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Green Acceleration Toolbox

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User Personas

What is it?

Personas are fictional representations of end users, constructed based on their demographics, behaviors, and motivations. They serve to visualize and comprehend the various types of users and their specific needs.

Why is it useful?

In the Define phase of design thinking, personas are considered key deliverables. Given their significant role in ideation, they should be incorporated early in the design process.

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To develop personas, follow these steps:

1. Gather extensive data on the target users.
2. Identify the qualities and differences among users.
3. Formulate a hypothesis based on the research, outlining the qualities and differences among users.
4. Obtain agreement from stakeholders on the user hypothesis.
5. Determine the number of personas—aim for more than one per project, with a particular focus on one.
6. Name and provide descriptions for each persona in 1-2 pages, covering:

- A visual representation.
- User's values, interests, education, lifestyle, needs, attitudes, desires, limitations, goals, and behavior patterns.
- Additional details about the persona (e.g., interests) to enhance realism and relevance and foster empathy. Written narratives are preferable to bullet points.

7. Describe several situations/scenarios that prompt the persona to use your product—place them in contexts with challenges to overcome.
8. Involve all project stakeholders to ensure acceptance of the persona or provide input for revisions.
9. Distribute the persona to all team members for use in their work.
10. Ensure that everyone develops scenarios that effectively expose the persona to potential use cases.
11. Continuously refine and adjust the personas—revisit them regularly, add new features, introduce necessary new personas, and remove outdated ones.

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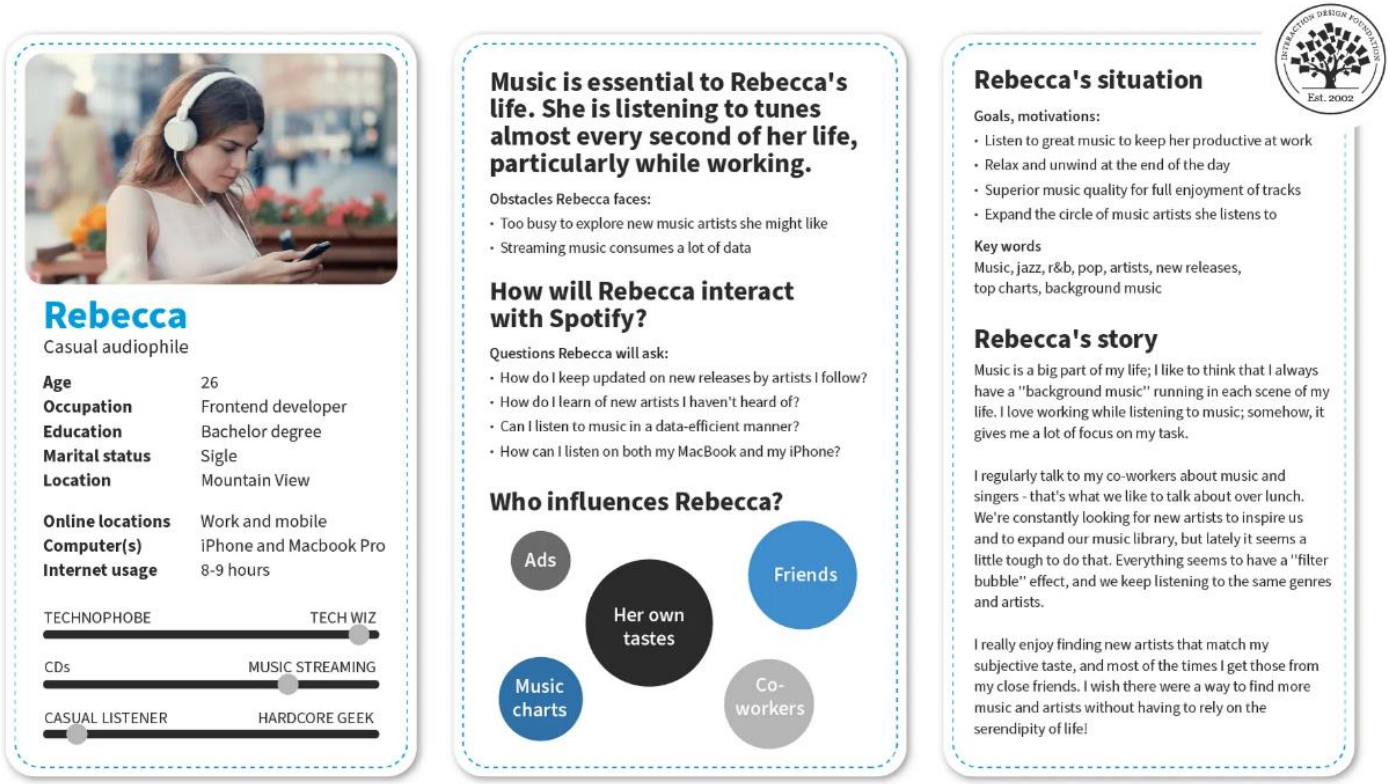

Example of a persona that shows the six main elements you should include. Name, age, gender, tag line, experience and skills are placed on the left – hand side, The middle column focuses on the context to indicate how they would interact with a product or service. Finally, on the right – hand side some goals and concerns are shared, as well as a short scenario to indicate the persona's attitude. [1]

[1] https://www.interaction-design.org/literature/topics/personas

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Value Mapping Tool

What is it?

Mastery of the Value Mapping Tool is crucial for cluster managers to comprehend value generation, assess interconnections, streamline operations, foster innovation, encourage collaboration, and aid in strategic decision-making within the cluster ecosystem. By adeptly utilizing this tool, cluster managers can instigate positive transformations, stimulate expansion, and advocate for sustainable progress within both individual companies and the cluster as a whole.

Why is it useful?

The "value mapping tool" is designed to assist companies in crafting value propositions that underpin sustainable business models. Employing a qualitative approach to value analysis, this tool prioritizes stimulating idea generation and facilitating discussion, rather than delving into quantitative intricacies. While quantitative analytical tools like Life Cycle Assessment and scenario analysis are valuable in sustainability contexts, the proposed use of the value mapping tool at the business modeling level does not necessitate such detailed quantitative analysis. Its primary aim is to spark creativity and promote dialogue.

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The tool has specific objectives, including:

- Understanding both the advantageous and detrimental aspects of the value proposition within the value network. This network comprises stakeholders involved in creating, delivering, and receiving value related to a product or service.
- Identifying instances of conflicting values, where a benefit for one stakeholder results in a disadvantage for another. This allows for proactive measures to address these conflicts.
- Spotting opportunities for redesigning business models and aligning interests to minimize negative outcomes and enhance overall results for stakeholders within the value network, particularly for society and the environment.

The tool was designed with user-friendliness and minimal expert facilitation requirements in mind. Drawing insights from value innovation, a value mapping tool was developed.

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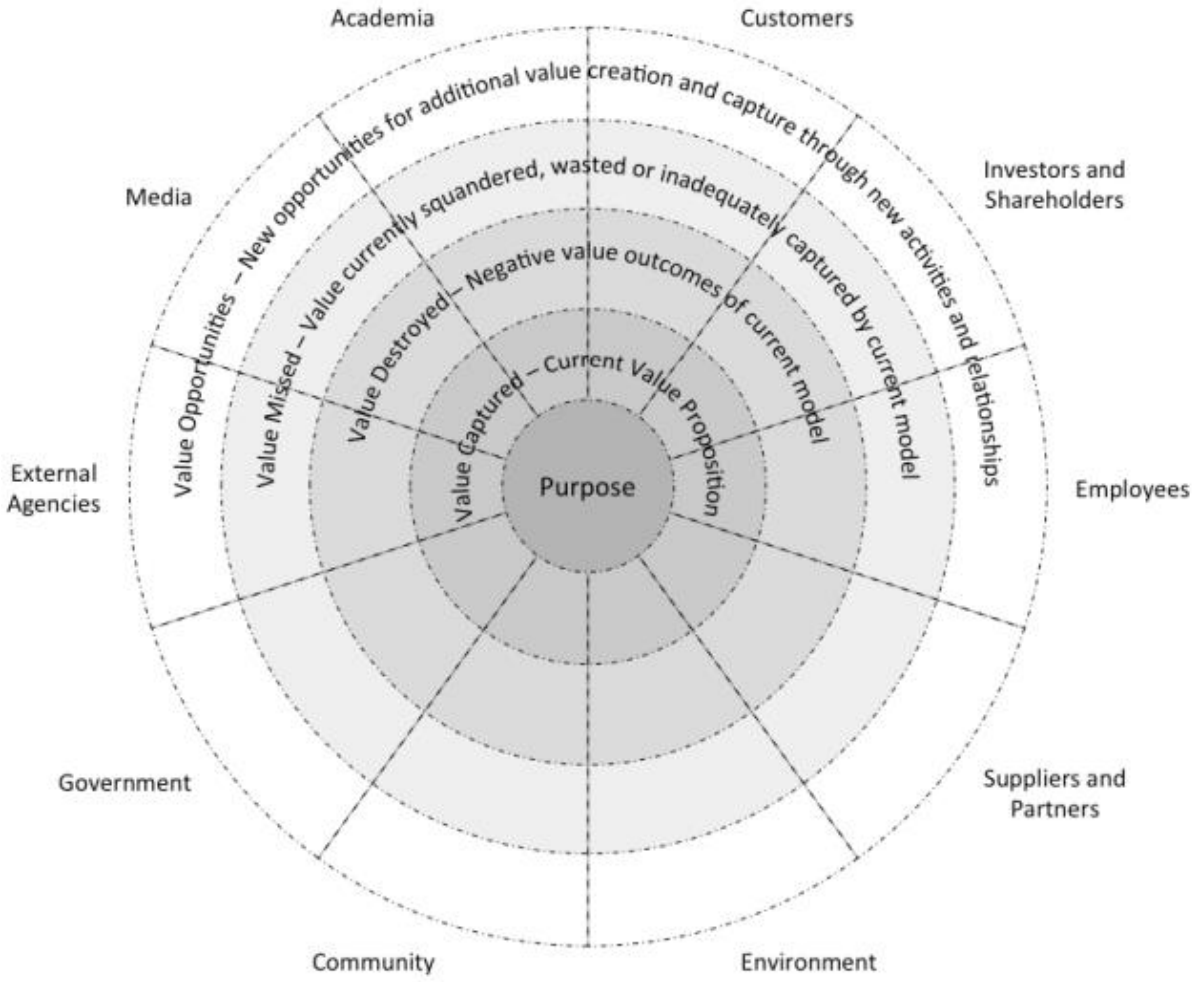

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Business model canvas

What is it?

The Sustainable Business Model Canvas (Figure 11) serves as a valuable resource for cluster managers aiming to enhance sustainability within their clusters and assist SMEs.

Why is it useful?

This tool aids in recognizing opportunities, evaluating performance, fostering cooperation, strategizing, and effectively communicating sustainability initiatives. Ultimately, it contributes to fostering beneficial environmental, social, and economic results within the cluster ecosystem.

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Input-related stakeholders	Activities	Value Proposition	Value Proposition	Output-related stakeholders
	Resources		Channels	
Burdens			Benefits	

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Carbon Disclosure Project (CDP)

What is it

CDP is a global nonprofit organization focused on investors, urging businesses to voluntarily disclose annually their performance on diverse climate, supply chain, and environmental metrics. The reports are publicly accessible and featured in annual compilations covering supply chains, water risk management, climate issues, forestry, and other relevant criteria.

How does the process of CDP questionnaires and reporting function? CDP issues guidance on its Online Response System (ORS) questionnaires annually in January. From April onwards, companies can enter data and metrics into the ORS. By late July, with specific deadlines varying by industry, companies are required to submit their responses via the ORS for inclusion in that year's reports. While most company data is self-reported to CDP, occasionally CDP may request a company to submit a report.

