D8.12 – Project Business Plan

Year 2

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Table of contents

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01	INNOVA	26/01/2019	Initial draft with structure
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03	AIDIMME, FEVAMA, DOMINA, PIACENZA, LTU, POD, LIND, WHR	15/03/2019	Integration of business models for platform owners
04	INNOVA	31/03/2019	Finalization of all sections of the document
1.0	SRFG/AIDIMME	01/04/2018	QA and Submission

1 Executive Summary

The present document reports on the outcomes of all WP8 activities (in particular Task 8.7) aimed to develop a sustainable business plan for the NIMBLE platform. It is an evolution of the previous version of the business plan document (D8.11) and it capitalizes on the main analysis and findings reported in D8.15 (Exploitation report) and further activities in WP8, including an update/revision of the NIMBLE value propositions and additional analysis of the four project business cases based on an existing Platform Design Toolkit[1]. As planned in the DoW, this is not the final version of the business plan, which will be completed by the end of the project.

The NIMBLE project is developing a novel, cloud based and easily accessible digital platform that facilitates the establishing of dynamic supply networks for the identified stakeholders in future collaborative manufacturing sectors.

The resulting NIMBLE Platform can create value according to the following main business drivers.

- provide users with sets of easy to use and easy to access, cheap and standardized tools and processes.
- allow users to create and harness mutual synergies from each other promoting business and information transactions
- as more users are participating on the platform, the resulting synergistic benefits amplify and grow disproportionately (aka network effects).
- NIMBLE can handle both Informational Supply Chain Platforms and commercial channel Platforms. Informational Supply Chain Platforms are foundational sets of technologies and processes promoting the access to commercially relevant channels.

Moreover, the NIMBLE innovation potential is enhanced by the following competitive factors:

- *Opportunity*; i.e. the market context where NIMBLE operates (trends, drivers, customers' expectations) is very favorable: the Industry 4.0 driver is pushing the organizational and technological change in traditional manufacturing SMEs operating in non high-tech sectors;
- *Value added*; i.e. ability of the NIMBLE solution to address the existing unmet needs.
- *Competitive landscape*; i.e. lack of existing/potential competitors with similar targets.
- *Unique selling points*; i.e. the main factors that will make NIMBLE solution to be effectively launched in the market.

The analysis on the last developments of the NIMBLE platform confirmed the assumption made in D8.11:

> *As a main differentiation, NIMBLE will develop a solution that can bridge between horizontal B2B marketplace and novel Industry 4.0 technologies. In this, NIMBLE aims to develop a next-generation digital platforms for the manufacturing sectors. This strategic exploitation could be deployed either by focusing initially on one sector (e.g. Wood with the Furniture Manufacturing Platform) or licensing out the platform to a variety of vertical manufacturing sectors.*

In terms of special features of the platform, we can highlight:

[1] https://platformdesigntoolkit.com/

The possibility to deploy a federated set of platform instances is a real distinct value of NIMBLE. The federated approach allows a sectorial, regional specialization approach for growing (bottom-up approach) and, at the same time, it can support governance with a clear sectoral leadership or the involvement of intermediaries as orchestrators/rulers of their ecosystems for the other verticals. This is a clear alternative to existing monopolistic approaches of existing digital platforms.

The permissive open source approach and the standards (taxonomies/ontologies) are its core. This will attract providers and/or SMEs that want to be providers and aiming at :

- *benefiting from a ready-to-use solution;*
- *using and customizing it as they wish;*
- *enjoying the possibility to interoperate with other platforms/solutions using the same standards.*

Based on these elements, key exploitation success factors will be related to the market eco-system selection and the identification of the business leadership. The take-up of the specific digital platform is fostered by increasing the ecosystem of players involved in using that platform. The NIMBLE Platform exploitation leaders will build the market opportunity to develop services/applications with significant economic and societal value.

To this end, NIMBLE aims at:

- *providing attractive, easy to use services first; in particular enabling to:*
  - *find a suitable supply chain partner for a product*
  - *involve logistic service providers' firms*
  - *facilitate the negotiation of terms*
  - *facilitate the reach of consensus during a contract negotiation*
  - *carry out and monitor the transaction deployment*
- *reducing entry hurdles for multi-side actors, including:*
  - *self-serve on-boarding*
  - *incentive for network effects*
- *offering a win-win value proposition for participant*
- *enacting pro-active governance to keep the ecosystem of actors in balance*

NIMBLE exploitation routes could be deployed following a number of alternative approaches depending on the commercial and organisational leadership of the partner(s) which are likely to invest in the Platform to exploit the quality of the business idea and the economic and non-economic returns. In this view, the possible exploitation alternatives are based on the actual leadership takeover and on the vertical vs general focus.

Specifically, the possible options at this stage could be summarized as followed:

1. Licensing out the whole NIMBLE platform as an Open Source and:
   a. A single partner (internal/external) will take the business leadership, deploy a new NIMBLE platform instance and license out to SMEs in **various vertical industries.**
   b. A single partner (internal/external) will take the business leadership, deploy a new NIMBLE platform instance and license out to SMEs in a specific vertical, as AIDIMME and FEVAMA are currently already pursuing for the **Furniture sector** (WP10)**.**
   c. A single partner (internal/external) will take the business leadership and will create **one dedicated European Company** for driving and coordinating the commercialization of the NIMBLE platform.

2. The Consortium as a whole promotes a NIMBLE Federated Platform
    a. Consortium leadership and licensing out to diverse distributors for profit;
    b. Creation of a **European Association** (non profit) promoting free/open use.

Consortium partners agreed that the first option (with the different sub-options) is the main exploitation route, although further investigations will be performed to check how to guarantee a federate approach and the relative governance across multiple NIMBLE platform instantiations.

Based on this current understanding, we will not develop a business plan for the joint commercial exploitation of the NIMBLE platform. Instead, to ensure effective NIMBLE platform exploitation, INNOVA proposed to the project use case partners the possibility to develop their own digital platform strategy, based on the open source NIMBLE solutions. The methodology for defining the platform strategy is based on an existing set of templates, named Digital Platform Toolkit[2], which was introduced in D8.10 as part of the NIMBLE Platform launch manual.

As a result, starting from some of the 10 business cases reported in D8.15, the project partners developed 5 distinct platform strategies that are summarized in the following Platform Design Canvas. These business analyses are the starting points for the development of distinct platform instance-*specific* business plans.

