant to them. It also makes the connection to the earlier described (society/industry)challenges and policies.

Where in the previous sections the actual results are to be discussed, in this section the overall impact is focal.

[Support to solve grand challenges, like energy, ageing, environment, health, etc.]

This section will first start with a (societal challenge) and connect it to the objectives of the initiative. It will allow the reader to identify the main challenges from the title and then link it to the initiative. The section should be concise, but also describe the policy objective, the impact (as concrete as possible), its crucial contribution and its dependencies.

It is crucial that the sections are related to the specific strategic priorities of potential investors/funding bodies.

[Support to competitiveness]

[Valley of death]

[Jobs creation]

……

The technology concept

[The objective of this chapter is to make the connection between the (science & technology) innovation concept and the business. But also to make clear that sharing expertise, infrastructure and joining activities have added value. In the end, the chapter should create the basis for a research and innovation programme.

This chapter needs to start with the overall technological/innovation concept of the initiative, to show the reader more insight in the key technological/innovation concept. It will provide a reader with the outlines/introduction. From this key concept, a limited number of strategic programmatic research lines are to be identified, where technology and business are integrated. The sections on the programme lines will create a more in depth view on the innovation concept and business case towards application.

After the more detailed description of the programme lines, a section will describe the patent position on these technologies. The objective of this section is to show that there is a critical mass, but still some are missing and to be developed. Also the main global researchers will be described and their key expertise. This section will end with a conclusion on the main focal areas to further develop technologies.

The last, more concluding section will in detail describe the key benefits of combining resources (equipment, expertise, networks, etc.). This section must conclude that the initiative is more than a project portfolio and alignment of activities and sharing expertise/equipment is crucial to the overall business case of the initiative.

The readers that is to be addressed are both decision makers, more laymen on the innovation (section 3.1), as well as more experts that want to know what it is all about (other sections).

- Although the ***laymen*** will be less interested in the programme lines, describing business cases for each line must convince them about the added value of the technological concept. The IP position must show that there is still a lot to win, but also that the partners have a critical mass and excellent position towards other competitors. The crucial part is the last section in which a compelling argument must be made to join forces and align efforts/investments.
- For ***experts***, more detailed information is needed to show what the innovation is about. These experts are likely to inform the more laymen decision makers on the innovation. They also need to be convincingly informed about the science & innovation challenges and mid/long term developments, as well as the business opportunities. They need more detailed information about the underlying technologies/innovation, research, hands on business cases possible, IP and future developments.

The overall view

This sections describes the overall systematic view of the technologies for the more layman reader. It describes the overall technology and business case conceptually and the programme lines that emerge from them. Important is that the section shows a programmatic character, creating from a core concept the programme lines. This section also includes the business case of the technology on a conceptual level, without any detailed descriptions (to be discussed in the other sections of this chapter).

Programme line #

Overall objectives and strategic description

- A more general description of the overall programme line core technical concept and its contribution towards the overall core technology.
- Identification of the main building blocks and a more general description.
- Description of present situation and future development of the technologies: What's in it in the future
- An assessment of the long term added value to the targeted industry sectors.
- Impact assessment of how much this could be used in the industry, including its development from the present to the future. Present situation without the core technology and new scenarios using the technology:
    - Economic impact: number of new businesses, start-ups, turnover, enhanced competitive advantages, etc.;
    - Environmental impact: Added value to specific environmental challenges, like global warming, local environmental impact, health risks, etc.
    - Societal impact: Jobs growth, welfare, etc.

A specific business case (example) for programme line 1 technologies, making a connection between the technology, the application and future benefits. This example must be an appealing detailed description of a business case, based on the work in the programme:

- *Overall introduction to the business case;*
- *The core technological concept enabling it;*
- *The business added value, business model;*
- *Calculation of costs and revenues, also reflected against the existing situation;*
- *Potential economic, social and environmental impact.*
- *Main (scientific) challenges that are to be addressed to make this happen.*
- *Argumentation to organize its development in a shared facility; added value of the initiative.*

Underlying roadmap

- Description of the main building blocks, including development trajectories and how they are connected.
- Business innovations they contribute to.
- Important barriers to take with regard to societal developments (e.g. legal, political, consumer requirements, etc.).
- Roadmap diagram.
- Important milestones.

Key research and innovation challenges

- Description of the key innovations in the roadmap and their importance.
- The underlying key science and technology challenges.
- Important socio-economic barriers to be addressed.
- Their relation to the overall technological concept and other programme lines, as well as the need for combining research and efforts.
- Key technologies.
- Challenges.