CDP's Carbon Disclosure Ratings resemble the grading systems commonly encountered in education, ranging from A to F. Responses to questionnaire items are graded based on various criteria, including verifiability, level of detail, engagement with value and supply chains, identification and management of climate risks, ambition of emissions targets, and completeness of reporting for scope 1, scope 2, and scope 3 emissions. Additionally, responses are evaluated across industry-specific categories. The distinctions between a minus grade and a full letter grade are contingent upon the extent of engagement or awareness across different indicators:

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- **Leadership (A and A-):** These companies demonstrate environmental leadership by reporting on climate, forestry, and water indicators. They develop climate and environmental transition plans, assess environmental risks in their supply chains, and align with frameworks such as the TCFD, Science Based Targets Initiative, Sustainable Development Goals (SDGs), and other ESG reporting standards.

- **Management (B and B-):** These companies address environmental impacts within their operations but do not exhibit leadership compared to peers in their industry.

- **Awareness (C and C-):** This rating reflects the comprehensiveness of a company's self-assessment regarding activities and operations impacting people and ecosystems.

- **Disclosure (D and D-):** These companies have responded to every question but have not yet met the core environmental indicators.

- **Failure (F):** Indicates insufficient information provided for evaluation. Typically, these companies either failed to answer every question or were asked to submit questionnaire responses but did not comply.

What are the disclosure requirements of CDP?

CDP questionnaires are tailored based on industry, company size, and any additional commitments to which companies and governmental entities have agreed to respond. These questionnaires are in alignment with the TCDF, which mandates reporting on sustainable and environmental finance, as well as climate risks related to finances for both companies and governments. While most reporting entities provide climate-related

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information, companies also have the option to provide supplementary information on water, forests, and supply chain criteria.

- **Climate:** Companies disclose information concerning their approach to addressing climate impacts, risk management, emissions management, and opportunities for decarbonization.
- **Water:** Approximately 20% of all companies also provide reports on water-related issues and risks.
- **Forests:** Companies can choose to share their efforts in verifying and managing forest commodities, as well as identifying supply chain risks associated with deforestation.
- **Supply chains:** These criteria allow companies involved in the supply chain of other companies to identify climate risks, opportunities for decarbonization, and scope 1, 2, and 3 emissions.

Task Force on Climate-related Financial Disclosures

What is it?

In 2015, the Financial Stability Board (FSB) formed the Task Force on Climate-related Financial Disclosures (TCFD) with the goal of developing standardized and voluntary financial disclosures pertaining to climate change.

Why is it useful?

The objective is to assist investors, lenders, and insurance underwriters in accurately assessing and pricing climate risks. Given that the TCFD framework is compulsory in some jurisdictions or aligned with their regulations, it is crucial to bear in mind the following ten insights when initiating or advancing your climate-related reporting efforts.[1]

[1] https://www.grantthornton.global/en/insights/articles/ten-considerations-for-preparing-tcfd-climate-related-financial-disclosures/

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TEN CONSIDERATIONS:

1. The reporting journey
2. Focus on what is material
3. Time horizons
4. Linking to the overall risk management process
5. Consistency of data on a timely basis
6. Events after the reporting period
7. Metrics and targets
8. Scope 3 emissions
9. Generic information
10. Transparency and connectivity

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Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

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Empathy Cards

What is it?

Empathy maps serve as visual aids that assist teams in gaining a deep understanding of users by delving into their thoughts, emotions, needs, and obstacles. Establishing empathy with users is crucial from both a business and user experience standpoint.

Why is it useful?

Understanding the motivations, frustrations, and actions of your primary users is essential for effectively targeting them and offering sustainable solutions to their problems. Although creating empathy is not a simple task, empathy maps provide an effective means to accomplish it.

How to create an empathy map:

To create empathy maps, most templates typically include **four quadrants**: **Does, Thinks, Says, and Feels**. Each quadrant prompts unique questions aimed at analyzing the user's perspective and understanding their daily behaviors and interactions.[1]

[1] https://www.questionpro.com/blog/empathy-map/

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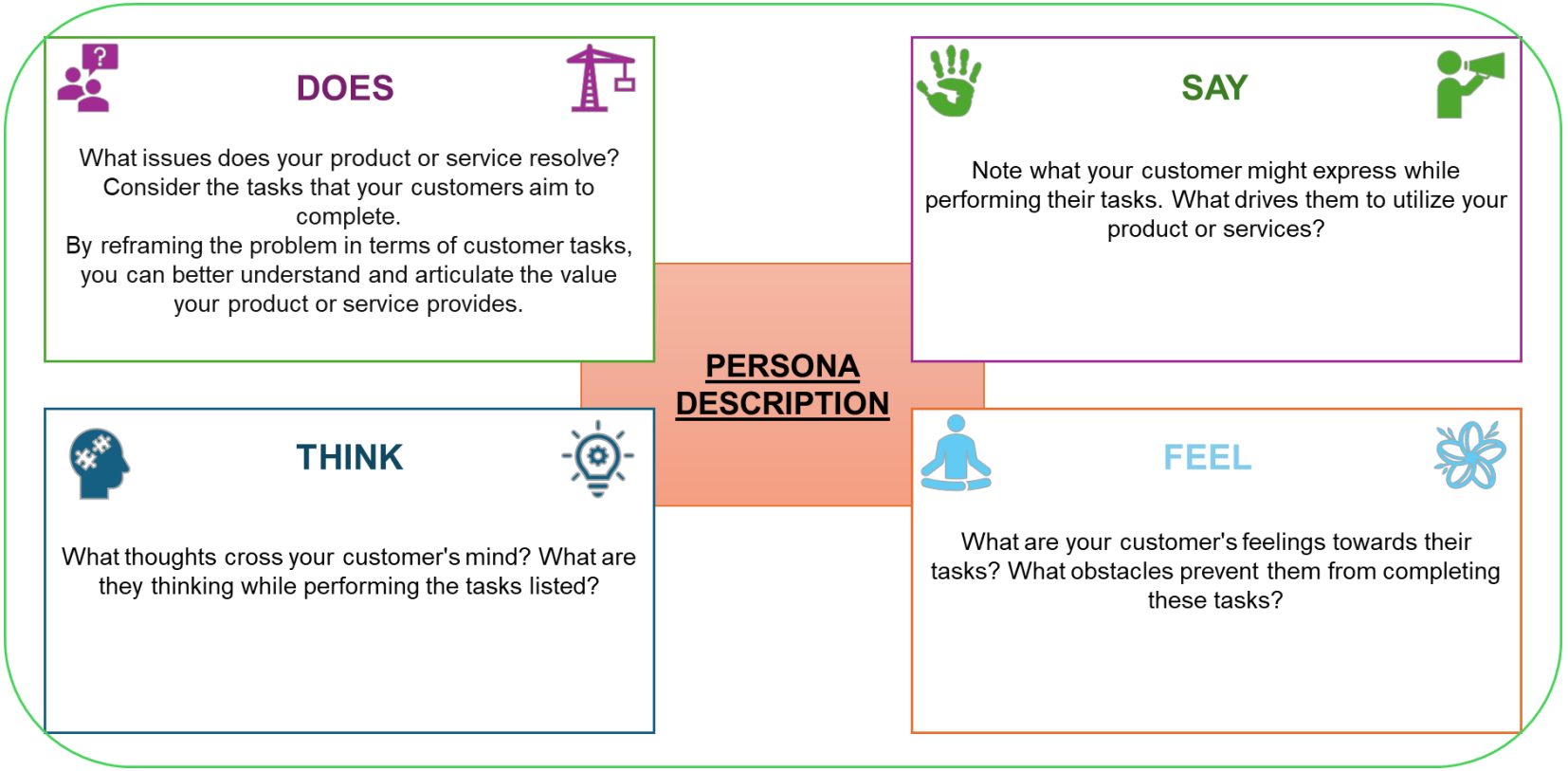

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ESG Risks and CSRD Compliance

What is it?

The European Union's Corporate Sustainability Reporting Directive (CSRD) mandates companies to disclose specific ESG data, thereby highlighting the importance of ESG issues. To adhere to the CSRD requirements, organizations must integrate ESG factors into their risk management framework and divulge their ESG-related risks and opportunities.

Why is it useful?

Companies are required to follow a comprehensive double materiality process to determine which ESG issues are most relevant to their operations. This process serves as a guideline for companies to incorporate ESG factors into their decision-making processes, formulate an ESG strategy, and ultimately ensure compliance with the CSRD.

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Let's delve into the process of identifying and managing risks and opportunities within the context of the CSRD:

Identifying ESG Risks:

ESG risks encompass potential adverse impacts that a company's operations or activities may have on the environment, society, and governance practices. Below are some approaches to identifying ESG risks:

1. **Environmental Risks:** These encompass the risks associated with a company's environmental footprint, such as pollution, greenhouse gas emissions, deforestation, and water scarcity. Indicators of environmental risks include a company's carbon footprint, waste management practices, and environmental policies.

2. **Social Risks:** These pertain to how a company engages with its stakeholders, including employees, customers, suppliers, and community members. Indicators of social risks include employee turnover, labor disputes, product safety concerns, and customer complaints.

3. **Governance Risks:** These are linked to a company's corporate governance practices, such as board structure, executive compensation, and shareholder rights. Indicators of governance risks include related-party transactions, CEO turnover, and instances of accounting irregularities.

To identify ESG risks, companies can undertake ESG assessments, engage with stakeholders, review sustainability reports, and analyze industry trends and best practices. Investors can also assess ESG risks by examining a company's ESG rankings, reviewing ESG disclosures, and conducting due diligence.

Identifying ESG risks can be challenging due to their broad scope and often indirect impacts. Nonetheless, it is a crucial process for any company aiming to achieve compliance with the CSRD.

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Managing ESG Risks:

Once identified, the next step is to develop strategies to effectively manage these risks. These strategies may involve implementing more sustainable operational practices, fostering a more inclusive workplace culture, and enhancing governance structures.

<u>Clusters can adopt several measures to proficiently handle ESG risks:</u>

1. **Conduct an ESG risk assessment:** As mentioned previously, conduct a thorough assessment to identify and analyze ESG risks.
2. **Formulate an ESG strategy:** Define your organization's ESG objectives and establish a plan to attain them. This plan should address each of the ESG risks identified during the assessment.
3. **Implement ESG policies and practices:** Develop and execute policies and practices aimed at mitigating the identified ESG risks. This may involve initiatives such as reducing greenhouse gas emissions, advocating for ethical labor standards, and promoting board diversity.
4. **Monitor and evaluate ESG performance:** Continuously monitor your organization's progress in achieving its ESG objectives and assess the efficacy of the implemented policies and practices.
5. **Report ESG performance:** Communicate your organization's ESG performance to stakeholders, including investors, customers, and employees. This may involve issuing an annual ESG report, engaging in sustainability reporting, or making other pertinent disclosures according to established frameworks like the CSRD/ESRS.

By adhering to these steps, organizations can proficiently manage ESG risks, enhance their environmental and social impact, and bolster their long-term sustainability and resilience.

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Sustainability Accounting Standards Board (SASB)

What is it

SASB standards facilitate the disclosure of financially significant sustainability information by companies to their investors. These standards cover **77 industries** and pinpoint the subset of ESG (**Environmental, Social, and Governance**) issues most pertinent to financial performance in each industry.

SASB's Materiality Map delineates sustainability issues likely to impact the financial condition or operational performance of companies within an industry. These are categorized into five "Dimensions," each containing several General Issues categories:

1. **Environment** – Including GHG (Greenhouse Gas) Emissions, Air Quality, Energy Management, Water & Wastewater Management, Waste & Hazardous Materials Management, and Ecological Impacts.
2. **Social Capital** – Encompassing Human Rights & Community Relations, Customer Privacy, Data Security, Access & Affordability, Product Quality & Safety, Customer Welfare, and Selling Practices & Product Labeling.
3. **Human Capital** – Covering Labour Practices, Employee Health & Safety, Employee Engagement Diversity & Inclusion.
4. **Business Model and Innovation** – Addressing Product Design & Lifecycle Management, Business Model Resilience, Supply Chain Management, Materials Sourcing & Efficiency, and Physical Impacts of Climate Change.