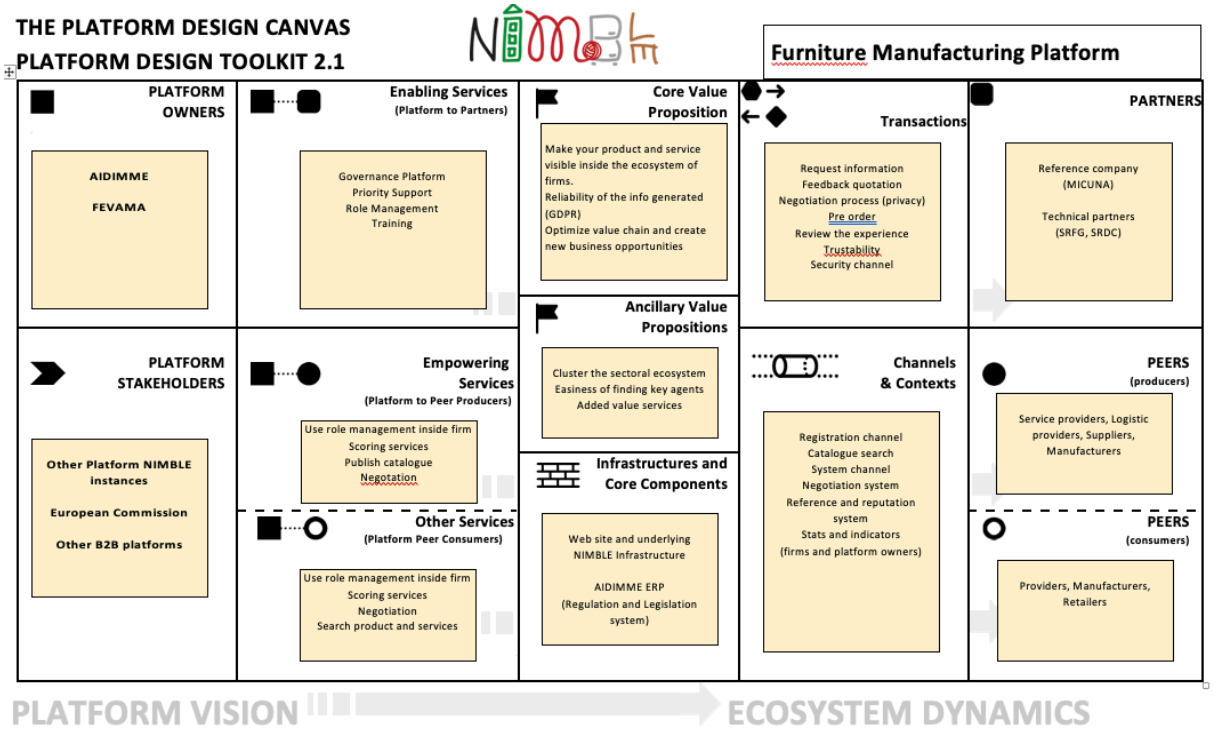


Figure 1 - FMP Platform Design Canvas

[2] https://platformdesigntoolkit.com/

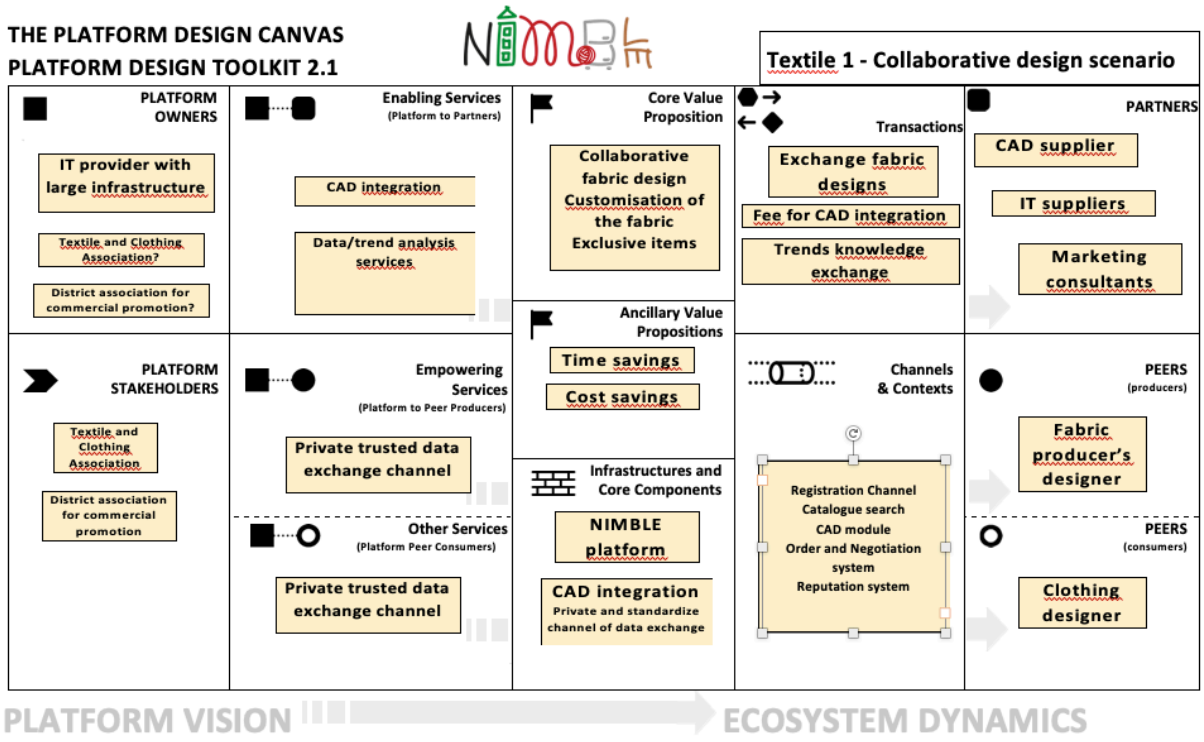


Figure 2 - Textile Platform Design Canvas, Collaborative Design Scenario

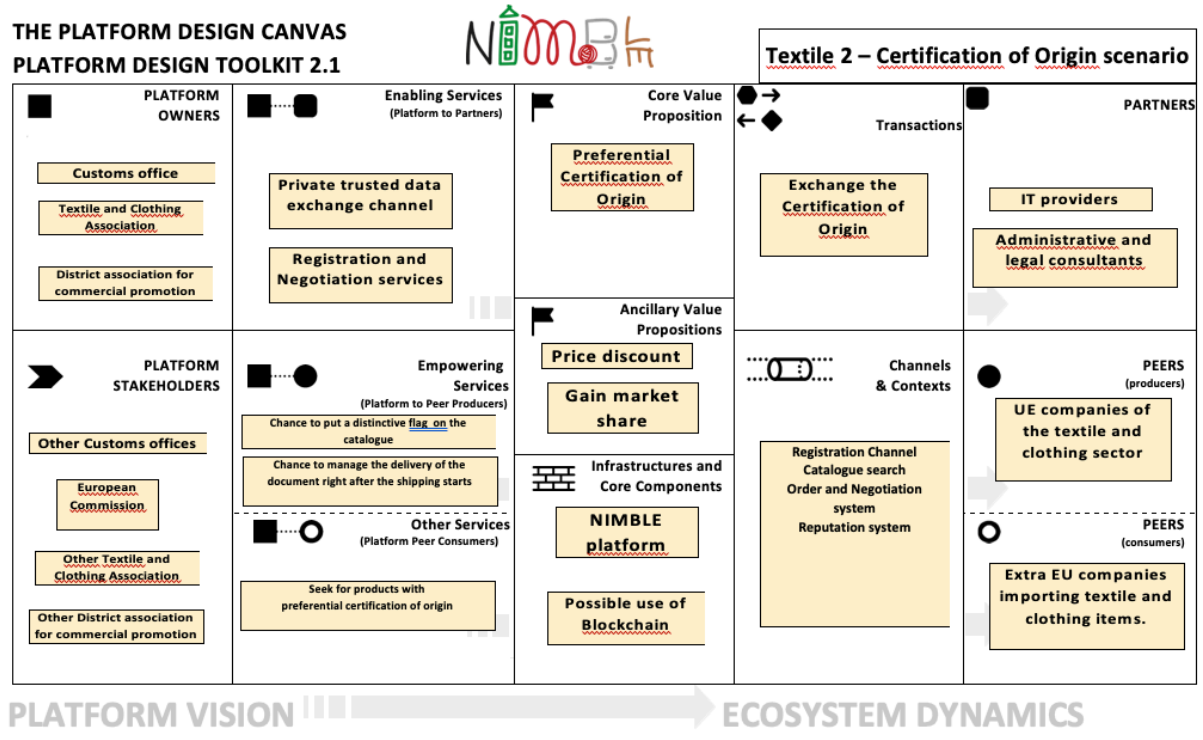


Figure 3 - Textile Platform Design Canvas, Certification of origin scenario

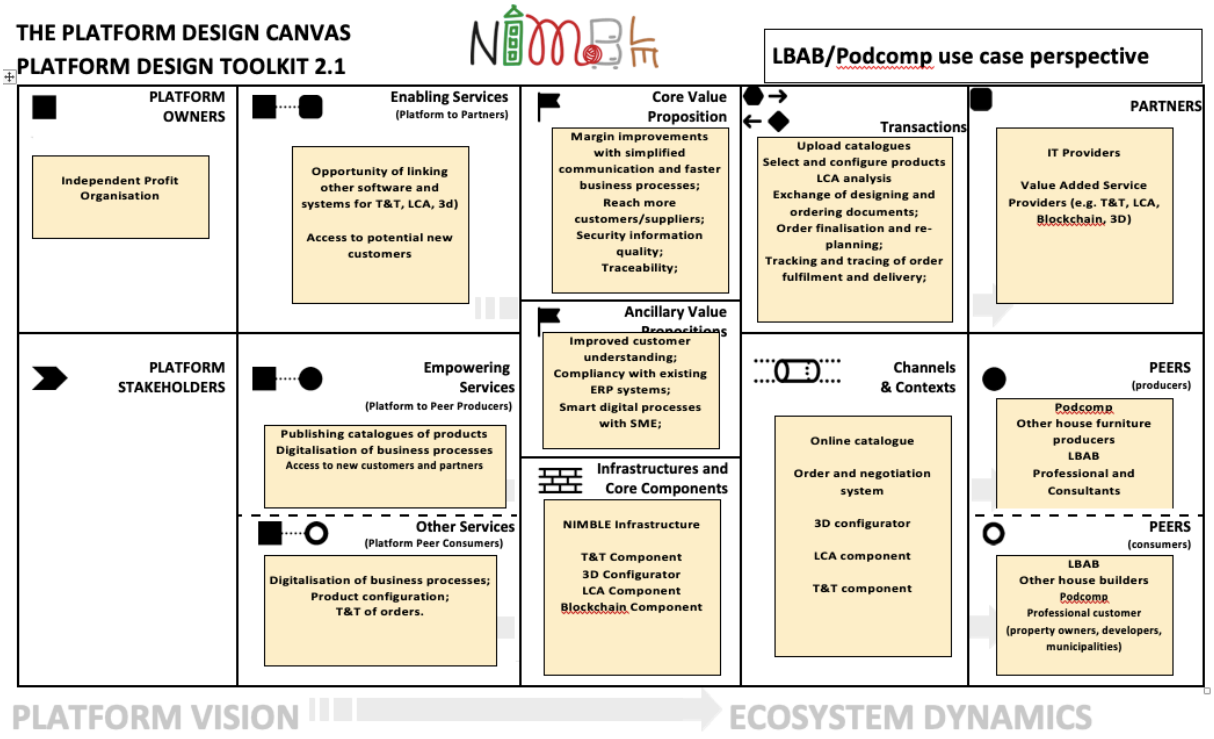


Figure 4 - Eco Houses Platform Design Canvas

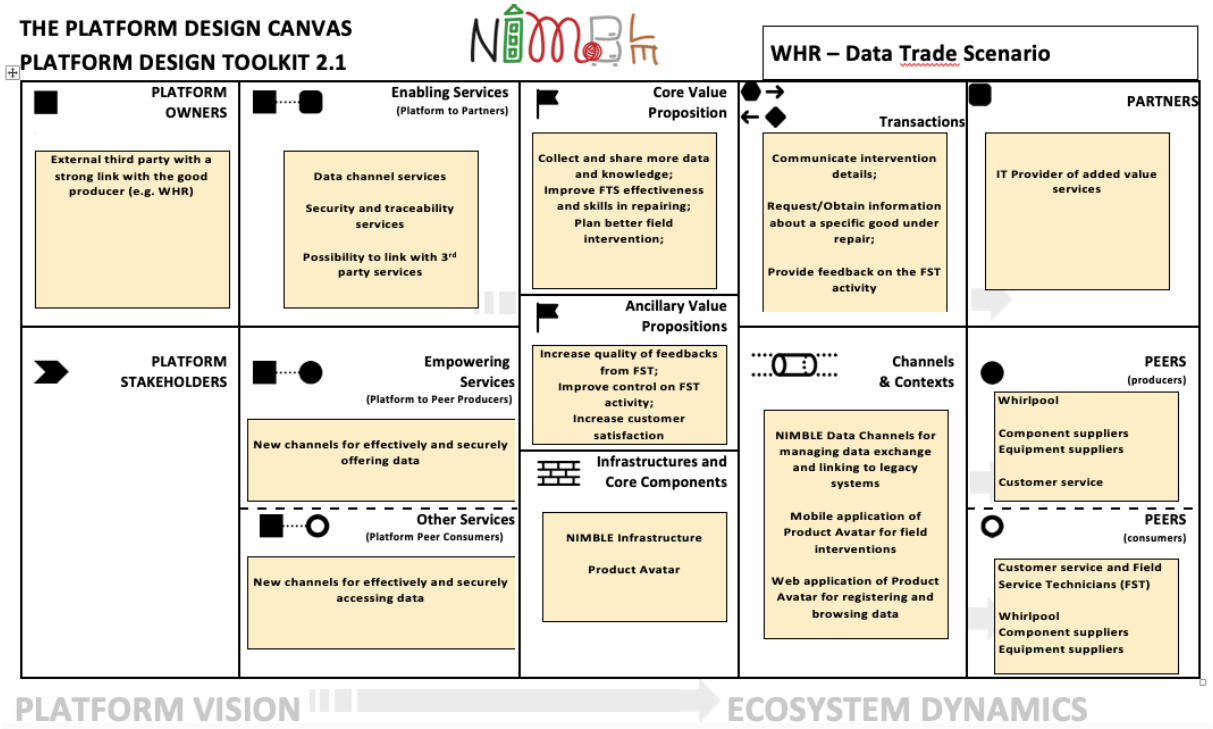


Figure 5 - White Goods Platform Design Canvas

2 Introduction

The present document reports the outcomes of all WP8 activities (in particular Task 8.7) aimed to develop a sustainable business plan for the NIMBLE platform.

It is a live document that will be continuously updated and refined throughout the project, where the final version (due at M39) will contain the actual NIMBLE business plan.

In this second phase, we are mainly focused on:

- validating with partners the analysis of the NIMBLE exploitable results, innovative aspects and possible business models and exploitation strategies reported in D8.11 and D8.15. This leads to some minor updates of contents summarized in Sections 3, 4 and 5.
- further developing the project business cases, also considering the decision of project partners to focus on an open source exploitation strategy for the NIMBLE platform; i.e. without a joint commercial exploitation strategy. This leads to the adoption of a specific toolkit and methodology for developing platform strategies that has been proposed and tested with use case partners as described in Section 6.

It is worth to highlight that the performed work is closely related to activities within the SEED Programme task (T8.5) and particularly to deliverables D8.9 (feasibility and assessment toolkit) and D8.10 (platform launch manual).

As planned, the work in Task 8.7 will continue in the final period of the project (M30-M42), in order to:

- define business plans of single NIMBLE Platform instances out of the business cases reported in this deliverable;
- specify how the federate approach of NIMBLE could be assessed/sustained after the end of the project with a lean structure that may link the different created peers.

3 NIMBLE Platform

The NIMBLE project is developing and validating a novel cloud-based, and easily accessible platform that will facilitate the establishing of dynamic supply networks for classes of stakeholders in future collaborative manufacturing.

Specifically, the resulting platform will be a *manufacturing B2B service delivery framework*, which at the same time will be *interoperable*, *smart* (proactive), *open* (extensible/adaptable), *trustworthy and secure*.

The NIMBLE deployment will open up possibilities to exploit cloud infrastructures using SaaS and PaaS paradigms for platform providers to form a *federation* of NIMBLE platforms and give different sectors or regions a platform for B2C, B2B and manufacturing collaboration that can be customized for them.

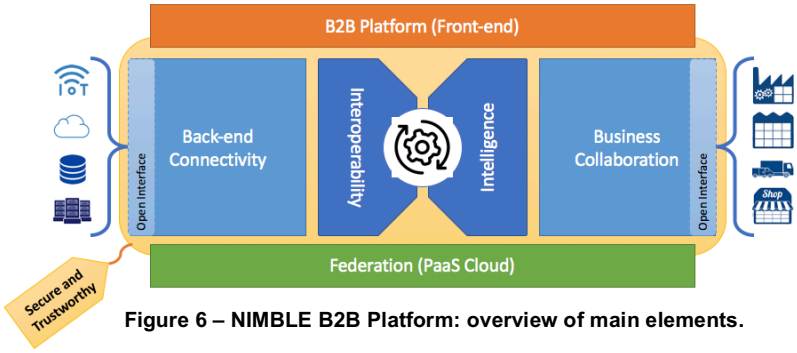


Figure 6 – NIMBLE B2B Platform: overview of main elements.