IP position of the partners

The objective of this subsection is to describe the (patent) position of the consortium, also with regard to the present status of the programme line technology. This must make clear what the present that the consortium has added value to the programme line technologies:

- Core expertise and available equipment in the consortium relevant for the programme line, with regard to the needs to bring the technology further.
- An assessment of the IP position of the consortium against the more general IPR is one of the elements.

Programme line #

Overall objectives and strategic description

Underlying roadmap

Key research and innovation challenges

IP position of the partners

A specific business case (example) for programme line X technologies, making a connection between the technology, the application and future benefits. This example must be an appealing detailed description of a business case, based on the work in the programme:

- *Overall introduction to the business case;*
- *The core technological concept enabling it;*
- *The business added value, business model;*
- *Calculation of costs and revenues, also reflected against the existing situation;*
- *Potential economic, social and environmental impact.*
- *Main (scientific) challenges that are to be addressed to make this happen.*
- *Argumentation to organize its development in a shared facility; added value of the initiative.*

Conclusion: Sharing technologies and expertise, increasing critical mass

The added value of sharing infrastructure and expertise

This section argues the added value of having a shared initiative. It draws on the benefits of using both programme lines with core precompetitive developments and connected contract RDI, as well as connects the RDI activities in the other programme lines. Aspects to be discussed in this section are:

- A general description of the equipment to be shared and core benefits of this sharing (relating it to the programme lines).
- A general description of the expertise to be shared and core benefits of this sharing (relating it to the programme lines).
- The added value of bringing equipment and personnel together.
- Overall conclusion about added value of sharing and stating this is the way to go.

Sharing technology infrastructures

- Using the challenges stated in the previous section, translating them to the technology platform that is needed to support the development. This is to be connected to the R&D&I work that is to be done (described in the previous section).
- Description of the different platform elements (so not the electrification technologies, but the platform requirements needed supporting the development of the electrification technologies, e.g. electricity generator, testing facilities, laboratory facilities).
- Argumentation to create shared technology platforms, sharing equipment among the R&D&I projects (and therefore costs and expertise).
- Indication of what is already available at the partners and what is still required.
- Description on how the platform will evolve with regard to the next 5 years, due to the advancement of the R&D&I work.

Combining expertise

- Looking at the RDI challenges, a translation of the expertise needed.
- How has combining expertise in a shared initiative has added value.
- How can training of these experts be organised in a shared way.
- A description of the personnel needed to operate the platform technologies.
- Short introduction of non-technological personnel needed to run the initiative (management, business development, incubator, communication/PR, etc.)

Other

- Shared vision & multi-year roadmap
- Business development collaboration
- Connections with universities (Electrochemical engineering)
- Access cost of Research infrastructure
- Community and consortia development
- Efficient external market & technology knowledge sharing
- Funding (larger scale & collaboration = larger funding opportunities)
- Joint 'lobby' for socio-economic persuasion
- Market information
- Negotiating power
- Shared international branding
- Administration on contacting
- capacity building and stakeholder workshops
- Community databases
- Community
- Efficient program management
- International networks
- Knowledge dissemination
- Lobbying to European Commission
- PR materials
- Shared overall objective

Other infrastructures

- Available personnel with needed expertise.
- Shared bench- & large-scale demonstration location (Rotterdam/Groningen)
- Access to European centres of excellence.
- Market data
- Website
- Housing
- Materials and instrumentation data base

Services provided by the initiative

This chapter focuses on the description of the earning model, business case, of the initiative (so not on the business case of the its customers). The chapter must give a clear picture on the services that can be provided by the initiative and the overall business model connected. The objective of the chapter is to convince financers that the initiative has industrial and societal value (market) and also inform them about the activities to be conducted (including underlying business models).

The overall business case of the initiative

This section will provide an first more general view on the way the initiative will create added value and generate revenues. It will introduce the various elements of the underlying business model in general and identify the services provided. The objective of the section is to offer information that provides a clear view to decision makers on the overall business concept of the initiative.

In this section the following elements are to be described:

- An overall historical introduction to the initiative:
  - ⇨ How is the product developed (historically)
  - ⇨ How will it further be developed
- Introduction to the services provided
- Introduction to the USPs regarding these services.
- How does the consortium look like and why the partners.
- Key partnerships that contribute to the USPs.
- Domestic market advantages.
- Introduction to the overall possible markets and market needs.
- How does the initiative differ from some other initiatives, including a general introduction in some other related initiatives.
- The conclusions on USPs of the organisation in relation to important competitors.