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5. Leadership and Governance – Involving Business Ethics, Competitive Behaviors, Management of the Legal & Regulatory Environment, Critical Incident Risk Management, and Systemic Risk Management.[1]

The Value Reporting Foundation oversees the maintenance of SASB Standards. This foundation is a worldwide nonprofit entity that provides a wide range of resources aimed at assisting businesses and investors in establishing a mutual comprehension of enterprise values – how they are generated, safeguarded, or diminished.[2]

Organizations utilize SASB Standards to identify, assess, and manage the ESG factors that have the most significant impact on their ability to generate value. These standards equip companies with cost-effective and industry-specific tools to convey this vital information to the financial markets. Additionally, companies can integrate SASB Standards with other reporting frameworks to offer a more comprehensive overview of their sustainability practices and other relevant factors to meet the diverse needs of various stakeholders. As of July 2023, a total of 2,839 distinct companies have disclosed sustainability information to the markets using SASB Standards since 2020.

[1] https://www.slideshare.net/slideshow/a-guide-to-esg-standards-and-frameworkspdf/266379970
[2] https://www.slideshare.net/slideshow/global-sustainability-best-practices-gri-iirc-sasb-vrf/250781433

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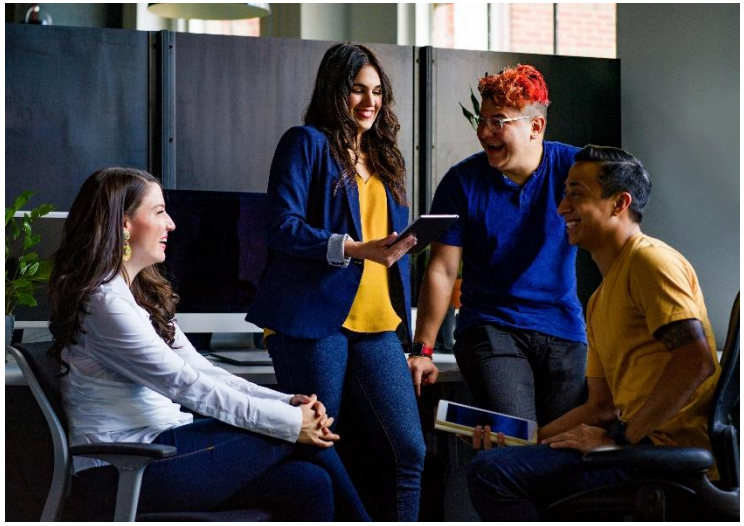
Sustainability SWOT Analysis

What is it?

The Sustainability SWOT Analysis is an invaluable resource for cluster managers to evaluate the existing sustainability status within both the cluster and its companies.



Why is it useful?

It aids in recognizing opportunities and challenges, guiding strategic decision-making, and rallying stakeholders for collaborative sustainability efforts.

Through this analysis, cluster managers can catalyze constructive transformation, bolster resilience, and advocate for sustainable progress within the cluster ecosystem. The tool outlines a comprehensive SWOT analysis, offering a framework to generate enduring sustainable business value.

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Environmental & Social Challenges & Big Trends	Strengths, Opportunities, Weaknesses & Threats		Prioritization & Action
Challenges • Natural resource scarcity • Water availability • Waste & hazards • Climate variability and extremes	**S Strengths** • In what ways can your strengths help tackle environmental challenges? • Begin with a conventional list of your company's strengths and then expand the list to include your value chain partners.	**W Weaknesses** • Who shares similar weaknesses or faces similar risks? • Begin with the risks that environmental challenges pose to markets. • Include partners in list.	**Prioritize** • Which insights will have the greatest impact on senior company stakeholders? • Give priority based on the company's vision and strategy. • Waste & hazards. • Climate variability and extremes.
Trends • What are the major trends relevant to sustainability? E.g. advancements in innovation and technology, and global economic changes.	**O Opportunities** • Identify unaddressed threats and consider how you can tackle them. • Think about the business value that can be generated through new products, services, and practices.	**T Threats** • Where do environmental challenges pose a threat to future business value? • Take into account both direct threats and threats to your value chain partners. • Examine both upstream and downstream to find opportunities for collaborative action.	**Act** • What might constitute a short-term, medium-term, or long-term strategy? • Organize insights based on opportunities for action and their timing. • If necessary, contemplate gathering additional insights before proceeding with planning.

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Sustainable Business model canvas

What is it?

The Sustainable Business Model Canvas serves as a valuable resource for cluster managers aiming to enhance sustainability within their clusters and assist SMEs.

Why is it useful?

This tool aids in recognizing opportunities, evaluating performance, fostering cooperation, strategizing, and effectively communicating sustainability initiatives. Ultimately, it contributes to fostering beneficial environmental, social, and economic results within the cluster ecosystem.

Besides economic criteria it focusses on ecological and social consequences of the activity. It aims at maximizing positive and avoiding negative impact on society and nature. Therefore, sustainability is integrated into the core business.

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How to use it?

There is no strict rule for the starting point. Usually, eihter the Value Proposition or the Customer Segments will provide an answer to the questions:

- Which problem do we want to solve?
- Whose problem do we want to solve?

The elements may be grouped as follows:

- Value Proposition – Customer Relationships – Channels – Customer Segments
- Key Partners – Key Activities – Key Resources
- Cost Structure – Revenue Streams
- Eco-Social Costs – Eco-Social Benefits

Download the full template here.

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The Sustainable Business Model Canvas

Designed for:

Designed by:

On: Day Month Year

Version: No.

Key Partners

Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

MOTIVATION FOR PARTNERSHIPS:
Optimization and economy
Reduction of risk and uncertainty
Aquisition of particular resources and activities

Key Activites

What Key Activites do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue Streams?

CATEGORIES:
Production
Problem Solving
Platform/Network

Key Resources

What Key Resources do our Value Propositions require?
Our Distributions Channels?
Customer Relationships?
Revenue Streams?

TYPES OF RESOURCES:
Physical
Intellectual (brand patents, copyrights, data)
Human
Financial

Value Propositions

What value do we deliver to the customer?
Which one of our customer's problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?

CHARACTERISTICS:
Newness
Performance
Customization
„Getting the Job Done"
Design
Brand/Status
Price
Cost Reduction
Risk Reduction
Accessibility
Convenience/Usability

Customer Relationships

What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
Which ones have we established?
How are they integrated with the rest of our business model?
How costly are they?

EXAMPLES:
Personal Assistance
Dedicated Personal Assistance
Self Service
Automated Services
Communities
Co-Creation

Channels

Through which Channels do our Customer Segemnts want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How are we integrating them with customer routines?

CHANNEL PHASES:
1. Awareness
2. Evaluation
3. Purchase
4. Delivery
5. After Sales (post-purchase customer support)
... of products & servides and Value Proposition

Customer Segments

For whom are we creating value?
Who are our most important customers?

POSSIBILITIES:
Mass Market
Niche Market
Segmented
Diversified
Multi-sided Platform

Cost Structure

What are the most important costs inherent in our business model?
Which Key Resources are the most expensive?
Which Key Activities are most expensive?

IS YOUR BUSINESS MORE:
Cost Driven (leanest cost structure, low price value proposition, maximum automation, extensive outsourcing)
Value Driven (focussed on value creation, premium value proposition)

SAMPLE CHARACTERISTICS:
Fixed Costs (salaries, rents, utilities)
Variable Costs
Economies of Scale
Economies of Scope

Revenue Streams

For what value are our customers really willing to pay?
For what do they currently pay?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

TYPES:
Asset Sale *Subscription Fees* *Licensing*
Usage Fee *Lending/Renting/Leasing* *Brokerage Fees*

FIXED PRICING:
List Price
Product feature dependent
Customer segment dependent
Volume dependent

DYNAMIC PRICING
Negotiation (bargaining)
Yield management
Real-time Market

Eco-Social Costs

What ecological or social costs is our business model causing?
Which Key Resources are non-renewable?
Which Key Activities use a lot of resources?

EVALUATION INSTRUMENTS:
Life-Cycle Assessment (of products and services)
Common Good Balance Sheet

Eco-Social Benefits

What ecological or social benefits is our business model generating?
Who are the beneficiaries? Are they potential customers?
Can we transform the benefits into a Value Proposition? If yes, for whom?

INSTRUMENTS:
Social Reporting Standard
Common Good Balance Sheet

Based on: www.businessmodelgeneration.com

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Open Innovation Approach

What is it?

Henry Chesbrough's Open Innovation model, introduced in 2003, emphasizes the importance of leveraging external ideas and paths to market in addition to internal ones. For cluster managers, who oversee the collaborative networks of interconnected businesses, academic institutions, and other entities within a specific region or industry, Chesbrough’s model can be a game-changer in fostering innovation and competitive advantage.

What about implementation? To date, there are three main models of achieving open innovation:

- **Outside-in:** for example, scouting, in-licensing, and funding start-ups.
- **Inside-out:** for example, out-licensing, donating IP, corporate incubators.
- **Coupled processes:** for example, strategic alliances, and consortia.

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Why is it useful?

Cluster managers can practically apply Open Innovation by:

1. **Facilitating Partnerships:** Connect firms with universities, research institutions, and other companies to share knowledge and resources.

2. **Promoting Knowledge Sharing:** Organize workshops, seminars, and networking events to encourage the exchange of ideas and best practices.

3. **Integrating External Innovations:** Identify and adopt external technologies and innovations through licensing, acquisitions, or joint ventures.

4. **Supporting Startups:** Provide incubation programs, funding, and mentorship to foster new ventures and spin-offs within the cluster.

5. **Creating an Innovation Ecosystem:** Develop an environment that attracts talent, investment, and resources, enhancing the cluster's overall competitiveness.

By implementing these strategies, cluster managers can drive innovation and maintain a competitive edge.

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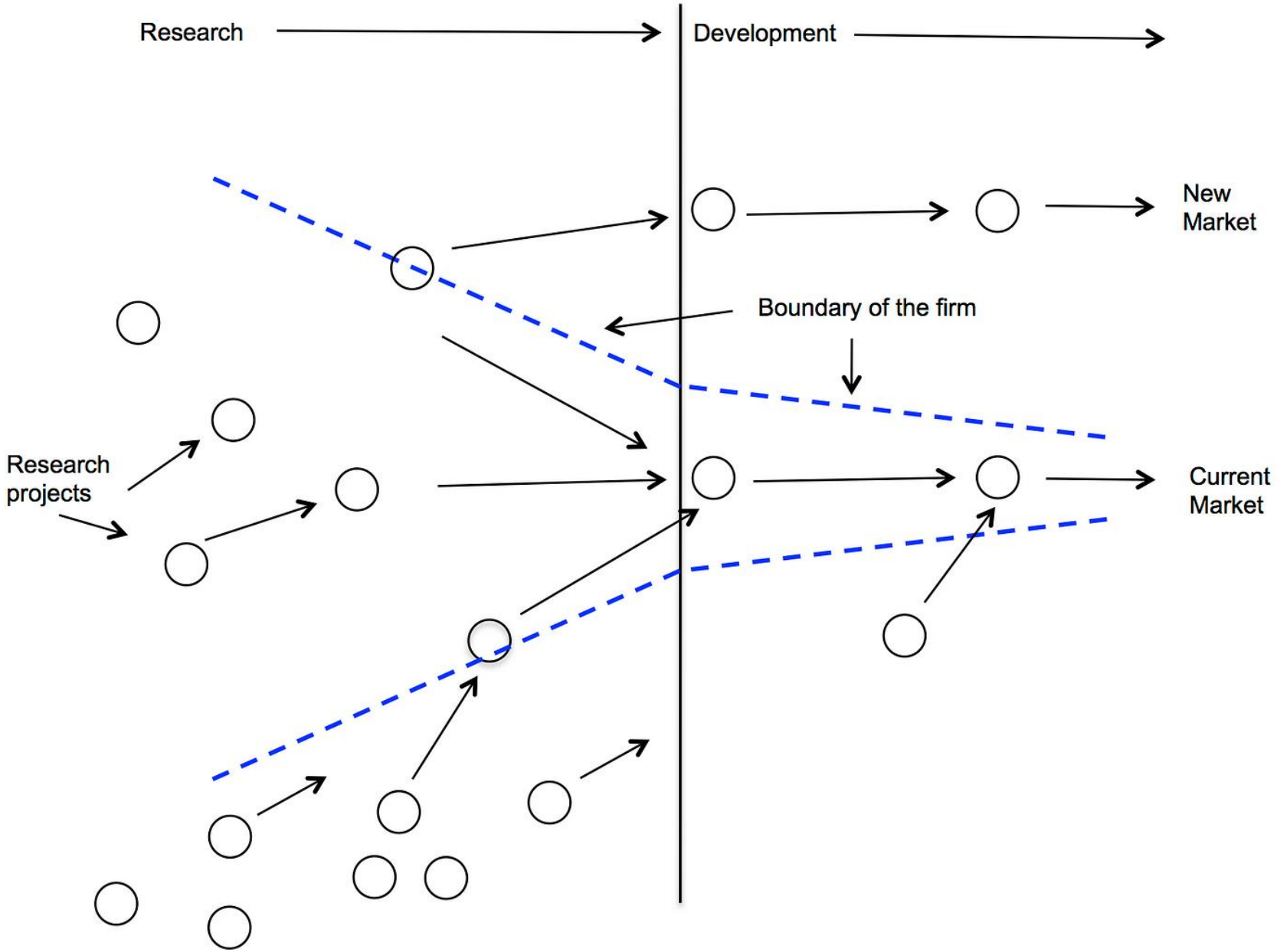

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Resource Based View

What is it?