Moreover, developers may interact with the platform by using a **comprehensive API set**, giving them the possibility to extend the core services of the platform with valued added services and new tools for platform customers. The API set will include access to back-end capabilities, but also business collaboration and federation interaction will be made possible via APIs as well. Specifically, new value-added services can be published in the platform as part of a **cloud service marketplace,** in order to be used on the platform and generate revenues for the developers (3rd party service providers).

3.1 Envisioned platform sides and roles

NIMBLE is a multi-sided - i.e. bringing together several vendor and buyer communities -, federated – i.e. linking local and/or sectorial verticals -, open – i.e. open source - digital platform and thus the following main roles and interactions need to be taken into consideration:

Platform orchestrator(s): the manager of the platform driving the strategic and operational framework, stakeholder interactions and the architecture of the platform and the resulting ecosystem. In view of a *federated approach*, we may expect multiple platform orchestrators, each focusing on a dedicated industrial region, cluster or branch.

Therefore, we can also expect the role of **Platform operator**: the actual NIMBLE service provider, hosting the platform and enabling multiple orchestrators to run their businesses independently and, if relevant, linking among them (e.g. multi-tenancy, PaaS approach).

It is worth highlighting that given the Consortium's decision to focus on a permissive open source approach and, thus, the possibility for any organization to start a new business based on a new NIMBLE Platform instance, the roles of platform orchestrators and operator can be merged into one unique role that from now on we define as **Platform Owner**.

Platform infrastructure supplier(s): the technical infrastructure providers (communication, IT, software, systems integration, and developers) who build, manage, monitor and deploy the underlying technology of the platform. They may or may not correspond to the platform operator and generally there could be many of them, each focusing on different technical aspects.

Moreover, in view of an *open platform*, we can also expect the role of **Platform tool and service developers**: technical organisations that are interested in the creation of added-value tools and applications to be added to the platform (e.g. starting from the platform core services/APIs).

Platform end-users: i.e. manufacturing companies – in particular SMEs, but also OEM (Original Equipment Manufacturers), large manufacturers, service providers - connecting to the platform to seek (consumers) or offer (producers) services or products.

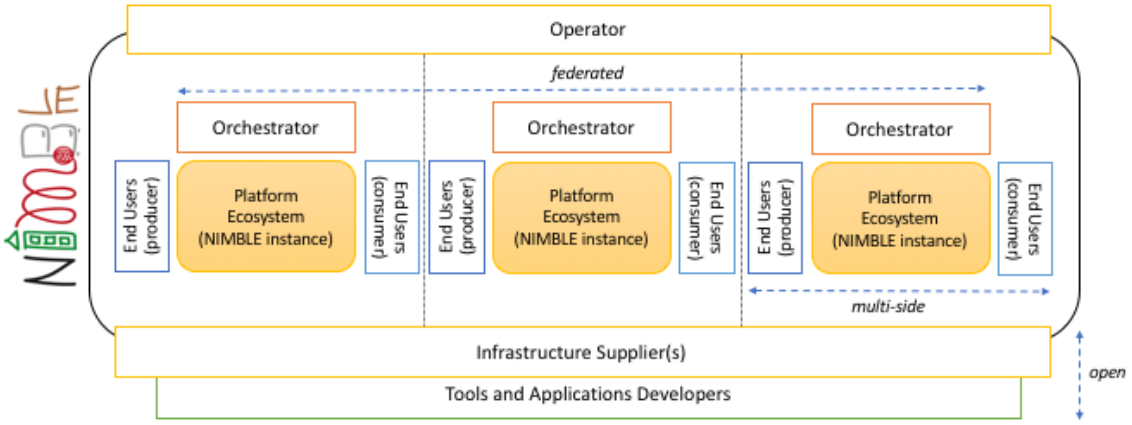


Figure 7 - Platform ecosystem(s) roles and interactions

3.2 Target User Groups

As introduced in the previous section, the platform enables NIMBLE stakeholders to take very different roles across the ecosystem and any one actor can play multiple roles within a platform ecosystem – or even different roles across multiple ecosystems simultaneously.

In D8.11, we reported on a comprehensive analysis of the different, relevant target groups for NIMBLE, including:

1. Manufacturing supply network stakeholders;
2. Manufacturing B2B service providers and intermediaries;
3. Digital platform and infrastructure providers;
4. Technology and Service Providers.

At this stage, based on the latest exploitation and business development activities and decisions, we can report that the **actual primary target groups for the platform exploitation** are the target groups 2) and 3), since they have the interests and motivations of becoming - or extending their current role of – Platform Owners (or Orchestrators). They will be then in charge of identifying the specific Platform End Users (target group 1) and Supporting Partners (target group 4) for their specific platform.

In this view, we just report below the tables with the expectations and the segmentation of those two target groups. The full description is available in D8.11.

Manufacturing B2B service providers and intermediaries

Table 1 - Manufacturing B2B service providers' and intermediaries' expectations

Needs/Expectations	Current Behaviour
Scout and engage valuable business organizations and support them properly.	Advertise and market the provided services; Visit fairs and exhibition; Participate in workshops; Access to networking websites for professionals.
Increase the number of members that join their	Create their network/ecosystem website;

network/ecosystem, including customers/members located in geographically distant areas (i.e. not only local firms).	Participate in sectorial fairs and exhibitions, workshops; Advertise and market the network/ecosystem activities through newsletters, campaigns, etc. Access to networking websites for professionals.
Facilitate the exchange of information among customers/members.	Use emails, chats, audio and video call applications and teleconference applications; Use communication platforms; Arrange dedicated physical events.
Perform matchmaking among customers/members to create new business opportunities for them.	Seek and read customers/members' profiles and brochures in order to find possible connections; Use emails, chats, audio and video call applications and teleconference applications to enable the meeting among selected organizations; Organize ad-hoc workshops and events.
Statistical analysis of activities/sectors at a micro (local) and macro (global) levels of the network/ecosystem.	Consult the online databases of the statistics offices and use their online statistical tools; Download data from the online databases of the statistics offices and analyse them; Interviews for customers/members for collecting local data.
Disseminate material, suggestions, strategic guidelines, training and best practices.	Publish on specialised journals, newspapers, magazines, websites; Promote and organize workshops.

Table 2 - Manufacturing B2B service providers' and intermediaries' segmentation

Segment	Description	NIMBLE priority
Private B2B service and platform providers, such as: http://holz.fordaq.com/ http://www.mercateo.it/ https://www.3dhubs.com/ https://www.tradegecko.com/	Their aim is to support their customers in expanding their business, by linking them to possible partner and/or develop a supply chain for them. They can be vertical (sector-specific) or horizontal. Some of them already developed a web platform for browsing organizations or, in some advanced cases, matchmaking requests with offers and added-value services. They are funded by their customers.	As private entities, they can have resources to invest in order to make more advanced and appealing their offerings with NIMBLE solutions. Therefore, this can be a **key segment** for the project. According to their dimension, they could be interested to be an orchestrator or the operator.
Industry trade associations and corporations	Their aim is to offer promotion, internationalization and business opportunities to their members. They are vertical on a specific industry sector. Usually, they are national association, but they have regional/local units that are quite autonomous. They also have EU level representatives. They are quite traditional in terms of business service offering (i.e. not using advanced ICT solutions), although the innovation level could change from region to region (e.g. North Europe countries could be more advanced on their offering). They are funded by their members.	Similarly to the previous segment, they can have budget to invest in innovative solutions, but it should be demonstrated a clear benefit for their members. In some cases, the investments should be approved by the respective management boards. In any case, we can user them as a mean to promote NIMBLE to their members. Therefore, we can consider this as a **very relevant segment**, although the actual engagement with them could be quite slow and elaborated.

National, Regional and Local innovation and business development agencies	They are the public funded agencies that aim to create awareness, facilitate the development and in some cases implement the EU and National policies about business development. Usually they are horizontal on many sectors (although there could be some sector-specific units).	One key element of recent policies is the digitalization of SMEs, therefore they can be very interested to enhance their offering with some of the NIMBLE services. In any case, they can act as NIMBLE promoter. Therefore, we can consider this as a **relevant segment**, although, given that they are public funded, the actual budget availability can be different from region to region (depending on the National funding directives and investments).
Technology-specific (SMEs) communities and cluster	In this segment, we can consider all initiatives/networks that links different companies (in particular SMEs) that share a common industry sector or an area (e.g. technology parks). Differently to industry associations and corporations, they are less structured and usually don't have large budget to manage. Their main objective is simply to link and share information among members. In some cases, they are funded by the members (usually the fee is quite low).	Given their budget limitations, they can mainly act as promoter of the NIMBLE solutions. Therefore, we can consider them as a **good segment**.

Digital platform and infrastructure providers

Table 3 - Platform and infrastructure providers' expectations

Needs/Expectations	Motivations
Reduce the cost for complement/extend their current platform/cloud offering. Abstract underlying technology complexities (e.g. IoT, data heterogeneity, standardization, etc.).	Software companies are not willing to start new developments or technologies, without a clear opportunity/demand, such as a paying customer. However, this approach usually leads to private, ad-hoc solutions with limited opportunity to be re-used. Ready to use, advanced solutions, based on mainstream technologies, can attract software companies that are willing to enter a new market.
Revenue sharing in the marketplace.	Hosting a dynamic business ecosystem is not only a way of ensuring a higher demand of services and resources for a platform provider. The one-stop shop mechanism provided in marketplaces will attract service providers to develop and deploy applications in the platform. A revenue sharing mechanism could help platform providers to retain a part of the incomes generated by the different stakeholders in the value network. This additional revenue streams may represent an important source of revenues for the platform
Platform extensibility / adaptability.	The available market of digital platforms is highly dynamic, and there will be always customers requiring different/additional features. This calls for the provisioning of easily adaptable and extensible

	technologies, as well as the possibility to involve third parties' technology/service providers.
Scalability on demand.	In the digital platform era, this is a pre-requisite. Platform providers aim to target the global market, but with a gradual, incremental approach. First phases will focus on early adopters to test the effectiveness and viability of the platform, then there will be a fast (as fast as possible) growth of the user base.
Control and monitoring of deployed solutions	Trustworthy platforms should guarantee precise levels of service operations, e.g. including availability, security and privacy, traceability. Therefore adequate control and monitoring mechanisms need to be available.

Table 4 - Platform and infrastructure providers' segmentation

Segment	Description	NIMBLE priority
System Integrator	They aim at developing vertical solutions; i.e. customised solution for a customer or domain specific systems, such as ERP, Supply Chain Management, IoT and Industry 4.0 systems. Systems may range from limited data collection and analysis to comprehensive end-to-end application solutions. As a dimension, system integrators range from SMEs to Large Enterprises. Larger enterprises such as SAP, IBM, Oracle, etc. have been first movers in this space as they have the most to gain from automating existing complex manual processes. However, their solutions are currently mainly direct to large companies, leveraging their prior vertical applications.	System Integrators can enforce their market position (or enter the market) by e.g. creating and then providing advanced B2B platforms, based on the innovative NIMBLE capabilities. Therefore, they are a **key segment** for NIMBLE. In particular, SME system integrators could be largely benefit of ready-to-user NIMBLE solutions.
Cloud Platform Provider	They offer computing resources for enabling cloud solution. They can be categorized as service providers (e.g. cloud manufacturing solutions) or infrastructure providers (e.g. AWS EC2).	Although it is not likely that IaaS and SaaS providers will transform their service stack into PaaS services, many of the current cloud providers are starting to complement their offering with PaaS capabilities. NIMBLE can be an opportunity for them to make this change. Therefore, they are a **very relevant segment.**
Network Operator	The network operators offer the capacity of a communication network to transfer data within a company and between linked companies in the supply chain. They can also act as system integrators and cloud platform providers. But this platform must be clearly open to third parties, in order to provide alternative solutions using the specific telecommunications infrastructure.	Similarly to large system integrators and cloud platform providers, the engagement of network operator could be difficult. Therefore, we should consider this as **a good segment**, since the opportunity to involve a network operator will be limited.