Service 1:Shared research programming through public co-funded RDI

The offering (value proposition)

- Description of the service and its added value to the customer, including also an assessment why it is important to be part of the initiative service portfolio (why sharing).
- What are the costs of the product/service:
  - ⇨ cost structure
  - ⇨ further development over the next 5 years).
- Revenue streams: How can this service be financed, what are customers willing to pay? Licencing, subscriptions, brokerage fees, etc.
- Estimation of the market, including segmentation and customer relations

USPs, key technologies and expertise

- Description of the technological capital (what is key, unique equipment).
- Description of the human capital (what is key, unique expertise and skills).
- Description of the competitors (their USPs, related products/services, price, quality, market)

Market assessment (evaluate the internal and external environment)

- Description of the market/customer needs, including future development and important factors influencing its development and financial figures and market segments
- Place of the LSI in the regional, national and global innovation system
- SWOT of the market

- Alignment with RDI public policy and priorities. What are potential programs from regional, national and EU government?
- The landscape of the LSI related product/services: Important possible competitors, short-term, mid-term and long-term.
- Short description of relevant competitors, including some primary characteristics (technology focus, platforms, expertise, services, size, turnover)

Key partners to the service

Description of the consortium partners and relation to the network partners. This description is used to clearly describe the direct partners involved (taking risks) and the indirect partners that are important to the creation of the product and core to the USP of the LSI.

The following aspects are to be described (per partner, or with related other initiatives):

- An overall description of the partner (mission, products/services, type, size, history, etc.).
- The USPs of the organisation with regard to the LSI.
- Why the interest of participation and what do they want to come out of the participation.
- Their place in the organisational structure.
- Contribution to the LSI (technical, skills, financial, in-kind HR, or otherwise).
- Requirements for participation as partner (boundary conditions).
- Cooperation with other relevant initiatives:
  - ⇨ Who, how, when, what, on which terms

Ways to get the service to the market

The initiative can deliver its service to its targeted customers through different channels. Effective channels will distribute the service in ways that are fast, efficient and cost effective. The initiative can reach its clients either through its own channels (store front), partner channels (major distributors), or a combination of both.

Key outcomes of the initiative

- Return on investments:
  - ⇨ Social economic impact (jobs created)
  - ⇨ Environmental impact (with KPIs)
  - ⇨ Economic value (with KPIs)

Service #: Contract research, testing and validation

The offering (value proposition)

USPs, key technologies and expertise

Market assessment (evaluate the internal and external environment)

Key partners to the service

Ways to get the service to the market

Key outcomes of the initiative

Service #: Training and education

The offering (value proposition)

USPs, key technologies and expertise

Market assessment (evaluate the internal and external environment)

Key partners to the service

Ways to get the service to the market

Key outcomes of the initiative

Service #: Community building activities

The offering (value proposition)

USPs, key technologies and expertise

Market assessment (evaluate the internal and external environment)

Key partners to the service

Ways to get the service to the market

Key outcomes of the initiative

Service #: Supporting new businesses and start-ups

The offering (value proposition)

USPs, key technologies and expertise

Market assessment (evaluate the internal and external environment)

Key partners to the service

Key outcomes of the initiative

Service ###

Opportunities and risks

This section is to inform especially private investors about potential risks of the initiative.

Conclusions on SWOT of the business

Governance and organisation

This chapter is about the organisation of the project, including its governance. It makes clear what the most important partners are, but also its connection to other stakeholders. The objective of this chapter is to convince the investors/funding bodies that the initiative has strong capacities and can rely on committed partners.

The chapter also needs to describe the way the contacts are ensured with the industry and other stakeholders. As location has a crucial impact on the partners and other stakeholders' participation, this is also included in the chapter.

Overall organisation

This section provides an overall introduction to the organisation of the initiative and allows a quick understanding. It will also introduce the partners on an organisational level. The section will include an organogram, including all direct organisational elements and governance structure.

The team

The champion

The description of the high profile overall CEO, including his/her merits. This section must convince the investors/funding bodies that the initiative is in good hands.

Management

The full day to day management is to be described, with their responsibilities and method of operation. Also this section includes the short CV of the persons involved and why they can do the job.

Initiative experts

A concise overview of all the experts working for the initiative. This will include their names, expertise, working history (short) and responsibility in the initiative. Also a description will be given about how their institutional position will be made operational. The overview also will include further conceptual information about e.g. cooperation with industry and research (secondment), functions that are subcontracted etc.

Organising the research and innovation programme

As the research and innovation programme is crucial to the added value of the initiative, the organisation is crucial. This section should include a description of the way the programmatic research and innovation is organized, including advisory, strategic programming, etc.