The Resource-Based View (RBV), also known as Resource-Based Theory, is a strategic approach that highlights the importance of organizational resources and capabilities as key drivers of competitive advantage and performance. A highly skilled talent pool allows an organization to explore opportunities and mitigate risks proactively, while also implementing strategies to enhance operational efficiency and effectiveness.

According to the RBV model, organizations must leverage their existing resources innovatively to seize new opportunities and acquire niche skills. This resource-based analysis should empower the workforce to enhance organizational capabilities within the RBV framework.

The RBV approach is built on the idea that firms are made up of various tangible and intangible resources, including skills, knowledge, experience, technology, data, materials, location, and processes. When combined, these resources form "Capabilities," a special type of resource that, individually or collectively, lead to the development of "Core Competencies" or "Strategic Capabilities." These core competencies provide a firm with a sustainable competitive advantage in the marketplace.

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Why is it useful?

For cluster managers, RBV is particularly useful as it emphasizes leveraging unique local resources to enhance the cluster's competitiveness. Here's how it applies:

1. **Identification of Key Resources:** Cluster managers should identify and catalog the unique resources within the cluster, such as specialized skills, advanced technologies, or unique geographical advantages.

2. **Development and Enhancement:** Invest in developing these resources further. This could involve training programs, infrastructure improvements, or fostering innovation.

3. **Protection and Sustainability:** Ensure that these resources are protected from imitation and substitution. This might involve securing intellectual property rights or creating barriers to entry for competitors.

4. **Strategic Utilization:** Use these resources strategically to create competitive advantages. This could mean focusing on niche markets where the cluster's resources provide a distinct edge.

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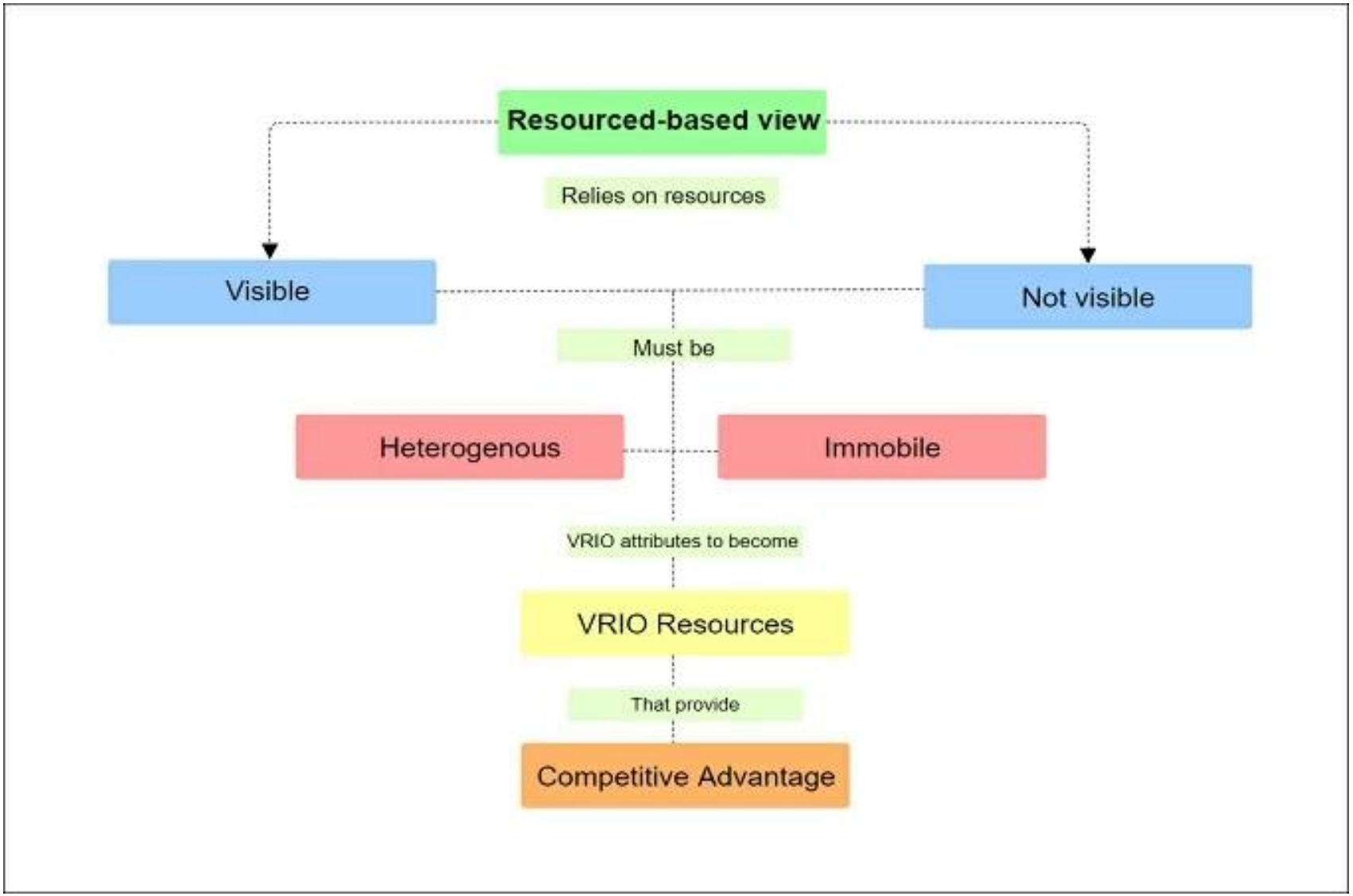

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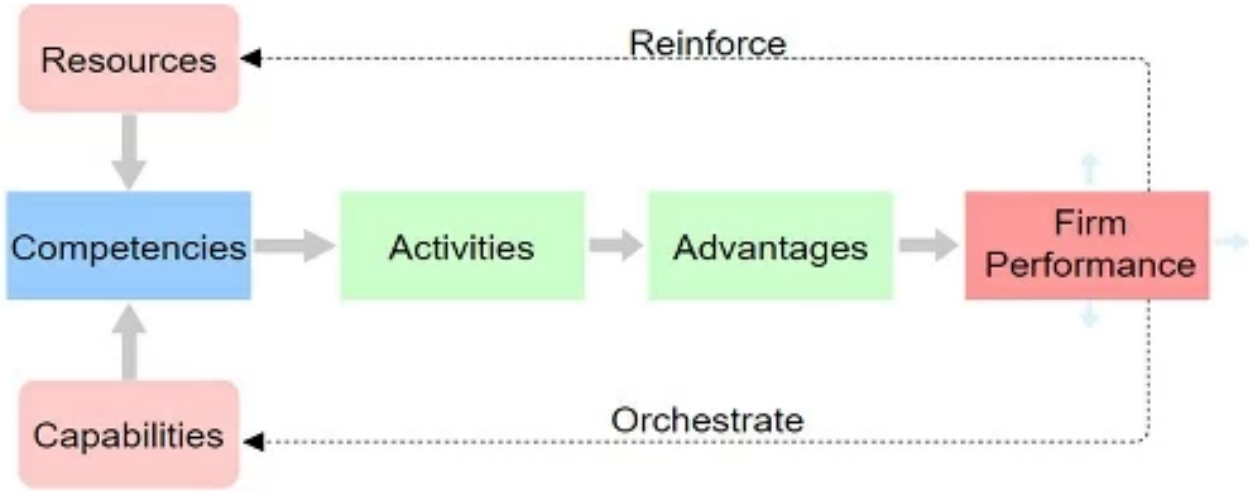
Resource-based View Diagram



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Strategic Diamond of National Advantages

What is it?

Porter’s Diamond model explains national competitive advantage through four attributes: factor conditions, demand conditions, related/supporting industries, and firm strategy/rivalry.

Why is it useful?

It’s useful for cluster managers to identify and enhance these elements, fostering innovation, efficiency, and global competitiveness within their clusters.

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How to use it:

Porter's Diamond model helps understand the competitive advantage of regions in specific industries. As a cluster manager, focus on these four key attributes:

1. **Factor Conditions:** Assess and develop local resources like skilled labor and infrastructure. Invest in education and training to enhance workforce skills and improve infrastructure to support efficient production and distribution.
2. **Demand Conditions:** Understand local market demand for your industry's products or services. Encourage innovation by responding to sophisticated customer needs. Use local demand to drive quality improvements and innovation, which can be leveraged in international markets.
3. **Related and Supporting Industries:** Foster strong relationships with local suppliers and related industries. Encourage collaboration and knowledge sharing to drive innovation and efficiency. Develop a robust local supply chain to reduce dependency on external sources and enhance resilience.
4. **Firm Strategy, Structure, and Rivalry:** Promote a competitive environment within the cluster. Encourage firms to adopt best practices, innovate, and improve efficiency. Healthy competition drives firms to excel and achieve higher standards, making the cluster more competitive globally.

By strategically managing these elements and their interactions, you can create a dynamic and competitive environment that supports the growth and international success of your cluster.

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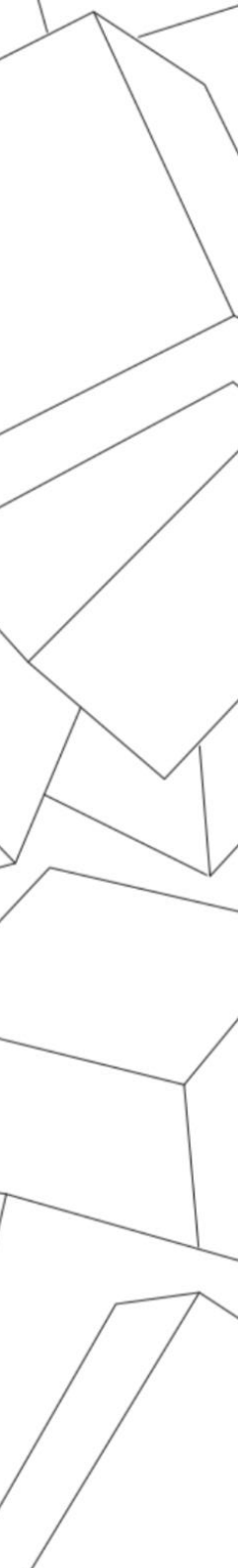