3.3 Exploitable assets

An overall technical description of the NIMBLE architecture and the available core services, configuration and customization possibilities has been reported in D8.10 NIMBLE Platform Launch Manual. In the following, we simply list the main assets, as they have been reported in D8.15, that are at the basis of the NIMBLE unique, innovative offering. Specifically, the first three assets are the actual product package that will be distributed as part of the open source NIMBLE exploitation strategy. The remaining assets are the main components of the NIMBLE platform that could be also exploited separately from the whole platform.

Table 5 – NIMBLE main assets

Asset	Description
Platform Package	
The NIMBLE Platform	Complete, ready-to-use cloud platform including built-in core and some exemplary advanced services
Platform launch kit	Open APIs, Platform instance launch guides, tutorials, NIMBLE-specific configuration of cloud infrastructure and middleware
Developers (3rd parties) facilities	A cloud based environment for managing whole lifecycle (design, development, deployment) of cloud services (DevOps Center), Reusable constructs for development of cloud service specialized to industry Cloud Services Marketplace
Core Services	
Frontend Service	This service provides the web-based graphical user interface. Each request from the user is delegated to other services (e.g. registration requests are delegated to the Identity Service).
Identity Service	Identities on the platform are administered by this service, which plays a vital role in terms of security. This service communicates with the Identity & Access Management stated in the microservice infrastructure above. Identities are defined as entities, which perform certain actions on the platform (i.e. users, companies and autonomous agents).
Catalog Service	Stores products / services persistently and manages the underlying ontology.
Business Process Service	Functionalities for collaborative execution of modelled business processes are provides by this service.
Indexing Service	Search and indexing are based on this microservice.
Trust Service	Trust rating for companies are computed and managed by this microservice.
Use case-specific tools/services	
Product Configurator	Tool for fast product configuration, according to multiple variables.
Product Avatar	Third party support for product lifecycle management
Product EOL Tool	Specific products can be donated to NGOs and charitable organizations to give them a second life
Product Manufacturing Specifications according to National Legislation & Regulation Service	Service to find documents about normative, legislation, patents and sectorial reports based on relevant parameters in order to support SMEs to enter new markets or new products according to national specific requirements

4 Innovation Potential

The innovation potential of the NIMBLE platform has been previously analyzed as part of D8.11 and D8.15. In the following, we will simply report the identified main findings.
Specifically, to assess the innovation potential of NIMBLE, we referred to the following main aspects:

- *Opportunity*; i.e. the market context where NIMBLE operates (trends, drivers, customers' expectations) which it is very favorable: the Industry 4.0 driver is pushing the organizational and technological change in traditional manufacturing SMEs, particularly those operating in non high-tech sectors.
- *Value added*; i.e. ability of the NIMBLE solution to address the existing unmet needs on a sectoral/regional basis. Among the identified distinct values (integration, intelligence, frictionless, enhanced B2B platform, trustworthy, open source and standards, PaaS and Federated), the following one have been assessed with use case partners as the most relevant ones:

Table 6 - NIMBLE main distinct values

Integration	NIMBLE capabilities make it possible to combine traditional batch-based transfers with modern event-based protocols including large-volume IoT scenarios: supply chains can combine legacy with modern interfaces available, as well as easily connect across protocols with systems, applications, technologies, partners, and more.
Frictionless	To pull the participants to the platform it must provide tools to facilitate valuable interactions, which of course, reduces friction and transaction costs among the participants. These tools involve modelling of the collaborative supply network workflows, sharing visibility of real time/batch data, execution of these workflows, monitoring of these workflows and events tracking, adaptation of the workflows when required.
Enhanced B2B Platform	Building upon the first three values above, companies can create and operate their supply networks at speed, enabling information exchange between different parties based on their specific needs. The resulting supply network is also able to scale. Beyond plugging in different partners and suppliers as needed, companies can scale down their operations to target niche markets/segments/customers, and/or target newer markets.
Trustworthy	NIMBLE offering includes opportune security and privacy mechanisms for data sharing - selecting which level of privacy has to be applied - reputation, data provenance and an holistic approach for trust-driven product/service selection.
Open source and Standards	All key components of NIMBLE are open source with Apache 2.0 licence and based on existing, well known technology frameworks and standards, which is the best approach for attracting platform providers / IT service providers interested to quickly build commercial solutions in the manufacturing sectors.

- *Competitive landscape*; to demonstrate the actual, novel positioning and offering of NIMBLE, we performed an analysis of the identified, main classes of potential competitors: Smart Manufacturing Digital Platforms, B2B Marketplaces and Industry Directories, B2B Platform Enablers. Among the three identified classes, the last one is the class of competitors that offers solutions that most overlap with NIMBLE's objective: i.e. enabling third parties (platform providers) to develop their B2B digital platforms, enabling frictionless interaction with their business customers. However:
    - The focus of these solutions is mainly for retailers and traders that sell/distribute their specific products, and not for organizations aiming to create an open B2B marketplace. NIMBLE can support both scenarios.

  - NIMBLE includes more advanced technology solutions for e.g. back-end integration, product description/matchmaking, security and trust.
  - All NIMBLE solutions are open source and, thus, can be easily adopted and extended/customized by third parties aiming to become platform owners.
- *Unique selling points*; i.e. the main factors that will make NIMBLE solution to be effectively launched in the market place. Specifically, the federated approach is a real distinct value of NIMBLE. It will allow a sectorial, regional specialization approach for growing (bottom-up approach) and, at the same time, it will support governance with a clear involvement of intermediaries as orchestrators/rulers of their ecosystems. This is a clear alternative to existing monopolistic approaches of existing digital platforms. Moreover, with the permissive open source approach and the standards (taxonomies/ontologies) at its core, it will attract providers and/or SMEs who:
  - can benefit from a ready-to-use solution;
  - want to use and customize it as they wish;
  - will have the possibility to interoperate with other platforms/solutions using the same standards.
- Based on these elements, key exploitation success factors will be related to the market ecosystem selection and the identification of the business leadership. The take-up of the specific digital platform is fostered by increasing the ecosystem of players involved in using that platform. The NIMBLE Platform exploitation leaders will build the market opportunity to develop services/applications with significant economic and societal value. To this end, NIMBLE aims at:
  - providing attractive, easy to use services first; in particular enabling to:
    - find a supply chain partner for a product;
    - involve logistic firm;
    - negotiate terms and agree on a contract;
    - do transaction and monitor them via the platform
  - having low entry hurdles for multi-side actors, including:
    - self-serve on-boarding;
    - incentive for network effects;
  - offering a clear value proposition for each side;
  - enacting pro-active governance to keep the ecosystem of actors in balance.

5 NIMBLE Platform Exploitation Strategy

In the medium term the NIMBLE Platform can span **diverse industries** as NIMBLE provides to potential, new platform owners a ready-to-use baseline platform, and to developers a common set of software APIs to extend the platform in many directions. But, the NIMBLE platform sets of common digital technology-powered processes can also increasingly generate value by adding products and services in mutually synergistic ways in **one specific industry vertical**.

As introduced in the previous section, this flexibility is a key competitive advantage of NIMBLE. Therefore, the proposed NIMBLE exploitation alternatives are based on the decision regarding the vertical focus vs the general focus. Specifically, the following possible options have been identified:

- Licensing out the whole NIMBLE platform as an Open Source and:
    a. A single partner (internal/external) will take the business leadership, deploy a new NIMBLE platform instance and license out to SMEs in **various vertical industries.**
    b. A single partner (internal/external) will take the business leadership, deploy a new NIMBLE platform instance and license out to SMEs in a specific vertical, as AIDIMME and FEVAMA are currently already pursuing for the **Furniture sector** (WP10)**.**
    c. A single partner (internal/external) will take the business leadership and will create **one dedicated European Company** for driving and coordinating the commercialization of the NIMBLE platform.
- The Consortium as a whole promotes a NIMBLE Federated Platform
    a. Consortium leadership and licensing out to diverse distributors for profit;
    b. Creation of a **European Association** (non profit) promoting free/open use.

The key exploitation point was to decide which ownership and sourcing model to apply. This will also then tie into the asset operation and distribution model that we will look at in the value creation and output steps.

Consortium partners agreed that the first option (with the different sub-options) is the main exploitation route, although further investigations will be performed to check how to guarantee a federate approach and the relative governance across multiple NIMBLE platform instantiations.

Based on that, a business plan for the joint commercial exploitation of the NIMBLE platform will be not developed. Instead, the model/strategy to exploit the NIMBLE platform can be based on two main key elements:

1. **Identify a business leadership for launching new platform instances**: it is important to identify the **leadership** in managing and building the platform for others in the eco-system or ensure a fast follow.
2. **Deploy a lean structure for NIMBLE governance**: NIMBLE services will be provided by "**peers**" (the new platform owners). This frees the platform from typical employment entitlements and burdens.

Therefore, about the actual business modeling, the sectoral / vertical Industry platform alternatives will be based on the leadership (platform owner) decision.

With a view to this, INNOVA proposed to integrate into the Platform Launch Manual (D8.10) an existing toolkit (see next Section 6) that can drive potential new platform owners to shape their own platform strategy. As detailed in the next section, the toolkit has been introduced to the project use case partners, and they have started to develop their own digital platform strategy, based on the open source NIMBLE solutions.

6 Use Cases' Platform Strategies

As reported in D8.10 – NIMBLE Federated Platform Launch Manual, NIMBLE has identified an existing toolkit - The Platform Design Toolkit (https://platformdesigntoolkit.com) - to be used by potential new platform owners to develop their own platform strategy.

The toolkit includes a methodology and a set of canvases that help the potential new platform owners to:

1. envision and design how the target platform can work, creating and exchanging value among different stakeholders in the target market;
2. obtain a first design for the validation by creating a prototype (Minimum Viable Platform) or assumptions for validation experiments.

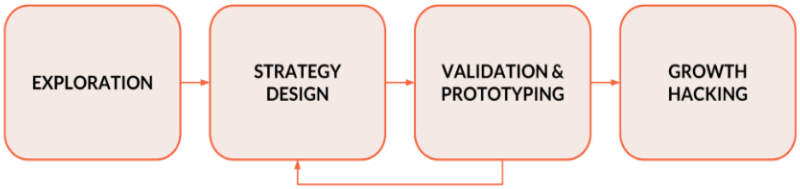


Figure 8 – The phases of Platform Design

As depicted in the Figure above, overall, the toolkit introduces four macro phases (please refer to D8.10 for additional details):

- **Exploration**: understanding the context, and the strategic meaning and applicability of a platform strategy that impacts, shapes and influences the context;
- **Strategy Design**: mapping entities, understanding their individual context, their potential to exchange value, and imagining the two *key platform engines* (the *transactions* engine, the *learning* engine), plus designing the *experiences* one wants to create for participants;
- **Validation** and **Prototyping**: conducting ecosystem analysis and testing (this could also partially happen during the design phase, and is generally an iterative process), making the MVPs or the experiments dedicated to validate or invalidate the assumptions;
- **Growth Hacking**: applying tactics to help the strategy grow in the context (being it a market, or something different) and achieve niche enablement and network effects.