Crucial other partners

The initiative will have direct partners participating formally in the initiative, but also many other partners that are more informal connected. Many of them are crucial to make the initiative successful. In this section these are discussed:

- Who are the other network partners and why are they crucial, what added value do they have?
- How can they participate in the work of the initiate?
- What are the interests of them to participate?
- In what way did they confirm commitment to the initiative and will participate?

Memberships

The participation of industry is often organized through a TIER approach, including several Tiers with different types of participation and funding. These memberships are crucial to convince investors/funding bodies to support the initiative.

A common approach to the membership is the following (can be different):

- TIER1: Long term membership, with significant costs and influence on the strategic programming. Contribution will be used for programmatic research;
- TIER2: Short term membership, with reduced cost and limited influence on programming. More or less guaranteed contract research.
- TIER3: Community participation.

Tier 1

This describes the different aspects of the Tier 1 organisation, including:

- Costs and timeframe;
- Influence on the programming
- IPR organisation
- Organisation of their participation
- Strategy to attract new members
- Members already committed
- Expectations of members on short, medium and long term

Tier 2

Tier 3

Governance

With regard to governance, there are different elements that create a regulation and accountability structure for the initiatives. Different approaches can be followed and are to be described. This will also have impact on the potential funding of the initiative.

Overall governance structure

What are the checks and balances for the initiative?

Steering board, Board of directors

- What are the responsibilities
- Who will be member

Advisory board

….

Location

The location of an initiative is a crucial element that has high impact on the organisation and governance. Different models can be used: Single location versus satellite model:

- What approach is used and why?
- What approach is used and why?
- What are consequences and how are they contributing to the success of the initiative
- What are negative consequences and how are they addressed?

Organisation of Intellectual property

In what way is IPR organised:

- What IPR model is used?
- How is IPR processed?
- With regard to the partners and members, how is it organized?
- How is licencing organised?
- What kind of revenues are anticipated?

PR and communication plan

This section will describe the PR and communication activities:

- A detailed description of the activities that are planned;
- The objectives of these activities and its concrete deliverables;
- The partners involved, including their involvement, as well as additional organisations that are to be involved;
- The planning of the activities;
- The costs of the activities and its financing;
- Risk assessment and mitigation factors, as well as critical success factors.

Financial plan and investment strategy

Financial plan

Overview of income, costs and investments

[Use the template]

Detailed description of the separate elements

- Argumentation on the separate elements, also looking at the coming years

Investment strategy

Discussion on investors

- Who is participating, why and in what way.

Strategy for further development

Creating a long term sustainable approach on financing is crucial. How is this organised?

Public financing opportunities: Connection to present policies

Market failures: Rationale for public support

Make the argument for public authorities to invest. This is based on state aid rules and the rationale for governments.

European opportunities

- The H2020 programme
- EFSI
- The European
- European

National opportunities

- University funding
- RTO funding
- Industrial innovation instruments

Regional opportunities

- ERDF
- EFSI
- Regional development agencies
- Regional development funding opportunities

Private investments

Possible approaches to involve private investors

Risk assessment

Dealing with risks

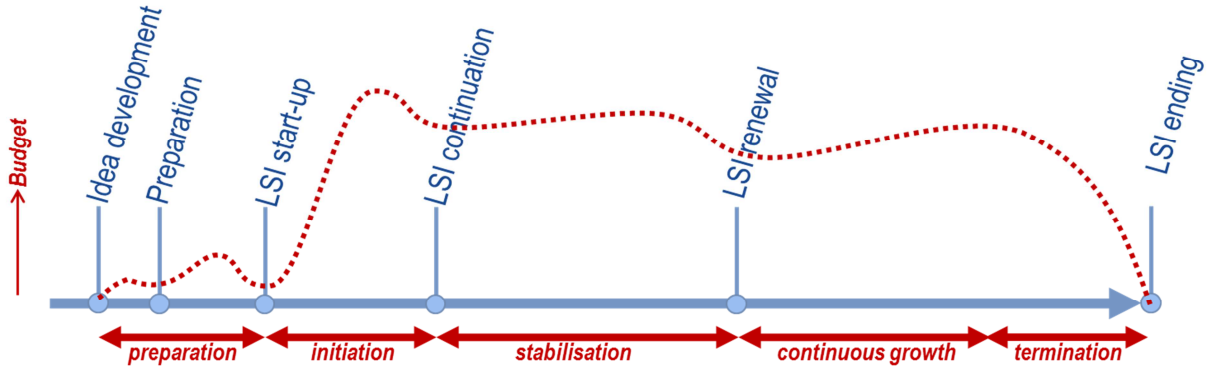
Opportunities for private investments

Next steps approach

In this section, the activities are described that are making the business plan operational. A business plan is usual a document that sets a mid-term view on the overall business development of the initiative. It can be seen as an underlying view on business that provides a framework within other more dedicated project plans can be aligned.
With regard to EU Great, a business plan can be used for different types of initiatives:

- Initiatives that are in the initiation phase of their life;
- Initiatives that are renewing their finance and readjusting their scope and business.