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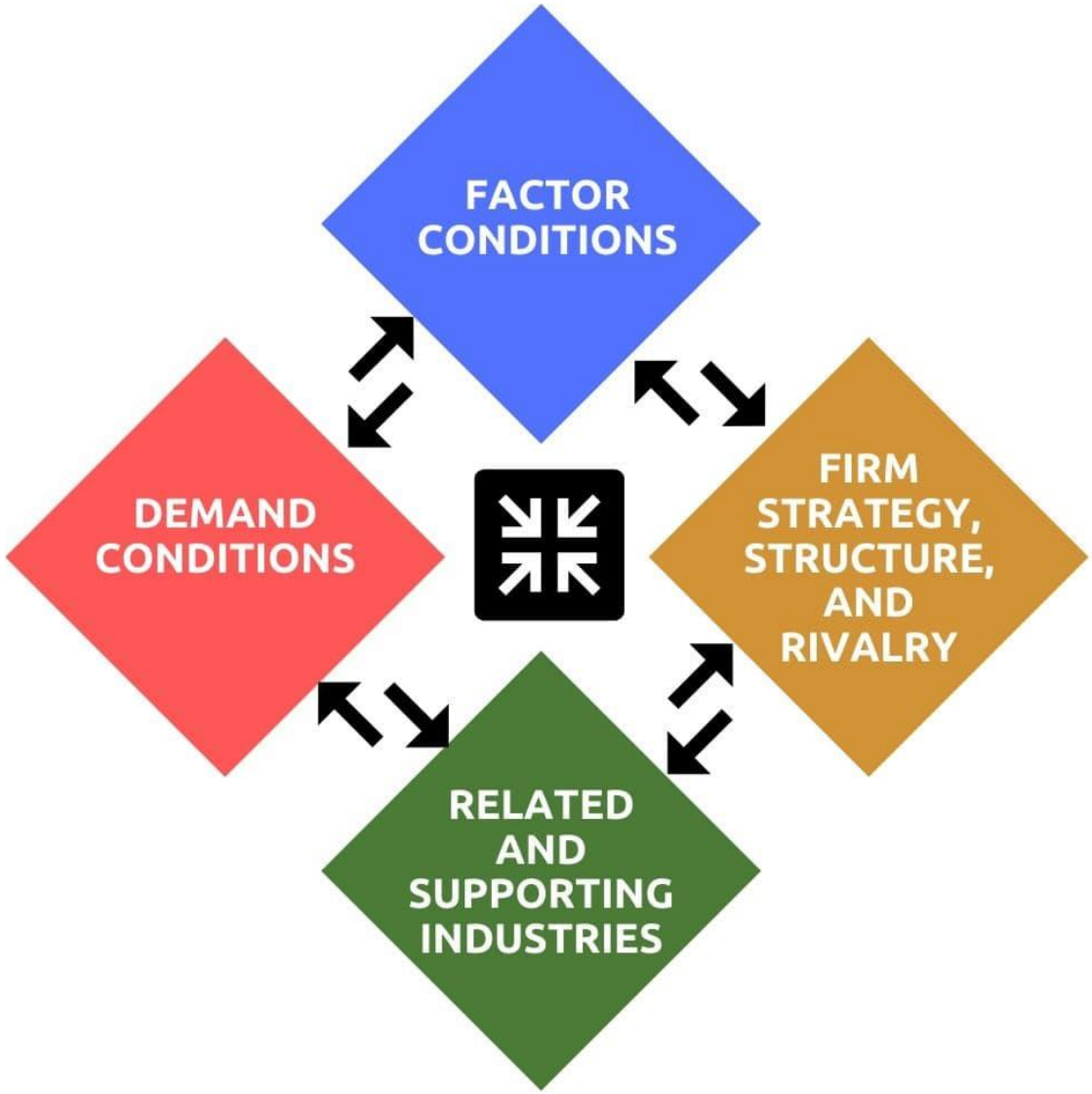

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Ecosystem Mapping

What is it?

The Danish Design Center has designed and developed an ecosystem mapping tool to help you get an overview of the actors and potential participants on your platform and how they relate to your future platform. This is crucial in a platform-way-of-working in order to build (and mobilize) an ecosystem of both existing and new actors. The full tool methodology can be accessed here.

Why is it useful?

Unlike traditional stakeholder mapping this tool aims at looking at the motivations, resources and capabilities that will become valuable for the overall ecosystem.

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1. **Map out all the actors you can come up with**

Create an overview of all the actors that make up your ecosystem surrounding your “missions statement” (see tool A1) that you have formulated: This includes your partners, your collaborators, contractors, your end-users, external stakeholders etc. Write as many as you can think of on post-its.

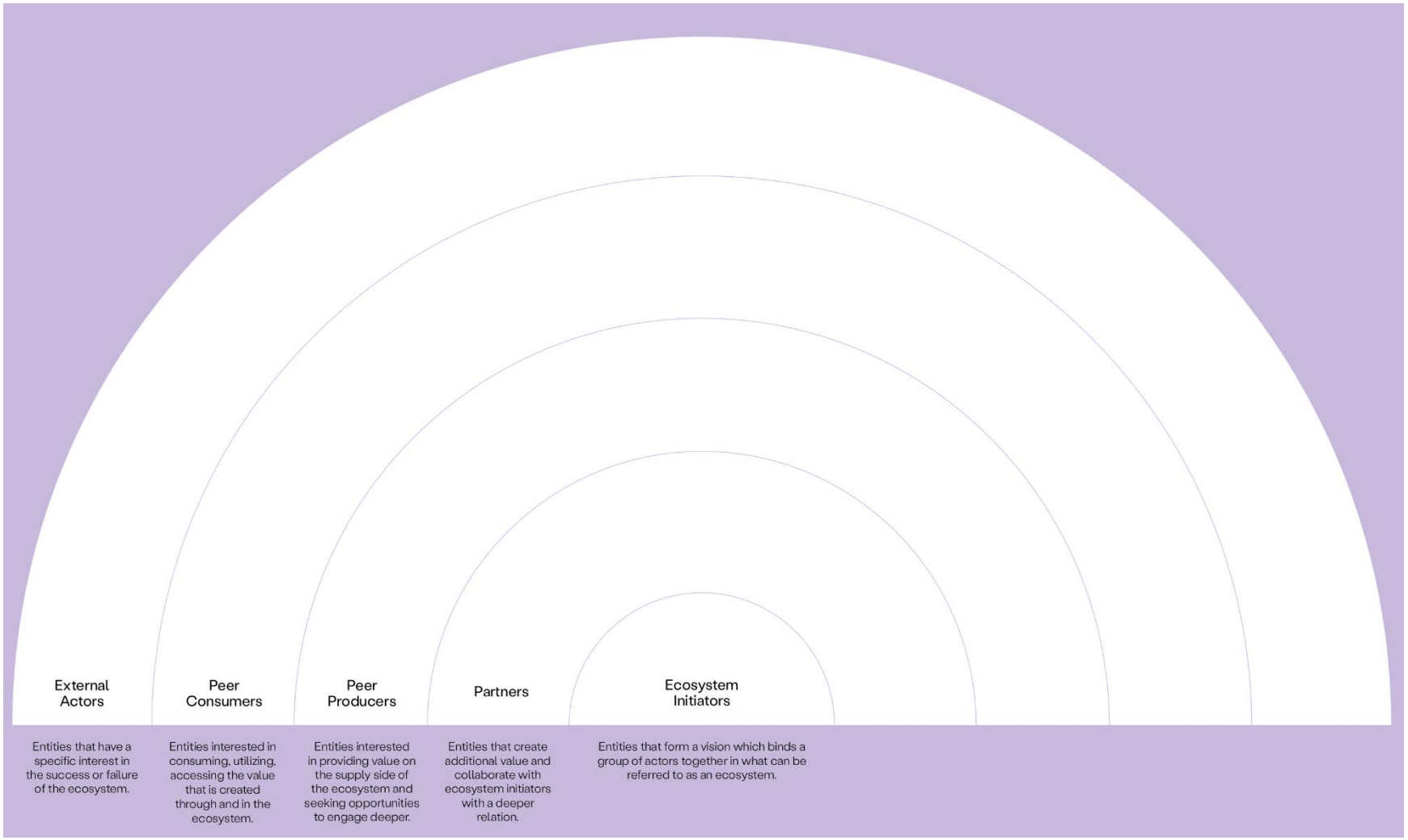
Discuss them one by one and place them on the canvas according to categories to which they belong. Some might belong in more than one category. Then place them on the line between those two categories – or write two post-its for that actor.

2. **Cluster all your actors**

Looking at your map you will probably realize that you have many individual actors who share context and, in a way, belong together. For example they could share the same motivation for being part of your ecosystem or they pose some of the same capabilities or resources relevant to your ecosystem.

Identify the 5 most important Actor Clusters on your ecosystem map and fill out the Stakeholder Cluster cards. You might experience that filling out the cards can be challenging due to your clusters being relatively loose and broad.

Try to avoid, as much as possible, broad categories such as ‘private sector’ or ‘civil society’ as this often obscures more than it reveals. If you are talking about the private sector, for example, then try to narrow to the specific segment or segments you have in mind.



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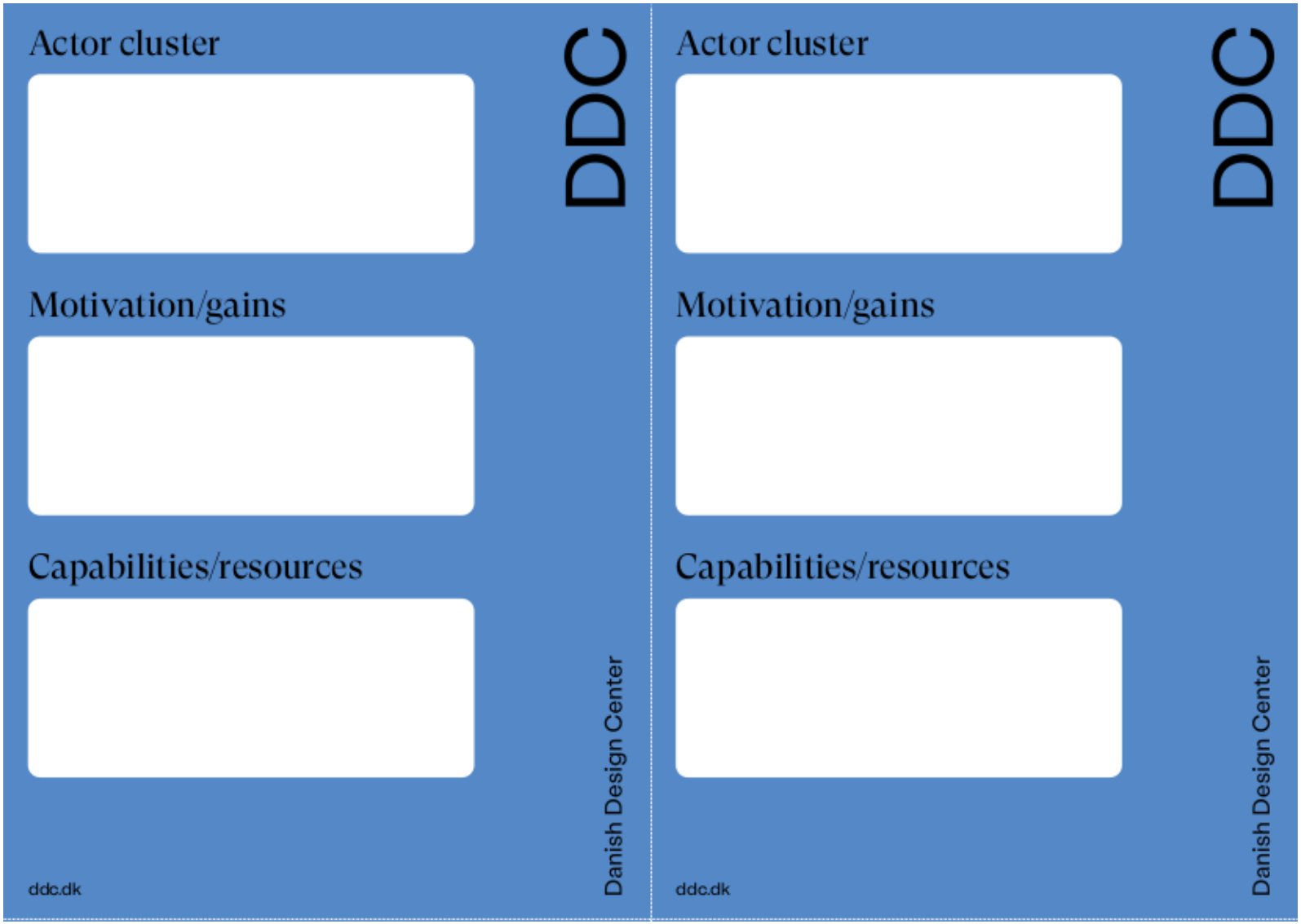

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Net-Carbon Impact Assessment of ICT solutions

What is it?