The first two (exploration and strategy design) are the most relevant at the design stage, since they help the potential new platform owner to understand the context (market) to target, the services to activate and the values to capture. The third step (validation & prototyping) is in fact the adoption of the NIMBLE platform for implementing and validating the devised platform strategy. Finally, the forth step is related to a more specific market growth strategy, which is very sectorial/market depended and, thus, not covered in this document.

Therefore, we decided to adopt such an approach for firstly supporting NIMBLE use case partners to investigate the opportunity to become/identify a platform owner for their specific business cases and start to develop their own Platform Strategy (business plans).

The activity started by arranging a workshop within the Consortium Meeting in Bologna on 26th-27th February 2019 with all use case partners where INNOVA introduced the toolkit's methodology and canvas, and then ran and moderated the workshop (see figures below).

Partners were grouped according to their interest/participation to a specific NIMBLE business case (furniture manufacturing, white goods, wooden houses, textile) and the different activities (brainstorming and editing the Platform Design Toolkit canvases) were performed in parallel.

Figure 9 - Team working within the 26th - 27th February's workshop in Bologna

During the workshop, we mainly focused on the Strategy Design phase (step 2), since we assumed that the use case partners have already a good understanding of the respective contexts, also given the past business and exploitation activities performed in NIMBLE (see D8.11 and D8.15).

Nevertheless, it is worth highlighting that the workshop was quite intense and we couldn't brainstorm in depth, all the planned canvases (see next section 7.1). Therefore, use case partners committed to finalise these activities started at the workshop in the following weeks.

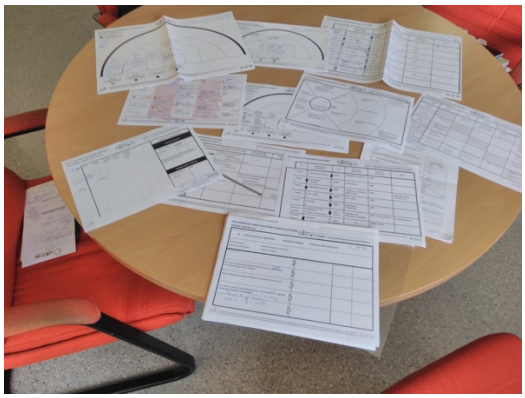
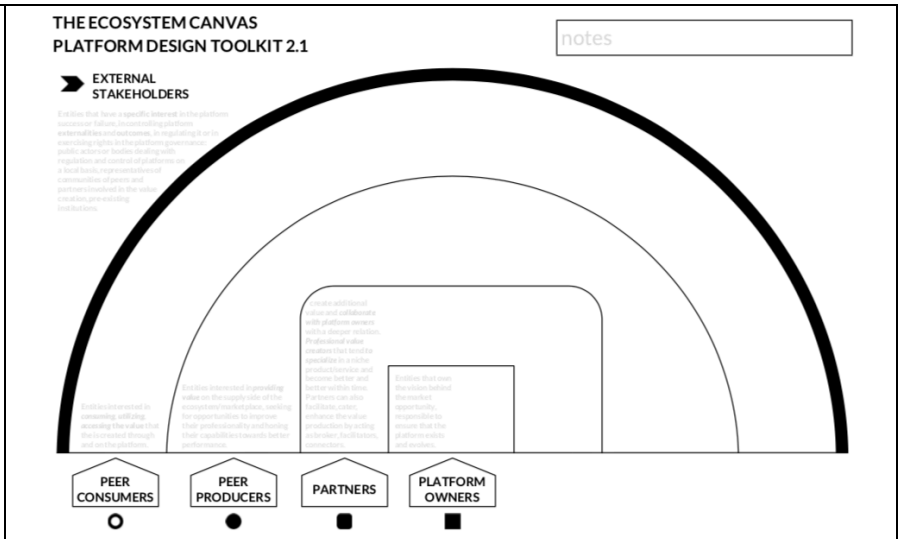


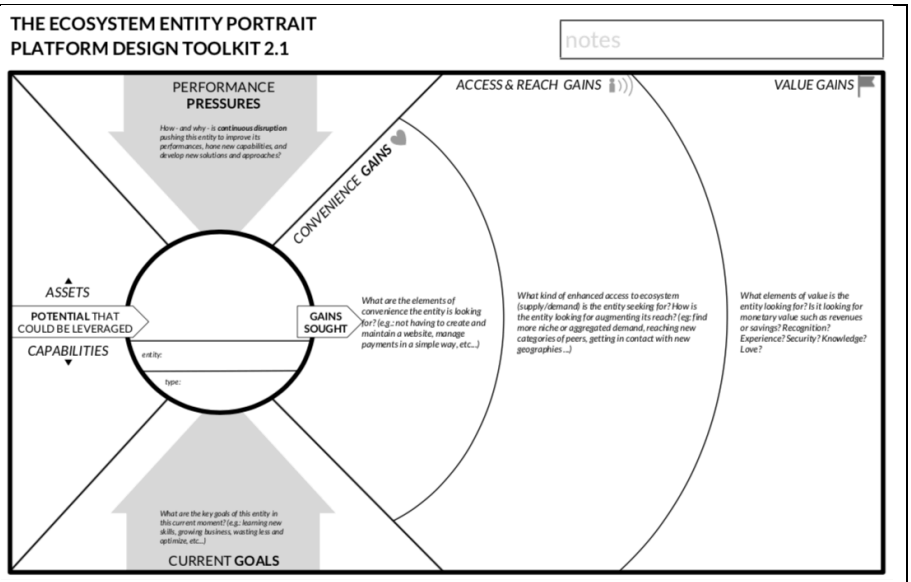
Figure 10 – Finalisation of the work at the use cases' premises

In the next subsections, we firstly summary the list of canvases that were proposed during the workshop; then, for each project business case, we report the obtained main results.

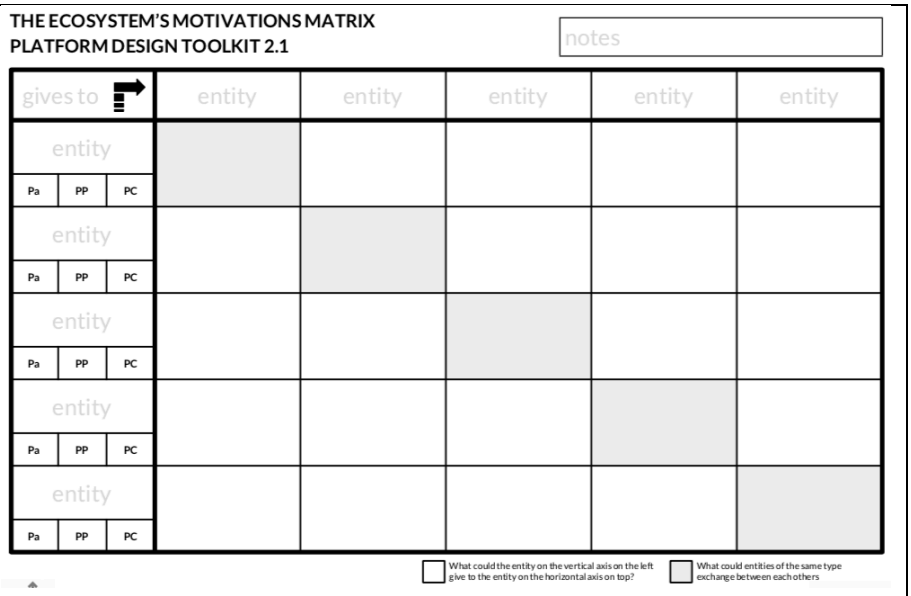
6.1 Strategy Design Canvases

The following table reports the canvases that are part of the Strategy Design phase. For each canvas, we give a short explanation and some notes whether it was applied or not during the workshop.

Mapping the Ecosystem. By using the Ecosystem Canvas the platform shaper will reflect on the ecosystem to shape, and organise with its platform strategy. The platform shaper will map the entities present in this ecosystem and you will then understand what roles they might play, clustering them if necessary.	
Applied: Yes. Partners identified and classified main peers in their reference context/market.	

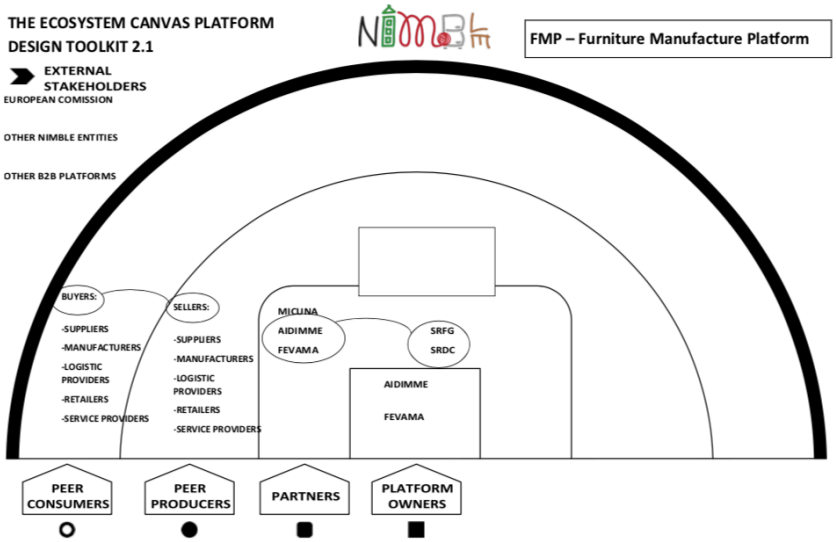
Portraying Ecosystem's Entities. In the Ecosystem Entity Portrait the platform shaper will make a consistent picture of the entities' context: what they're trying to achieve, with whom and how they're trying to connect, what potential they can express, and what kind of experience gains they're looking for - and therefore you should provide - as a platform shaper.	
Applied: Yes. This is a time-consuming step, since it requires wearing the hats of distinct actors. Therefore, partners were asked to focus on 1-3 key peers, e.g. those that will be involved in future validation activities within the NIMBLE project.	

Analysing the potential to Exchange Value. With the Ecosystem's Motivation Matrix the platform shaper will then analyse their potential to exchange flows of value: in other words it will map what kind of value exchanges the entities are performing already (or trying to), and what additional type of value they might exchange if properly enabled.

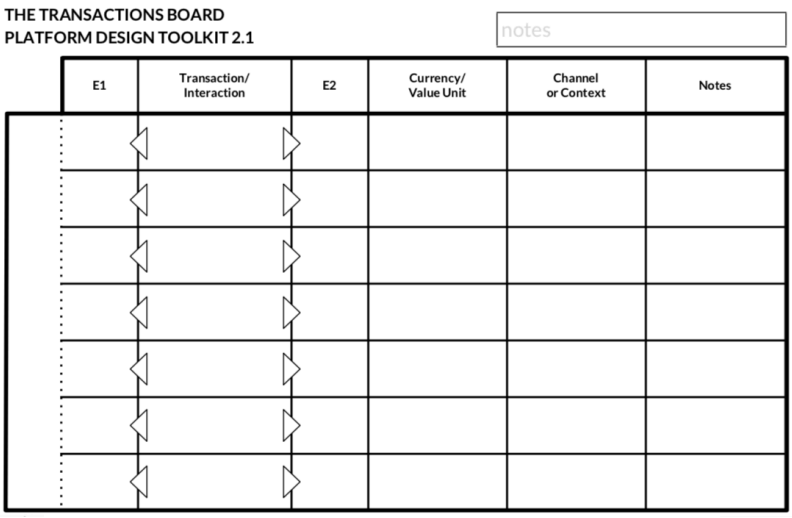


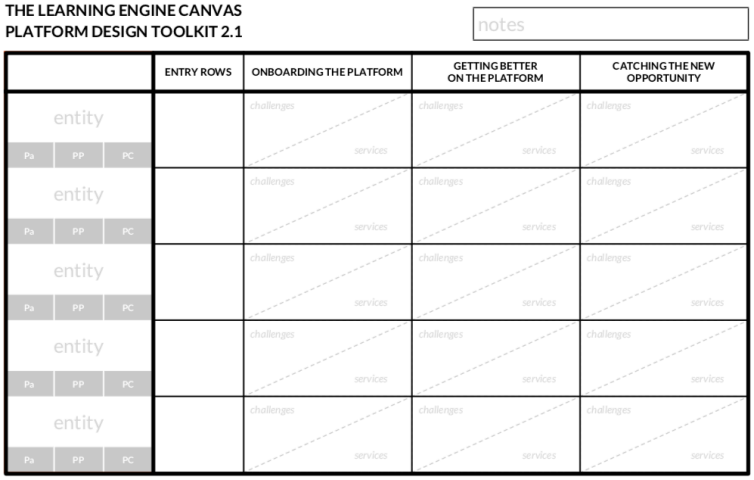
Applied: Yes. And during the workshop partners identified some value exchanges not previously considered in previous project activities.