For Initiatives that are in their stabilization, continuous growth, or termination phase, business plans are less important, as well as the strategy/planning. The business is adjusted with additional projects that will be connected to the basic business plan, just tweaking it.



In this section, the different activities to be conducted for the next stage of the development of the Initiatives is to be described. For Initiatives ***that are in the initiation phase*** the activities will be focused to take the Initiatives from a paper document to an actual Initiatives (what is planned). Although the business plan is the document to discuss with potential investors, still this section will provide an overview of the activities of the next period. A description needs to be included also describing the other phases.

The activities of the second type Initiatives (renewing phase) will be more focused on tweaking and adjusting the existing business, potentially looking for new business models, but especially new funding mechanisms. The activities will include the steps to further develop the business models and secure additional funding.

In this section, the following elements are described:

- A detailed description of the activities that are planned;
- The objectives of these activities and its concrete deliverables;
- The partners involved, including their involvement, as well as additional organisations that are to be involved;
- The planning of the activities;
- The costs of the activities and its financing
- Risk assessment and mitigation factors, as well as critical success factors.

Annex: Other relevant information to support the proposal

- Letters of Intent
- References

Contact information

Overall project management	**Other partners**
: ☎: +✉: *:* ☎: +✉: **Website:**	

4. Canvas Method

Task 4.3 - Elements in the approach towards the development of a business and investment plan - Canvas method

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TABLE OF CONTENTS

Introduction: scope of the document

The Business Model Canvas is a template for developing new (or documenting existing) business models.[2] As such, it constitutes a building block (i.e. an underlying methodology) of the *Approach towards the development of a business and investment plan*.

Core of the visual chart representing the business model Canvas is the (set of) the entity's value proposition(s): product(s) / service(s) with corresponding infrastructure, customers, and finances (see Figure 2). The (total set of) value proposition(s) constitute the overall business model (i.e. how the LSI "is going to earn revenues".[3]

These elements form essential input in the outline of the for the ultimate *Business Plan*. The following sections describe the main elements and the corresponding information to be collected.

Infrastructure

Key Activities - The most important activities in executing the LSI's value proposition. Examples include:

- Research and development activities
- Concept validation and prototyping
- Testing and validation
- Pre-competitive series production
- Commercial use infrastructure
- Support of new product and start-up development
- Education and skills development
- Ecosystem building and networking
- Dissemination and awareness
- Voice of the customer, product consortia
- Market intelligence

Key Resources - The resources that are necessary to create value for the customer / client of the LSI. They are considered an asset to the LSI, needed in order to sustain and support the key activities as described above. These resources could be human, financial, physical and intellectual.

Partner Network - In order to optimize operations and reduce risks of a business model, organizations such as an LSI usually cultivate a certain relationships with what could be considered as suppliers, such that can focus on their core activity as defined above. Complementary alliances also can be considered through joint ventures, strategic alliances, etc with other LSIs or for example other knowledge organisations.

[2] See Osterwalder, A., and Y. Pigneur (2013). Business model generation: a handbook for visionaries, game changers, and challengers. John Wiley & Sons.

[3] The Business Model Canvas can be used as a basis for discussion with stakeholders on the overall business model of the LSI (i.e. how it can create revenues), and the supporting elements The Business Model Canvas can be printed out on a large surface so groups of people can jointly start sketching and discussing business model elements with post-it note notes or board markers. It is a hands-on tool that fosters understanding, discussion, creativity, and analysis.

Offering

Value Propositions - The collection of services (that results from the abovementioned activities) an LSI offers to meet the needs of its customers / clients.[4] The value propositions may refer to quantitative aspects (i.e. price and efficiency), but in the case of an LSI most likely to qualitative aspects (i.e. overall customer experience and outcome).

The total set of value propositions constitute the overall business model of the LSI.

Customers

Customer Segments - To build an effective business model, an LSI must identify which customers / clients it tries to serve. Various sets of customers / clients can be segmented based on the different needs and attributes.

Channels - An LSI can deliver its value proposition to its targeted customers / clients through different channels. Effective channels will distribute a value proposition in ways that are fast, efficient and cost effective. An organization can reach its customers / clients either through its own channels, partner / host channels, or a combination of both.