To support the green and digital transformation of the European Union, the European Green Digital Coalition has published a methodology to measure the net impact of digital solutions on the climate. This methodology allows to identify ICT solutions that can deliver a net positive impact by reducing emissions.

The net carbon impact of an ICT solution is the comparison between the carbon impacts of a scenario with an ICT solution and a reference scenario without the ICT solution within the same boundary. The total positive and negative carbon impacts of each scenario are considered including all direct and indirect effects within the boundary of the assessment.

Why is it useful?

The Net Carbon Impact Assessment Methodology for ICT Solutions is a sector-agnostic methodology which delineates requirements for a comprehensive comparison of scenarios with and without ICT solutions in a given implementation context. The methodology enables the quantification of both the positive contribution (e.g., carbon reduction) and negative contributions (e.g., solution's direct footprint) of a given ICT solution in CO2 equivalents (CO2e).

The full methodology can be accessed here and here.

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Who can use the EGDC Methodology?

By providing consistent and comparable methods for assessments of ICT solutions' impact, the EGDC empowers stakeholders globally to make informed decisions. The methodology can be leveraged by a broad spectrum of decision-makers in companies, the investment community, local authorities and financial institutions, driving the development and deployment of digital solutions that can deliver a net positive impact on the climate.

The methodology includes sector-specific methodologies:

- Construction/Buildings
- Transport
- Agriculture
- Energy/Power
- Smart Cities
- Manufacturing

The utility of this methodology extends beyond the immediate realm of ICT. It is equally applicable to diverse sectors that are embracing ICT solutions, providing them with a robust framework to systematically assess the net carbon impact of these technologies. By adopting this methodology, sectors can make informed decisions about the integration of ICT solutions with a clear understanding of their environmental implications.

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Name of solution	
Description of solution	*Description of how the solution works and where relevant, which human need it addresses*
Deployment of solution	*Description of where the solution is deployed currently (sector, geography) and where it has the potential to be deployed*
Image of solution or application of solution (if relevant)	
Functional Unit	*Description of functional unit and justification for why it was chosen*

Reference scenario	*Description of reference scenario and justification for why it was chosen*
Description of second order effects	*Description of all second order effects and explanation of how they reduce GHG emissions*
Description of higher order effects	*Description of all higher order effects and explanation of how they reduce GHG emissions*
Mapping of second order and higher order effects	

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Components of the solution	*Description of all components that are required for the solution to work, broken down into digital and non-digital components and highlighting whether they are part of the reference scenario*
Categorisation of digital technologies	*List of all digital technologies of the solution that are not part of the reference scenario split by categorisation* (A,B,C)
Description of calculation	*High-level explanation of the calculation approach for the different elements of the calculation: 1st order effects, second order effects and higher order effects*
Net Carbon Saving Impact of the Solution	*Total carbon saving impact* *Savings from reference scenario (%)* *Saving per functional unit*
Assumptions	*List of all key assumptions made in the calculations*
Data sources	*List of all key data sources used in the calculations*
Input adjustments and key considerations for usage of results	*Description of all input adjustments*
	List of things to consider if using results in other use cases
'Do no harm' criteria	*Justification that the solution does not cause significant harm in other ESG areas*

Twin Transition Roadmap Canvas

What is it?

Developed by the Royal Schiphol Group and PA Consulting, the Twin Transition Playbook aims to provide business leaders with the guidance and tools needed to build a successful twin transition strategy. To that end, this canvas allows companies to define why and how they want to start a transition that combines digitization and sustainability, thus ensuring that all the people involved are fully aligned towards the same goal.

Why is it useful?

This tool allows them to Identify and document their ambitions, scope, and time horizons as well as Identify their hotspots and define roadmap design principles to support alignment of thinking towards a successful twin transition.

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Twin Transition ambition and scope

Minimum required time: 30 min

1. Define your ambition by formulating:

• Why it matters

• Your one-sentence ambition statement

2. Scope your business based on:

• Regionality

• Operational units

3. Set your time horizons, split over:

• Near-term

• Mid-term

• Long-term

Twin Transition goals

Minimum required time: 60 min

1. Create an overview of your existing goals, based on:

• Corporate sustainability strategy

• Corporate IT / Digital strategy

2. Decide what to take forward into your Twin Transition:

• Set your Twin Transition goals (see examples below for

inspiration)

Twin Transition roadmap item

Minimum required time: 120 min

1. Identify possible use cases.

2. Assess, filter and select.

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Twin Transition ambition and scope canvas

Define Twin Transition ambition

Existing ambitions…

… around sustainability

… around IT / Digital

Twin Transition ambition

What is your Twin Transition ambition one-liner?
This should be a visionary statement describing the long-term change your Twin Transition should make, combining your sustainability and IT/data ambitions. Ideally it's more visionary than concrete, as it'll be used as inspiration to create practical Twin Transition goals.

Scope the business

Internal

Regionality	Operational units	Other clusters (?)
e.g., global versus focus on specific regions	*e.g., whole company versus a selection of independent operational units*	

Scope the time horizons

Time horizons

Near-term time horizon	Mid-term time horizon	Long-term horizon

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Twin Transition goals canvas

Sustainability Goals	IT / Digital goals
What are the current corporate sustainability goals?	What are the current corporate IT / digital goals?

Formulate your sustainability goals accelerated by digital

Twin Transition goal 1	Twin Transition goal 1	Twin Transition goal 1	Twin Transition goal 1

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Twin Transition roadmap item canvas

1. The next slide provides a framework to effectively estimate the impact on Twin Transition goals
2. In case you have too many items and need help to prioritise, there is a prioritisation canvas available in the appendix

Twin Transition roadmap items

Use cases	Does it impact a TT goal?	Greening by or of IT?	Use case origin	Impact estimate on Twin Transition goal 1 - 8			Cost Estimate	ROI Estimate	Ease of implement-ation	Use Case Maturity	Technology	Enablers		
				Avoided emissions	Added emissions and rebound effects	Net enabling impact						Transformation	Infrastructure	Intelligence
#	Yes/No	By / Of	Existing CapEx /OpEx new, eco-system	H/M/L	H/M/L	H/M/L	H/M/L	H/M/L	H/M/L	-	-	People, policies, partnerships and management practices	Physical investment needs, relevant across multiple items	Building blocks enabling software solutions
Example Use case	*Yes*	*Greening by IT*	*Existing OpEx*	*H*	*L*	*H*	*M*	*M*	*High*	*Multiple cases*	*AI, Cloud*	*IT / HR policies Education*	*5G network Sensors*	*Data quality and availability*
Use case 1														
Use case 2														
Use case 3														
Use case 4														
Use case 5														
Use case 6														
Use case 7														
Use case 8														

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Digital Ethics Canvas

What is it?

As a key to reduce ethical debt is to systematically assess ethical risks at all stages of the design and development process of, the Swiss Federal Institute of Technology Lausanne (EPFL) has developed a canvas to identify risks, to determine priorities and to design mitigation measures.

Why is it useful?

The canvas focuses on ethical risks with 5 ethical lenses specific to the digital domain:

- Welfare
- Fairness
- Autonomy
- Privacy
- Sustainability

The canvas includes questions to help students surface elements in a digital solution that are likely to give rise to risks. Mitigation options can also be contributed. Overall, the canvas implements a benefit-risk analysis which is adapted to approach ethical dilemmas.

The full canvas can be downloaded here.

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DIGITAL ETHICS CANVAS

CONTEXT

SOLUTION

BENEFITS

WELFARE

RISK

- Can the solution be used in harmful ways, in particular with regards to vulnerable populations?
- What kind of impacts can errors from the solution have?
- What type of protection does the solution have against attacks or misuse?

MITIGATION

FAIRNESS

RISK

- How accessible is the solution?
- What kinds of biases may affect the results?
- Can the outcomes of the solution be different for different users or groups?
- Could the solution contribute to discrimination against people or groups?

MITIGATION

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AUTONOMY

RISK

- Can users understand how the solution works and what its limits are?
- Are users able to make choices (e.g. consent, settings) in their use of the solution and how?
- How does the solution affect user autonomy and agency?

MITIGATION

PRIVACY

RISK

- What data does the solution collect
- Is it collecting personal or sensitive data
- Who has access to the data?
- How is the data protected?
- Could the solution disclose / be used to disclose private information?

MITIGATION

SUSTAINABILITY

RISK

- What is the carbon footprint of the solution?
- What types of resources does it consume (e.g. water) - and produce (e.g. waste)?
- What type of human labor is involved?

MITIGATION

Digital Ethics Canvas 2024 - C. Hardebolle, V. Macko, V. Ramachandran, Y. Do, N. Bartlomiejczyk, A. Holzer, P. Jermann

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Digital Ethics Compass

What is it?

The Danish Design Center has developed a Digital Ethics Compass to help companies make the right decisions from an ethical standpoint. The compass consists of different questions and recommendations. It's a simple and practical tool and learning program (a series of workshops) that enables companies to build an ethical foundation for their future financial growth.

Why is it useful?

The compass helps companies ask the right ethical questions to avoid the most common design errors. The compass, shaped like a circle, is available as a digital tool, and as a paper version and card set. In the centre of the circle are the most important design principles for ethical development of digital products:

- Put people first.
- Make your technology understandable.
- Avoid creating inequality.
- Give control to users.
- Prevent manipulation.

The full compass can be accessed here.

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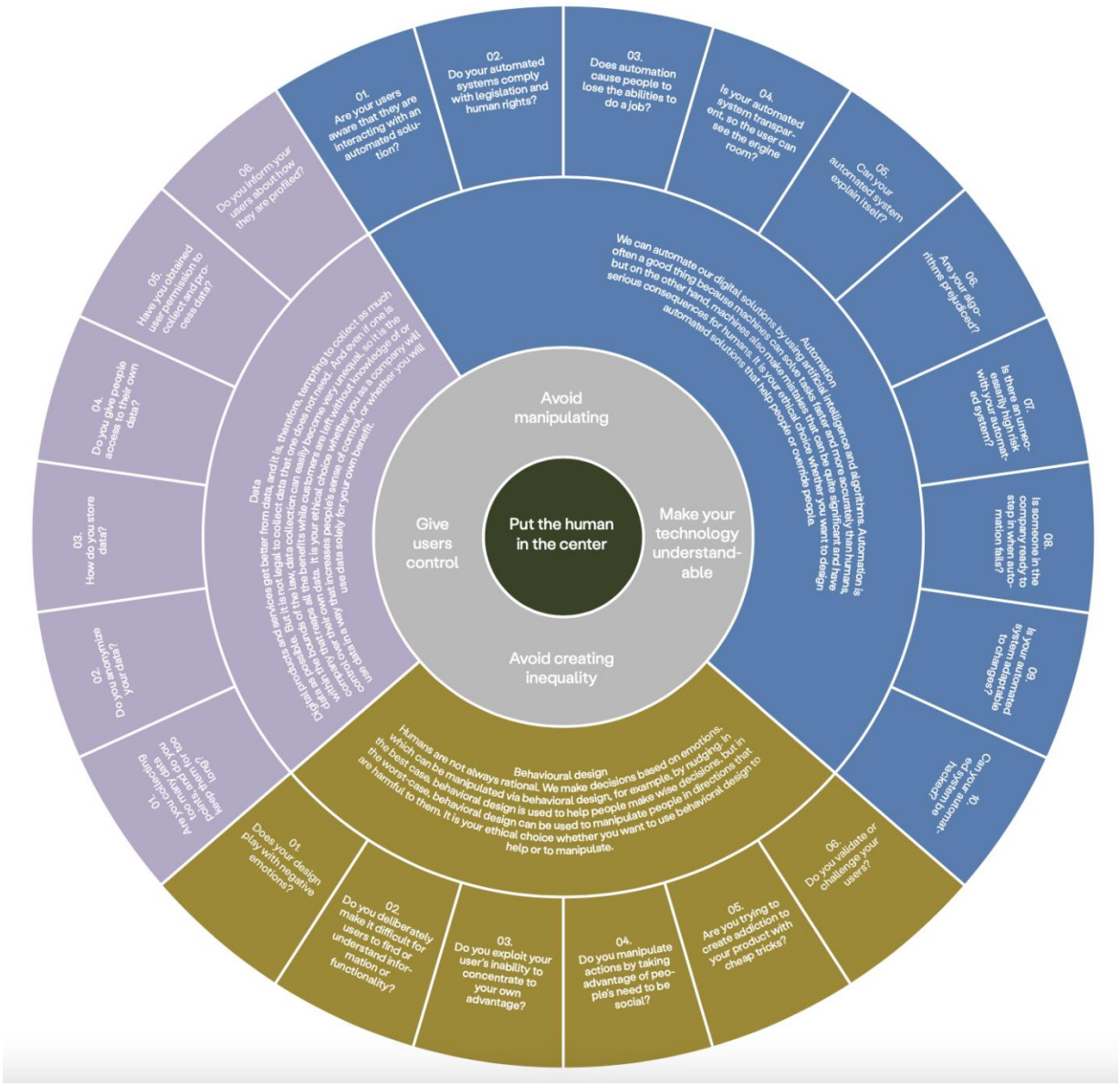

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Digital Transformation Assessment

What is it?