Choosing the core relationships to Focus on. At this point in the design process, it's important that the shaper identifies the focus: what are the entities in the ecosystem we want to focus on? What relationships are going to be the core of our design work (at least for a first iteration?). No specific canvas it used. Selection can be made by highlighting the target entities and the key relationships on the Ecosystem Canvas (created at step 1).

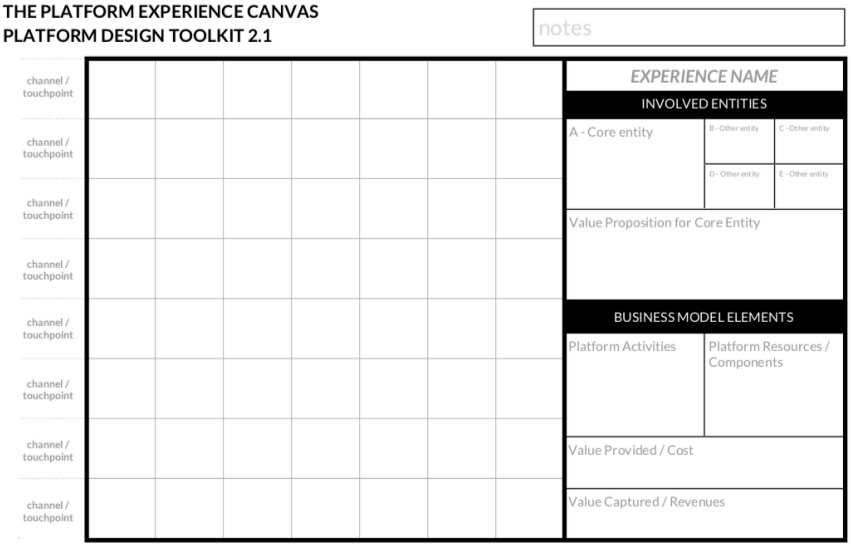


Applied: Yes. We asked the use case partners to specifically pick the peers that were described at step 2 (*Portraying Ecosystem's Entities*).

Identifying the Elementary Transactions. With the Transactions Board, the platform shaper will map how the ecosystem is currently exchanging value (focusing on the entities and the relationships you decided to prioritize), and the platform shaper envisions how the platform strategy can help them transact value in an *easier, cheaper* and *faster* way by providing, and curating channels and contexts that will make interactions and transactions more likely to happen.	
Applied: Yes. Although during the workshop we limited the focus on just a couple of peers. The work was completed after the workshop by partners.	

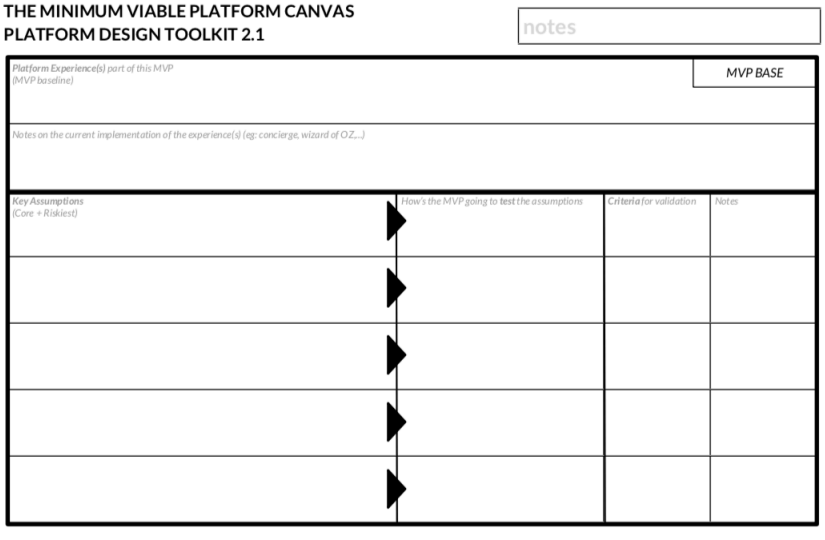
Designing the Learning Engine. With Learning Engine Canvas, the platform shaper will design a step by step process made of support/enabling services that will help your entities embrace your platform strategy. These services will help them to evolve, emerge from the crowd, become better producers and consumers, and ultimately undergo a radical evolution that will have them explore new opportunities, and behaviors not intended initially.	
Applied: Partly. This is a rather complex step that is also quite difficult to design at this stage (i.e. envision how user can improve their role / functions within a working platform). Therefore, given the limited time, we decided to skip this step in this first iteration of the platform strategy definition. However, it will be reconsidered in future activities and some business cases started already to define this canvas (FMP and Textile Business Cases)	

Assembling the Platform Experiences. With the Platform Experience Canvas, the platform shaper craft an experience that synthesizes the core value proposition(s) arising from the Strategic Design phase and that - more than others - the platform shaper considers essential for its platform strategy. The platform shaper will then reflect around the sustainability model of this experience, thus covering the basic elements of Business Modeling, you will think at what resources and components the platform shaper will have to set in place and manage in order to deliver this experience, and how the platform shaper will extract value from it.



Applied: Yes. This step is of major relevance since (i) it can support partners in defining the key scenarios to be implemented during the validation activities and (ii) it maps between the target scenarios and the expected business values and, thus, the possible KPIs to "measure" during validation activities. A first scenario was investigated during the workshop. The work was then completed and extended in the following weeks by partners.

Setting up the Minimum Viable Platform. With the Minimum Viable Platform Canvas, the platform shaper finally *move out of the building* to test in the real world if all the created design assumptions have a future or not. By looking at the design outputs, especially the Platform Experience Canvas(es), the platform shaper will extract the riskiest as-



sumptions in its strategy, and it will set experiments and metrics to validate them with the target ecosystem.	

Applied: Partly. This step involves the collection of all the expected business assumptions (i.e. the business values the platform will provide) and the respective metrics to be measured during the validation activities. Given that the scenario descriptions (previous step) were not complete at the end of the workshop, we decided to postpone this step and link it to the design of the validation activities within WP7. However, some business cases already started to define this canvas (FMP and Textile Business Cases).

6.1.1 Platform Design Canvas

In order to summarize and report the main outcomes of the performed platform strategy definition activity, we adopt the so-called Platform Design Canvas. It is an adaptation of the Osterwalder's Business Model Canvas to best describing Platform Vision and Ecosystem Dynamics to be served by the platform. This canvas has been built by simply collecting the key findings emerged throughout the platform strategy workshop, including:

- PLATFORM OWNERS: Set of players that will be ultimately responsible to ensure that the platform exists in production.
- STAKEHOLDERS: Entities that have a specific interest in platform success or failure, in controlling platform externalities and outcomes, in regulating it or in exercising rights in the platform governance.
- ENABLING SERVICES (Platform to Partners): Services targeted to helping partners generate value from their professional capabilities, gain market, opportunities and visibility to gain decisive improvement as professionals.
- EMPOWERING SERVICES (Platform to Peer Producers): Services targeted to helping peer producer hone capabilities, get better and generate more opportunities from the platform.
- OTHER SERVICES (Platform to Peer Consumers): Services can be provided to peer consumers as complementary of the experiences provided by the ecosystem through the platform.
- CORE VALUE PROPOSITION: The primary value that the platform seeks to create for its core target (the target of the Core Value Proposition).
- ANCILLARY VALUE PROPOSITIONS: A secondary value that the platform seeks to enable. This is usually targeted to the same target segment of the Core Value proposition but can also be targeted to a different one.
- INFRASTRUCTURE and CORE COMPONENTS: Controlled and owned by the platform owners and governed according to the platform governance. Typically we include here the NIMBLE infrastructure and all additional/external services that ensure the platform works.
- TRANSACTIONS: These transactions happen between two entities in the ecosystem and consist of exchanging or transferring ownership of a *currency* or other *stores of value* (assets, money, token, credits), providing elements of *intangible value* (such as reputation, trust, kudos, likes, etc...), providing labour/work or enabling access to resources.
- CHANNELS & CONTEXTS: Every relationships borns in contexts and transactions happen better thanks to controlled and designed contexts that evolve into what we

call channels. A context is defined more broadly than a channel and the latter can be often considered an evolution of the first. A refined and optimized channel should be available to make transactions easier. When complex transactions are broken into several sub-transactions a channel must exist for every phase to happen smoothly.

- PARTNERS: Partners are essentially professional entities that seek to create additional professional value and to *collaborate with platform owners* at a stronger stage of relationship. Typically, partners are *professional value creators* that tend *to specialize* in a niche product/service and become better and better within time. Partners sometimes also facilitate, cater, enhance the value production by acting as broker, facilitators, connectors.
- PEERS PRODUCERS: Entities interested in *providing value* on the supply side of the ecosystem/marketplace, seeking for opportunities to improve their professionality and honing their capabilities towards better performance.
- PEERS CONSUMERS: Entities interested in *consuming*, *utilizing*, *accessing* the value that the is created through and on the platform.

6.2 Furniture Manufacturing Platform

This business case refers to the Furniture Manufacturing Platform (FMP) which is the first running instance of NIMBLE for the whole furniture manufacturing value chain to make contacts and create possible new business with companies at a European level. FMP will allow companies to search for products, materials and / or services, according to their needs, being able to locate new potential suppliers and even arrange negotiations for specific supply chains. FMP is the ideal solution to find partners in the supply chain and negotiate with them even logistics services.

AIDIMME and FEVAMA have committed to become Platform Owners of such a NIMBLE instance and together with some of their partners have developed the platform strategy summarised in the Platform Design Canvas below.