Customer Relationships - To ensure the survival and success, the LSI must identify the type of relationship they want to create with their customer segments. Various forms of customer relationships include:

- Personal Assistance: Assistance in a form of employee-customer interaction. Such assistance is performed either during service delivery, after delivery, and/or both.
- Dedicated Personal Assistance: The most intimate and hands on personal assistance where a dedicated LSI representative is assigned to handle all the needs and questions of a special set of clients.
- Self Service: The type of relationship that translates from the indirect interaction between the LSI and the clients. The LSI provides the tools needed for the customers to serve themselves easily and effectively.
- Automated Services: A system similar to self-service but more personalized as it has the ability to identify individual clients and their corresponding preferences.
- Communities: Creating a community allows for a direct interaction among different clients and the LSI. The community platform produces a scenario where knowledge can be shared and problems are solved between different clients.
- Co-creation: A personal relationship is created through the customer's direct input in the final outcome of the LSI's services.

Finances

Cost Structure - Refers to the types of costs and subsequent strategy:[5]

- *Classes of Business Structures*:

[4] According to Osterwalder, (2013), a company's value proposition (which is in essence comparable to the one of an LSI) is what distinguishes itself from its competitors. The value proposition provides value through various elements such as newness, performance, customization, "getting the job done", design, brand/status, price, cost reduction, risk reduction, accessibility, and convenience/usability.

[5] Note that costs in practice are not constant. They are subject to change because of concepts like *Economies of Scale* (i.e. costs go down as the amount of good are ordered or produced) and *Economies of Scope* (i.e. costs go down due to incorporating other businesses which have a direct relation to the original product).

  - Cost-Driven: This business model focuses on minimizing all costs
  - Value-Driven: Less concerned with cost, this business model focuses on creating value for their products and services.
- *Characteristics of Cost Structures*:
  - Start-up costs refer to costs that are made until the first project within a LSI can start, resulting from:
    - Consortium building (e.g. meetings between possible partners)
    - Market analysis (e.g. meetings with potential clients, costs for professional market surveys)
    - Developing a business plan or proposal for funding (e.g. writing a proposal to apply for subsidies)
    - Developing the work programme and strategic research agenda of the LSIs
  - Infrastructure costs are resulting from the purchase of physical infrastructure, such as buildings or equipment (including renewal in order to keep up with the state of the art). Purchasing state-of-the-art infrastructure can be very costly.
  - Project costs result from the implementation of projects, and refer to salaries of research staff working on a specific project, costs for purchasing equipment needed for a project, costs for organizing a project-specific event, costs for project management). Projects are here defined as unique, temporary endeavours with a specific beginning and end.
  - Operational costs result from the day-to-day operation of the LSI (e.g. salaries for staff not working on a project-base such as business developers and management staff, rent for buildings, maintenance of infrastructure, operation of website, organisation of regular networking events). They incur on a regular basis and are not related to specific projects.

Revenue Streams - The way the LSI generates income from each customer segment by providing the services mentioned above. Potential ways to generate a revenue include (not exclusive):

- *Usage Fee* - Money generated from the use of a particular service within the framework of a dedicated project.
- *Subscription Fees* - Revenue generated by selling a continuous service.
- *Lending/Leasing/Renting* - Giving exclusive right to an asset for a particular period of time.
- *Licensing* - Revenue generated from charging for the use of a protected intellectual property.
- *Brokerage Fees* - Revenue generated from an intermediate service between two parties.