The Fraunhofer Institute for Production Systems and Design Technology IPK Berlin has designed and developed an online assessment where companies can determine the status of their digital transformation.

After they have completed a questionnaire, they will receive your company-specific evaluation online. The results will help them understand where they are on their digital journey. This will enable them to identify the main topics that are of particular importance for the digital viability of the company.

Why is it useful?

The assessment will allow companies to find out in which areas of digital transformation they are already well positioned and which areas still have optimization potential. To do this, they will use a variety of questions to determine your company's position in the following seven key areas:

- Corporate Strategy
- Leadership and Corporate Culture
- Organization and Processes
- Employees and Competences
- Technology
- Products and Services
- Supply Chain and Networks

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Who can participate?

- Everyone involved in the digital transformation at their organization.
- CEOs interested in digitally transforming their company.
- Managers who want to get insights in their company's status quo on digitalization and potential for improvement.
- Organizations and companies of all industry sectors.

Answering the questions takes about 10-15 minutes, and the full assessment can be accessed here.

Companies also have the option of registering for benchmarking after the evaluation has been completed. This will provide them with valuable insights on how they compare with competitors in their industry. Since the survey is conducted on a global scale, they will also receive results that reflect their position in an international comparison.

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DIGITAL TRANSFORMATION ASSESSMENT

Fraunhofer IPK

ENRICH EUROPEAN NETWORK OF RESEARCH AND INNOVATION CENTRES AND HUBS, BRAZIL

ENRICH EUROPEAN NETWORK OF RESEARCH AND INNOVATION CENTRES AND HUBS, CHINA

ENRICH EUROPEAN NETWORK OF RESEARCH AND INNOVATION CENTRES AND HUBS, USA

CENTRE OF EXCELLENCE EPIC Production Informatics and Control

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System map canvas

What is it?

The system map is a visual representation of the system behind the innovation, whether it be a service or a product. It helps take on a systemic view of the solution and see connections between the different actors that might otherwise not have been perceived.

It also maps out the flow of materials, energy, information and money throughout the system.

Why is it useful?

This map helps understand where possible opportunities might lie to increase value, efficiency and/or efficacy.

The System Map can mainly be used in understanding the system. Visualization helps understand the connections between the different actors and it can help make the identified solutions/activities work.

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How to use it?

Duration: 60 minutes • Materials: Blank Canvas – printed or online ; Post-its and pens • Group size: 8+ people

Step 1: Write down the challenge statement for the service, product or complex problem in the center of a worksheet. Try to be concise, but not too narrow in the description.

Step 2: Using post-it notes, jot down the main actors/stakeholders (e.g. users, clients, front-end staff, etc.) of the system and put them in the center of the template. Do the same for secondary stakeholders (e.g. suppliers, partners, etc.) and place them in the outer ring.

Step 3: Choose and assign icons for each stakeholder. These can be found online in free databases or sketch them or use digital sketching technology. In doing so, try to include three elements for each actor: a structure to represent the actor (e.g. local shop, town hall, association, industrial company, etc.) which should be standard for all actors (i.e. if you have more than one town hall involved, the structure icon for town hall remains the same while the output and title will/could change); a defining characteristic of the actor's output (e.g. transporting goods, producing goods, delivering services, etc.) and a title (e.g. logistic provider, local shop, etc.). Main stakeholders should be big and secondary ones smaller.

Step 4: Now, create arrow types for the different material, energy, information and money flows throughout the system.

Step 5: Now complete the system map! Arrange the actors in their circles and describe what activities, processes and exchanges are occurring to make the solution work.

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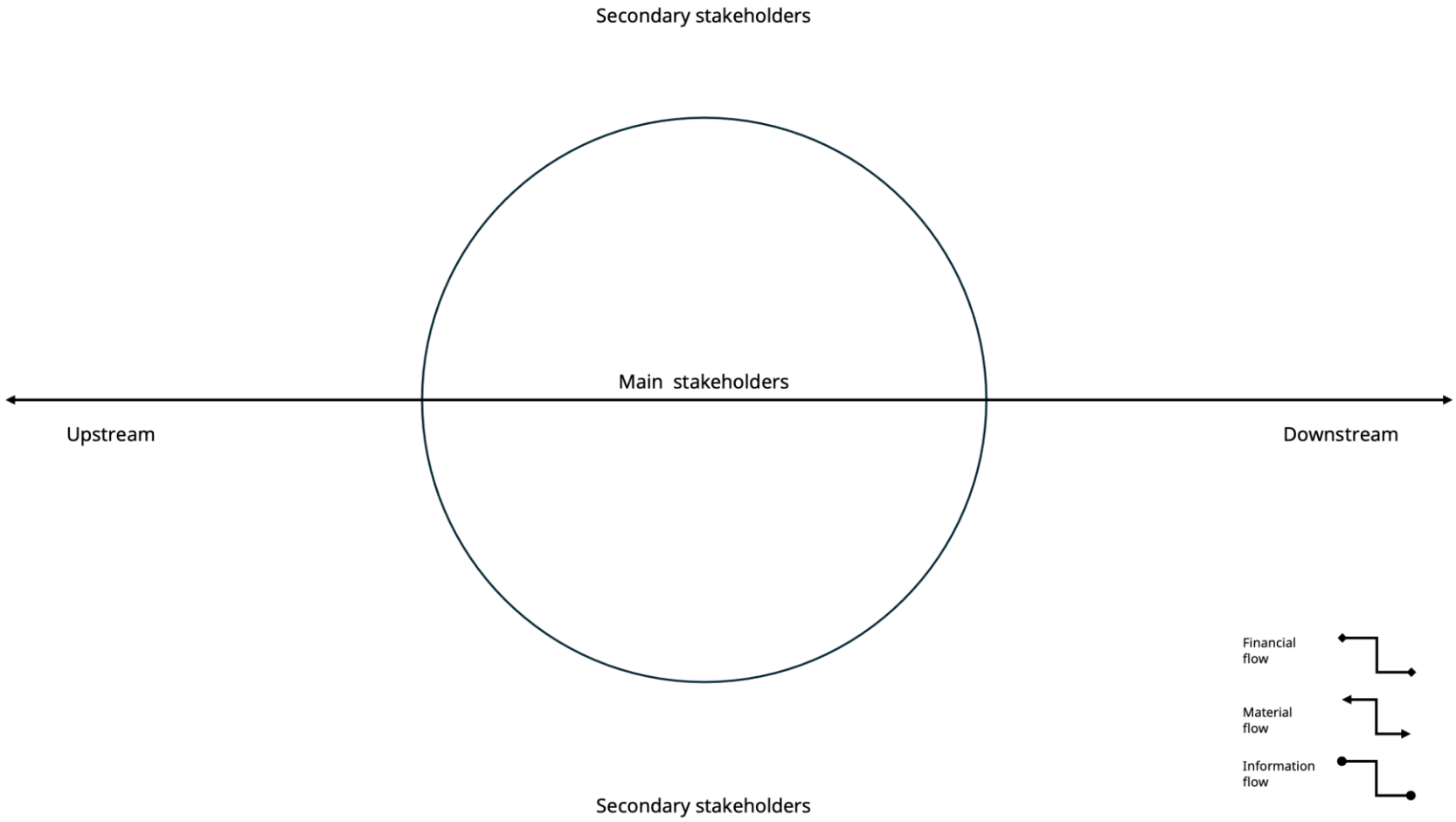
System map canvas



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Actor map canvas

What is it?

The Actor map tool aims at identifying and mapping stakeholders based on the sector they belong to and on their level of importance.

It should be used at the beginning of a project and can be repeated several times during the project cycle to adapt the group if needed to observe changes that have occurred. It is a visualization tool used to identify stakeholders you are trying to reach.

It is a tool for mapping actors that surround the project/new venture and those that could potentially become a partner, user or supporter. These might include people, communities, funders, networks, among others. All of these groups can represent a resource to the venture innovation and goals.

Why is it useful?

A way to discuss & agree together on the concept of “importance”. It can be repeated by several groups to cross-check results .

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How to use it?

Duration: 40-60 minutes • Materials: Blank Canvas – printed or online ; Post-its and pens • Group size: 8+ people

Step 1: Define relevant sector. Place the ecosystem map (it looks like a spider web with concentric circles) on the wall. In each segment, place a sector that is important to the plan such as water, construction, mobility. It could also be Choose sectors that are relevant to your cluster.

Step 2: Define stakeholders and their position on the map Think of the key stakeholders, which part of the value chain they belong to, and how important they are. Within the group, discuss and agree on the position of each stakeholder. Place your stakeholders on the map, using post its.

• In the center circle are your most important stakeholders (primary)

• On the outer circles are stakeholders that could be important but don't need to be permanent members of the multistakeholder group (secondary)

This review will give you a relevant starting point to discuss which relationships or connections there are key, and which may need extra attention.

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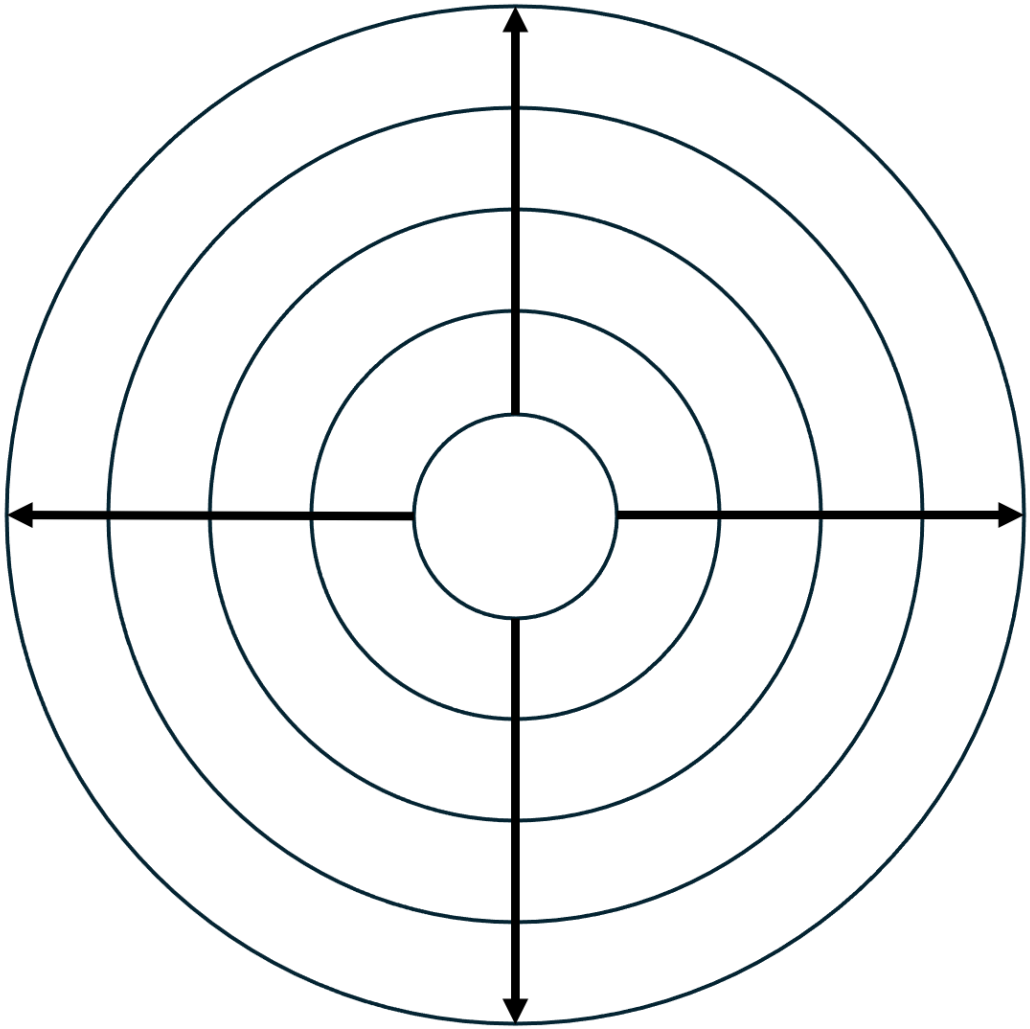
Actor map canvas



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Applying systems innovation to your business Cheat Sheet

Innovation is fundamentally about solving problems and creating value in new ways. It requires understanding the needs, challenges, and opportunities of different contexts and systems, and designing solutions that are effective, efficient, and sustainable.