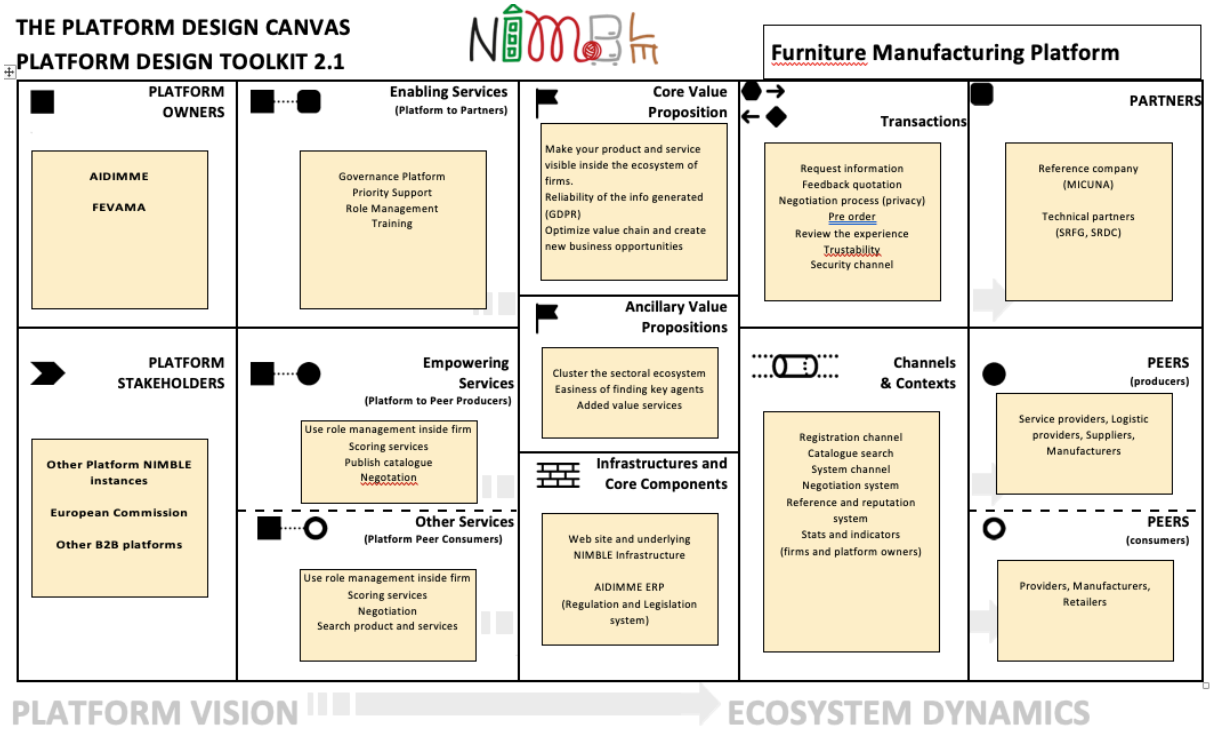


Figure 11 – FMP Platform Design Canvas

The target ecosystem is depicted in the diagram below. It includes any actor in the value chain of the furniture manufacturing industry, which are e.g. manufacturers, suppliers of materials, service and logistics providers and retailers. Within this target group, the most relevant segment includes SMEs. Currently, the focus is on Spanish companies, but in the mid-long term the idea is to extend the audience to other EU countries according to the value chain of the companies registered in the FMP.

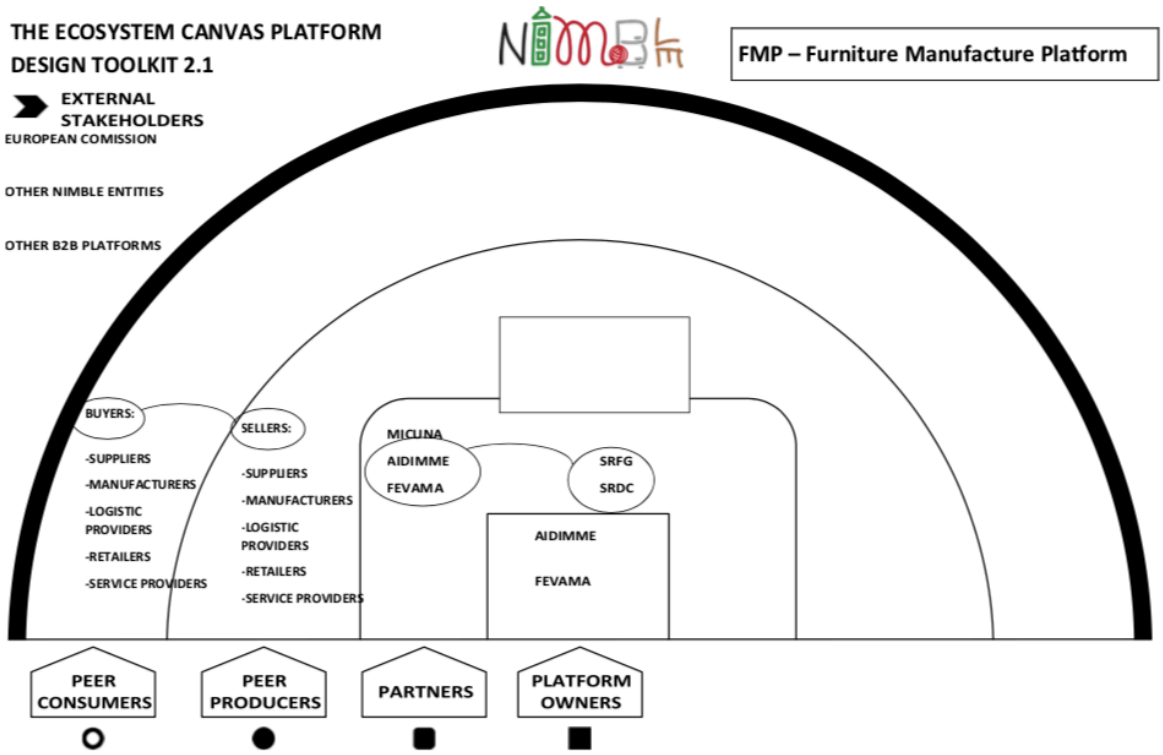


Figure 12 - FMP Ecosystem Canvas

During the workshop, the use case partners decided to analyse the platform owner perspective and thus developed the following Entity Portrait Platform canvas with the current Goals and Performance Pressures of AIDIMME and FEVAMA and the expected Gains by implementing the platform.

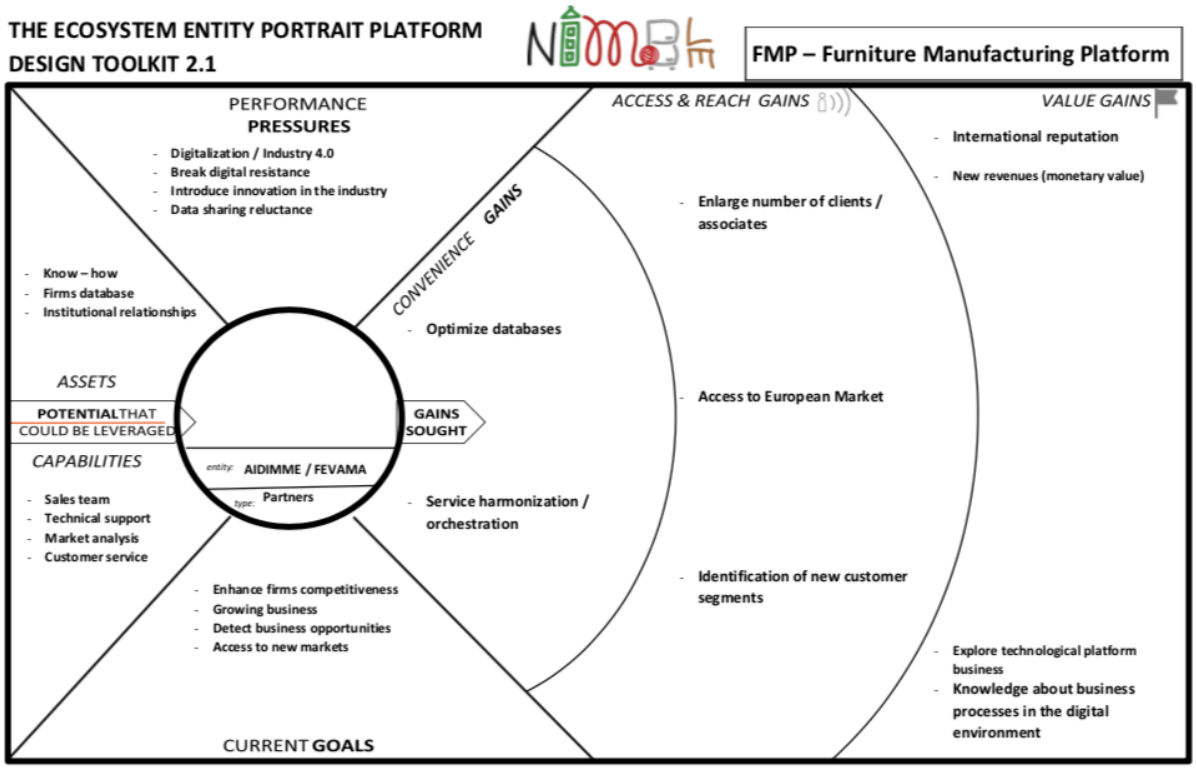


Figure 13 - FMP Entity Portrait Canvas

The following Motivation Matrix then extended the analysis to capture values emerging from the transaction between all key actors of the target ecosystem.

THE ECOSYSTEM'S MOTIVATIONS MATRIX
PLATFORM DESIGN TOOLKIT 2.1

FMP – Furniture Manufacturing Platform

gives to ⇨	AIDIMME / FEVAMA	MICUNA	SRFG / SRDC	PEER PRODUCERS: SUPPLIERS, MANUFACTURERS, LOGISTIC AND SERVICE PROVIDERS	PEER CONSUMERS: MANUFACTURERS, CONTRACT CUSTOMERS, RETAILERS
AIDIMME / FEVAMA (Pa / PP / PC)	• Industrial and institutional support • Technical support collaboration	• Platform advantages due to participation in FMP – NIMBLE	• Instantiation in a real industrial environment • Validation with real users	• Digital service • Platform administrator • Visibility at European level • Engagement	• Digital service • Platform administrator • Visibility at European level • Engagement
MICUNA (Pa / PP / PC)	• Platform tester validation • Requirements definition / elicitation • Procedure detailing • Supply chain engagement			• Suppliers engagement • Cocreation	• Suppliers engagement • Cocreation
SRFG / SRDC (Pa / PP / PC)	• Technical development of platform • Technical suport • Connection to other instances			• Access to other platform instances (e. G. MVP – EU)	• Access to other platform instances (e. G. MVP – EU)
PEER PRODUCERS: SUPPLIERS, MANUFACTURERS, LOGISTIC AND SERVICE PROVIDERS (Pa / PP / PC)	- Monetary value - Reputation			• Negotitation and business • Access to new markets	• Negotitation and business • Access to new markets
PEER CONSUMERS: MANUFACTURERS, CONTRACT CUSTOMERS, RETAILERS (Pa / PP / PC)	- Monetary value - Reputation	- Negotiation and business - European contacts	• Success of the pilot FMP	• Negotitation and business • Access to new markets	• Negotitation and business • Access to new markets

To do business on the platform, the identified peers (both producer and consumer) need to register and, after validation, they can publish their catalog of products and/or services, and thus begin to:

- Search for products and / or services
- Obtain immediate information about the products / services and their availability.
- Contact companies and initiate negotiation processes with the most appropriate suppliers.

The following Transactions Board captures and details a portion of the expected transactions between buyers and sellers. Moreover, it also introduces the possible transactions between the platform owners and the technical providers for future improvements of the FMP instance.

THE TRANSACTIONS BOARD PLATFORM

FMP – FURNITURE MANUFACTURING PLATFORM

E1	Transaction/ Interaction	E2	Currency/ Value Unit	Channel or Context	Notes
Buyer	Information request	Seller	Information request	FMP	
Buyer	Information response	Seller	Information	FMP	
Buyer	Negotiation process	Seller	Feedback, quotation, networking	FMP	Retailing, prices, shipping, etc.
Buyer	Pre - order	Seller	Pre - order	FMP	
Buyer	Scoring	Seller	Reputation, trustability	FMP	
Platform owners	Development of FMP improvement Support and maintenance	Tech parties	Improve user experience, stability	FMP / mail / phone	Troubleshooting
Platform owners	Solutions	Tech parties	$, €	WEB? / LIVE?	

Figure 14 - FMP Transactions Board

Besides the Transactions Board, the use case partners have also started to define a preliminary version of the Learning Engine Canvas that currently (future revision of the strategy will improve this analysis) foresee the opportunity for some Peer Producer (Seller) could progressively earn the role of "Key Partner" and gain more visibility in the ecosystem.