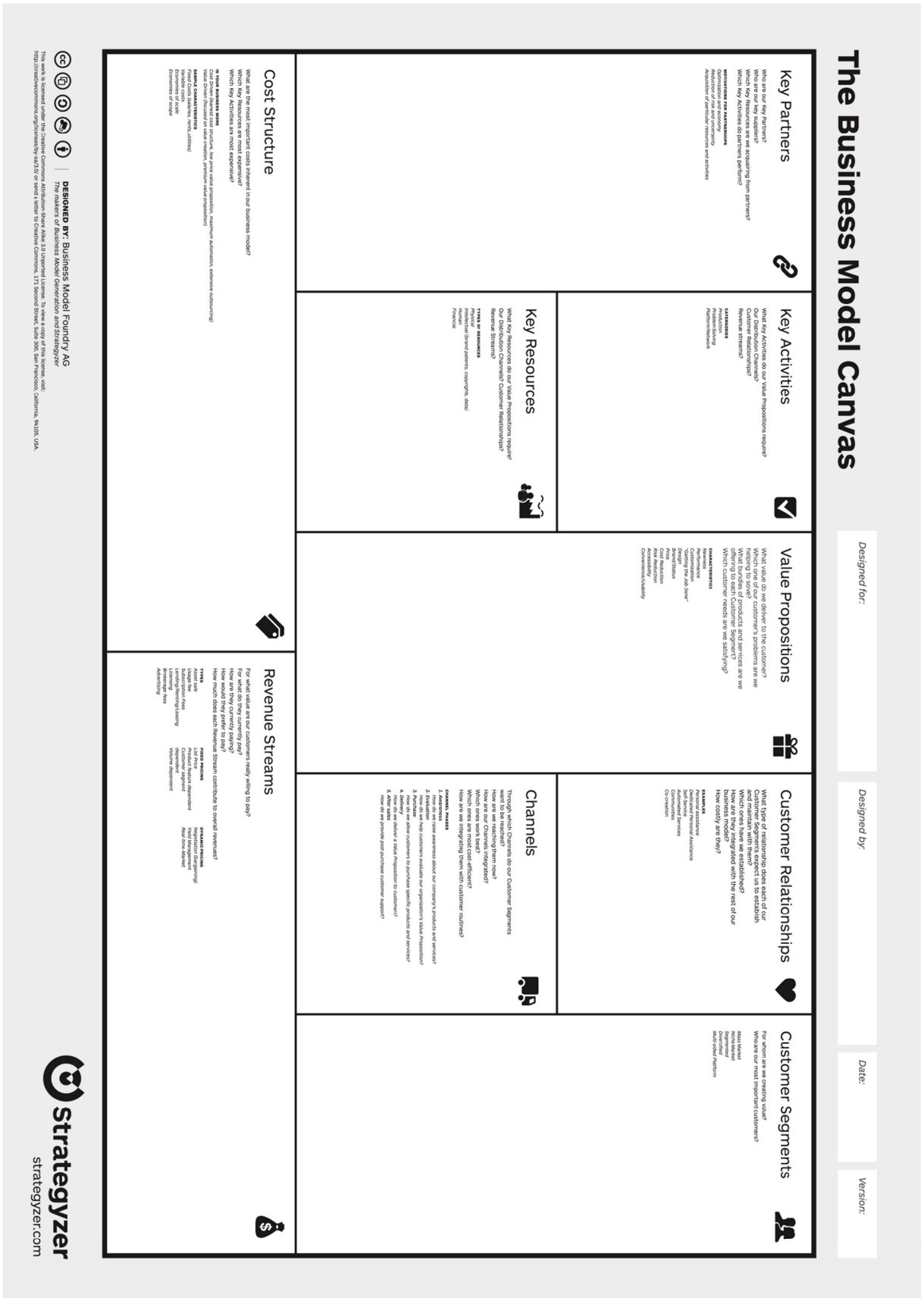

Figure 2: Business Model Canvas

5. Financial Plan

Financial plan LSI

Income	2016	2017	2018	2019	2020	2021	Upfront
R&D&I projects							
Public cofunded R&D&I projects							
Contract R&D&I activities							
Initial series production							
Other, namely							
Subtotal R&D&I projects	€0	€0	€0	€0	€0	€0	€0
Memberships							
Memberships (1st tier)							
Memberships (2nd tier)							
Other, namely							
Subtotal Membership and sponsering	€0	€0	€0	€0	€0	€0	€0
Consultancy and services							
Workshops							
Training and education							
Scouting and market intelligence							
Incubator services							
Other consultancy, namely ...							
Subtotal consultancy and services	€0	€0	€0	€0	€0	€0	€0
Other							
IP(R) - revenues							
Participations (e.g. in spin-offs, etc.)							
Conference fees							
Renting out infrastructure							
Other, namely							
Subtotal Other	€0	€0	€0	€0	€0	€0	€0
Total	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

TNO: Upfront income is the income that is available at the very start (moment of continuation) of the LSI, such that it can be appropriated to actually launch (continue) the initiative.
In practice, income available upfront can be linked back to the distribution of income over the years as suggested in the columns to the left. But upfront available income is not a function of these elements.It should subsequently be included as part of the entries in the multi-annual budget.

TNO: Income distribution in the budget should be allocated according to the suggested entries; double counting of items should be avoided.
Income results from (is generated by) the provision of services by the LSI. As such it should not be confused with "Investments", that are reported further down.

TNO: Note that double counting should be avoided here. This implies that if for example a membership fee includes for example that research is conducted for this member, the total sum should be reported just once.

TNO: Also the distribution of the costs over the years in the budget should be allocated according to the suggested entries. Again double counting of items should be avoided.