- **Define the system boundaries and scope**: Identify the challenge your business is facing and define the system boundaries and scope of this challenge.
- **Map Out the system elements**: Identify the elements, relationships, and feedback loops that affect your challenge.
- **Analyze the system behavior and structure**: Identify key drivers, constraints, and assumptions in your system.
- **Design interventions**: Address system causes rather than symptoms. This involves designing interventions that take into account system effects rather than just intended outcomes.
- **Test and evaluate your interventions:** Use system indicators and metrics to test and evaluate your interventions, adapting them based on feedback and learning.
- **Acknowledge the uncertainty and ambiguity:** Embrace the nonlinear, emergent, and unpredictable nature of complex systems.
- **Experiment with different ideas and prototypes**: Monitor signals and patterns of change in your environment, foster diversity and collaboration among your team and stakeholders.
- **Seek for emergent outcomes and value propositions**: Be ready to scale or pivot them as needed.

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Innovation ecosystem canvas

What is it?

An innovation ecosystem is a network through which a set of diverse actors interact to enable constant innovation outcomes in a given domain.

In this canvas, we expand upon primary considerations such as the elements, relations, synergies, the overall function, the value model, scaling engine, and impact assessments that are relevant for whole systems change.

Why is it useful?

As a cluster manager, integrating positives synergies between members for them to become more productive as a whole community is a key objective.

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How to use it?

Duration: 40-60 minutes • Materials: Blank Canvas – printed or online ; Post-its and pens • Group size: 8+ people

Step 1: Define the system - What is the system? What is the common infrastructure, the set of resources and services that could enable the community to function as a whole better? What is the overall function of the ecosystem?

Step 2: Describe Roles - What are the different functional roles in the ecosystem?

Step3: Define Exchanges - Innovation ecosystems enable and facilitate the fluid exchange between members. What kind of exchanges will this platform enable?

Step 4: Describe positive and negative synergies - Where in the system are there negative synergies i.e. conflictual relations? What do they look like? Where in the network are there positives synergies i.e. collaborative relations? What do they look like? How can we turn the negative synergies in to positive synergies to get cooperation in the system?

Step 5: Frame learning - What is the learning engine that will enable the community to learn collectively, develop and share new knowledge?

Step 6: Scaling up - What is the scaling engine that will drive the ecosystem development over time?

Step 7: Assess potential impact - How can we assess for the impact of the ecosystem?

Step 8: Address Investment - How will we define the portfolio of new initiatives that we want to invest in?

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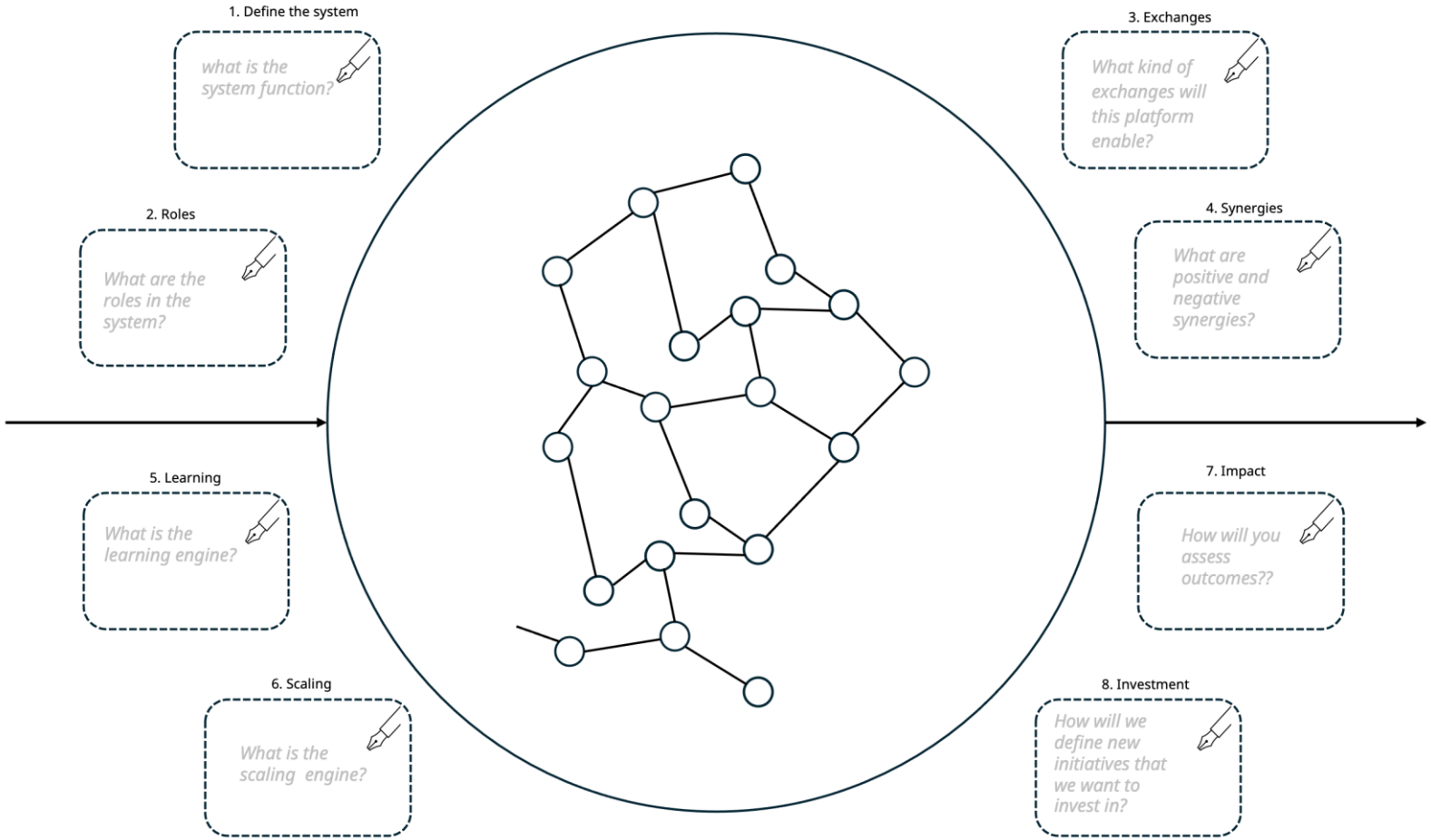
Ecosystem canvas



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Network analysis canvas

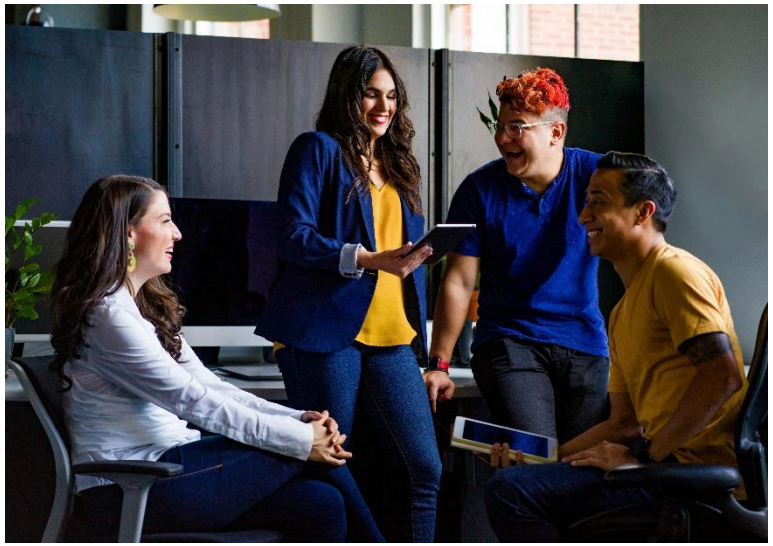
What is it?

This canvas is designed to aid us in the analysis and understanding of a given business network. Key questions we will try to answer include: who are the most important nodes in the network? What is the overalls structure of the network, how centralized or decentralized is it?

How equally are the connections in the network distributed out, i.e. do some nodes have very many connections will others have few? Finally, we try to understand how something may spread across the network.

Why is it useful?

Such analysis can be useful to understand how a new venture can operate within a given ecosystem. It allows to identify key nodes (actors in the network) and will help develop strategies to make the most of the ecosystem.



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How to use it?

Duration: 40-60 minutes • Materials: Blank Canvas – printed or online ; Post-its and pens • Group size: 8+ people

Step 1: Draw out your network of nodes (actors) and connections.

Step 2: Characterise node centrality. A primary question people wish to answer when analyzing a network is that of how influential or significant a given node is within the overall network – this is called "node centrality." For example, we might want to know, who is the most influential business within an industry. This can be done by

- ⇒ Measuring the direct number of connections the node has
- ⇒ How close a node is to any other node, i.e. how easily the node can reach other nodes
- ⇒ defining the node's role as a connector or bridge between other groups of nodes

Step 3: Analyse the level of centralisation. Look at how the connectivity is distributed out among the members. Is this a centralized network with a few having many connections while others have few connections or is it a decentralized network where all have relatively the same number of connections?

Step 4 : Network dynamics. Think about the network dynamics, what are the rules under which it was created? How did this network form? How is it currently developing?

Step 5: Network diffusion. The network's structure is a key consideration in understanding how something is likely to spread across it. How would some new phenomenon spread across the network, what would enable the spreading? What would resist it?

Step 6: Network Resilience. How resilient is the network? What will happen to the network's overall connectivity and integration if we remove some components or connections? Equally, we can ask how will this failure then spread within the overall network?

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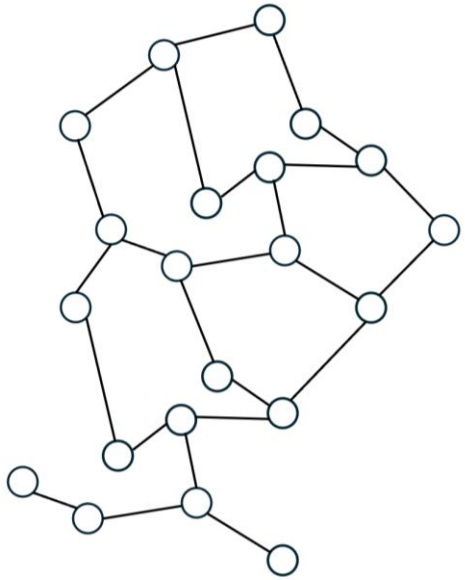
Network analysis canvas

Centrality
Which are the most important nodes

Decentralisation
Is the network centralised or decentralised?

Resilience
How resilient is the network to alterations?



Distribution
How evenly distributed is the network?

Dynamics
How is the network growing?

Diffusion
How is information flowing in the network?

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