TNO: Start-up costs refer to costs that are made until the first project within a LSI can start, resulting from:
- Consortium building (e.g. meetings between possible partners)
- Market analysis (e.g. meetings with potential clients, costs for professional market surveys)
- Developing a business plan or proposal for funding (e.g. writing a proposal to apply for subsidies)
- Developing the work programme and strategic research agenda of the LSIs

Costs	2016	2017	2018	2019	2020	2021	Upfront
Preparation business plan							
Consortium building							
Market analysis							
Set-up of the Work Programme							
Drafting of business plan							
Other, namely ...							
Subtotal preparation business plan	€0	€0	€0	€0	€0	€0	€0
Infrastructure							
Housing							
Machines and equipment							
IT infrastructure							
Other, namely ...							
Subtotal Infrastructure	€0	€0	€0	€0	€0	€0	€0
Projects							
Resources (materials, inputs, etc.)							
Researchers							
Training of staff							
Other, namely ...							
Subtotal Project	€0	€0	€0	€0	€0	€0	€0
All other operational costs							
Management							
Governance							
Business development, PR, etc.							
Operational staff							
Administration, HR, etc.							
PR and marketing							
Utilities (energy, water, etc.)							
Software &lincenses							
Maintenance							
repayment with interest on loans							
Other, namely ...							
Subtotal other operational costs	€0	€0	€0	€0	€0	€0	€0
Total	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

TNO: Upfront costs are costs that need to be addressed at the very start (constinuation) of the LSI
As an example: the investment required to purchase equipment that should be available at the very start of the LSI is recorded in this framework as "Upfront" costs under the entry "Machines and equipment".
As with upfron income, also upfront costs can be linked back to the distribution of costs over the years as suggested in the columns to the left. But also upfront costs are not a function of these elements. They should subsequently be included as part of the entries in the multi-annual budget.

TNO: Infrastructure costs are resulting from the purchase of physical infrastructure, such as buildings or equipment (including renewal in order to keep up with the state of the art).
The total investment required to purchase for example equipment is distributed over the different years in the budget (depending on the number of years, and pace with which one wants to write the machines down.

TNO: Project costs result from the delivery of the LSI-specific services (e.g. implementation of projects), and includefor example salaries of research staff working on a specific project, costs for organizing a project-specific event, costs for project management). Projects are here defined as unique, temporary endeavours with a specific beginning and end.
Note that we aggregate and allocate what could be considered as variable costs, such as utilities (e.g. energy, water), and software and licences to "all other operational costs". Machinery and equipment is aggregated under "Infrastructuire". We adopt this approach because it seems common practice within many RTOs / LSIs, and because it seems more straightforward to make such an aggregated estimation of costs. But in practice, (part iof these) items could be included in "project" costs. One should notice that elements are not included multiple times under different entries.

Total Income - Total Costs	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

TNO: The summation of the difference in the multi-annual budget overview between income and costs provides insight on the potential structural financing gap of the LSI

TNO: The difference between upfront income and costs provides insight on the immediate financing gap of the LSI.
Elements

Investments	2016	2017	2018	2019	2020	2021	Upfront
Partners							
Other financial contribution (i.e. other than "Income")							
Sponsorships							
In-kind personnel							
In-kind equipment							
In-kind housing							
Equity financing							
Dept financing							
Other, namely ...							
Subtotal Partners	€0	€0	€0	€0	€0	€0	€0
Other private investments							
Financial sponsoring							
Sponsorships							
In-kind equipment							
In-kind personnel							
Equity financing							
Dept financing							
Other, namely ...							
Subtotal Private	€0	€0	€0	€0	€0	€0	€0
Public (i.e. publicaly funded)							
Equity financing							
Dept financing							
Sponsoring							
General cofunding							
Other, namely ...							
Subtotal Public	€0	€0	€0	€0	€0	€0	€ 0
Total	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0

TNO: Upfront investments refer to investments that are available (as liquid assets) at the very start (constinuation) of the LSI, such that it can be appropriated to actually launch (continue) the initiative.
In practice, upfron investments can be linked back to the distribution of investments over the years as suggested in the columns to the left. But upfront investments are not a function of these elements. They should subsequently be included as part of the entries in the multi-annual budget.

TNO: e.g. from RTOs, Universities, but also from companies. These might be project-specific.

TNO: One should be carefull not to include elements quoted / included under entries of "Income" also under "Investments". It is therefore suggested that all (financial) contributions by private partners that can be labeled as "income" is quoted under the corresponding entries of "Income".

TNO: Note that if the Grand total of Upfront is negative, the LSI will not start (continue).

Grand total: Total income plus total Investments minus Total Costs	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0