THE LEARNING ENGINE CANVAS
PLATFORM DESIGN TOOLKIT 2.1

FMP – FURNITURE MANUFACTORING PLATFORM

	ENTRY ROWS	ONBOARDING THE PLATFORM	GETTING BETTER ON THE PLATFORM	CATCHING THE NEW OPPORTUNITY
BUYERS Pa PP PC	→	Publish entire catallogue Make the first negotiation Search engine		
SELLERS Pa PP PC	→	Attract the first buyer Match making		
KEY PARTNERS Pa PP PC			Stand out from the crowd Backward / Forward linkages	
Pa PP PC				
Pa PP PC				

Figure 15 - FMP Learning Engine

The following canvas reports a high level design of the core FMP experience, depicting the process for a company to register to the platform, publish its catalogue and start making business with other peers (consumers and service providers like logistic companies). In the same canvas, the partners have already identified key elements of the platform business model: core value propositions, the main technical components, a list of expected costs and revenue model.

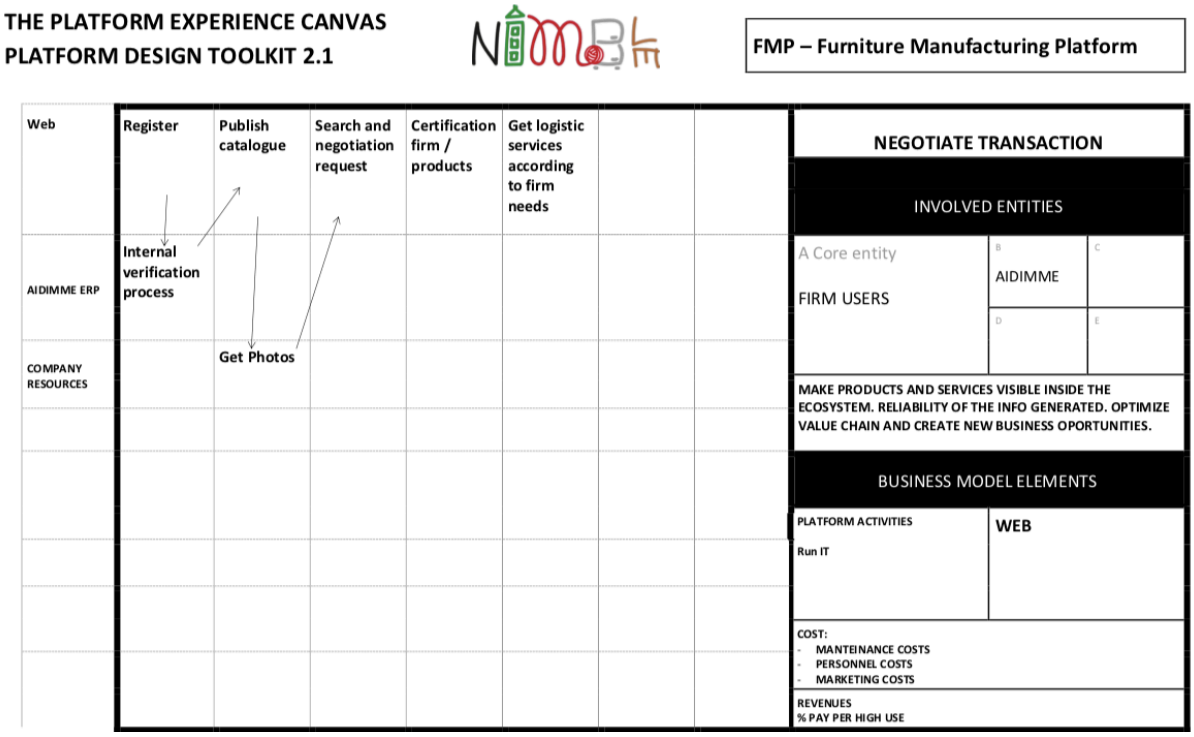
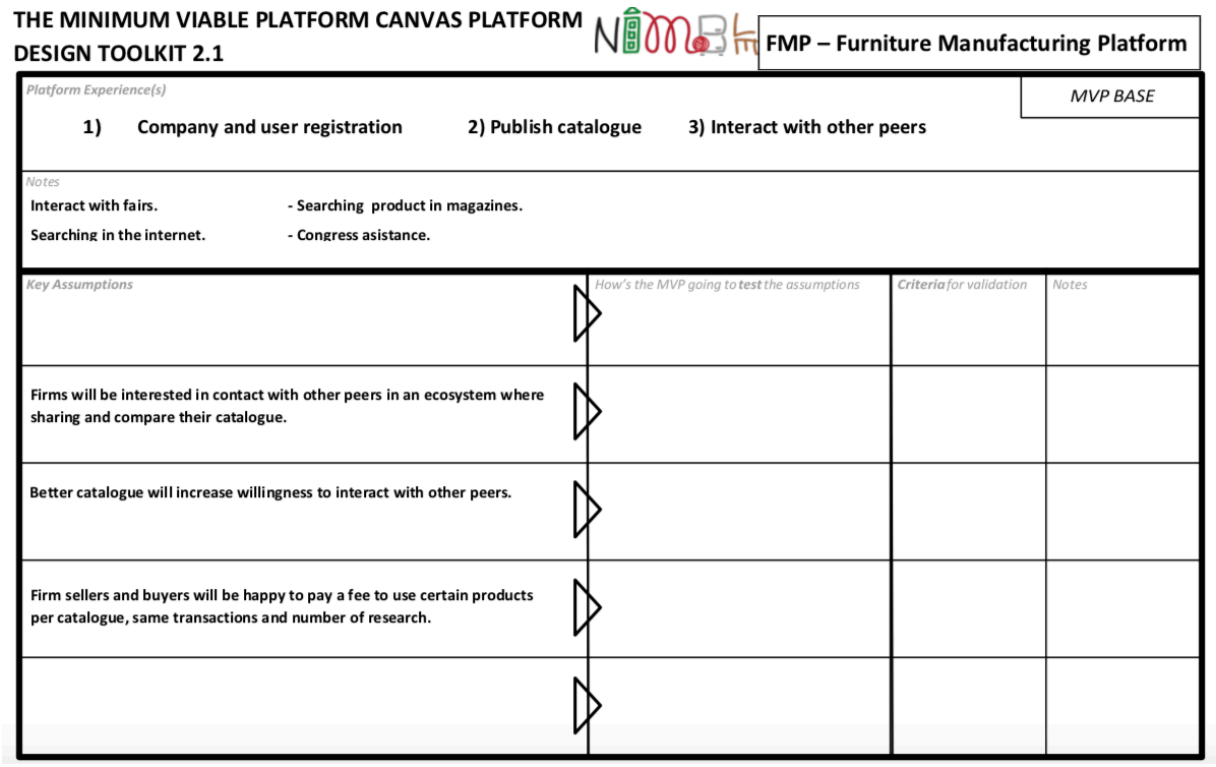


Figure 16 - FMP Platform experience canvas

Finally, the last FMP canvas identifies the key assumptions – i.e. the key values – that will be "measured" during the validation phase of the FMP instance (MVP) for the selected core platform experiences.



THE MINIMUM VIABLE PLATFORM CANVAS PLATFORM DESIGN TOOLKIT 2.1

FMP – Furniture Manufacturing Platform

Platform Experience(s) — *MVP BASE*

1) Company and user registration 2) Publish catalogue 3) Interact with other peers

Notes

Interact with fairs. - Searching product in magazines.

Searching in the internet. - Congress asistance.

Key Assumptions	*How's the MVP going to test the assumptions*	*Criteria for validation*	*Notes*
Firms will be interested in contact with other peers in an ecosystem where sharing and compare their catalogue.			
Better catalogue will increase willingness to interact with other peers.			
Firm sellers and buyers will be happy to pay a fee to use certain products per catalogue, same transactions and number of research.			

Figure 17 – FMP Minimum Viable Platform

Notice that the actual metrics and criteria for the validation of the MVP are not reported in the canvas above. But those metrics have been already included in a more comprehensive assessment toolkit developed within the SEED Programme and reported in D8.9 (Feasibility and Impact Assessment Toolkit) at M30.

6.3 Textile Platform Business Cases

The textile business case was originally devised as a specific customization of the NIMBLE platform to support the existing supply chain structure of a textile company like Piacenza. The idea was to link all the SMEs of the production chain of the textile sector, setting for them a common language. In this way, they could be ready to operate with new actors on the market, exchanging technical data thanks to the use of standards. This could lead to a wider presence on the market, and open new frontiers of collaboration among actors of the textile value chain.

However, during the workshop, the involved partners (Piacenza, Domina and ENEA) realized the opportunity to define a platform strategy for two distinct, more scoped, scenarios within the textile domain:

- Collaborative design scenario;
- Certification of origin scenario.

6.3.1 Collaborative design scenario

In the first scenario, the platform ownership could be the joint effort of two types of entities: an IT provider (dealing with the platform infrastructure management) in collaboration with a textile and clothing association and/or a sectorial district association (dealing with the community / commercial development). The focus of the scenario is developing a platform that enables a dynamic and trustworthy co-design of textile / clothing products. The devised platform strategy is summarized in the Platform Design Canvas below.

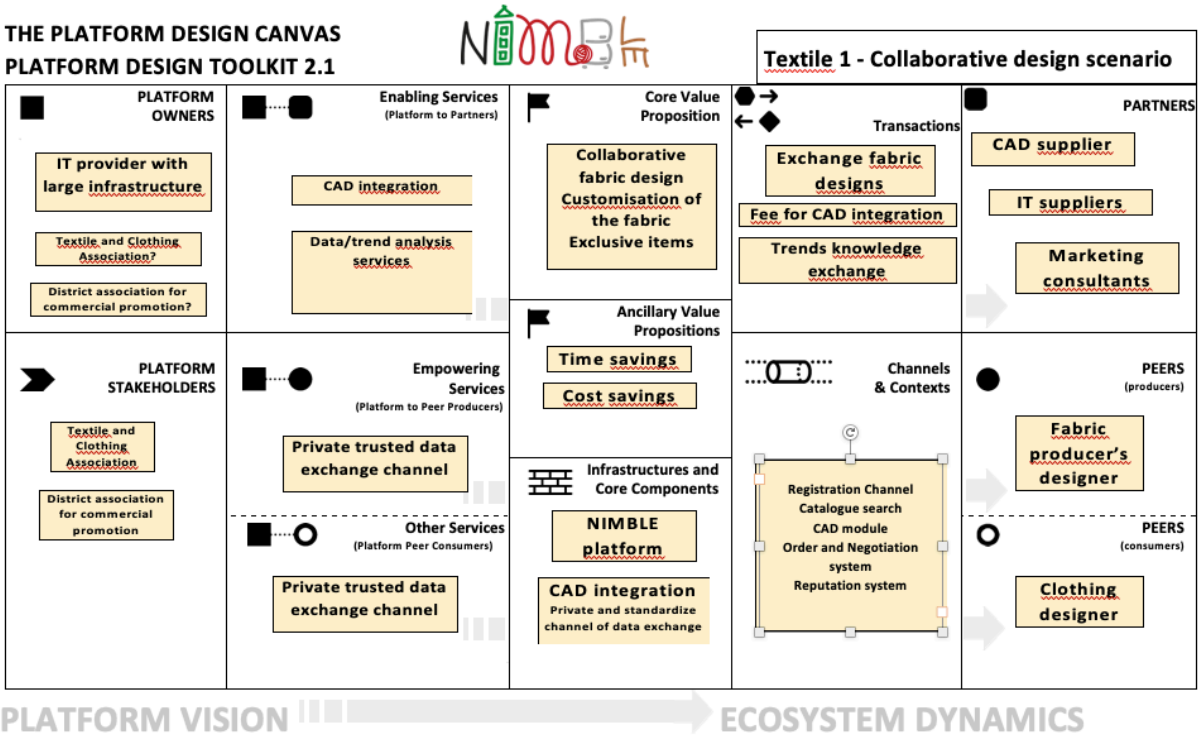


Figure 18 – Collaborative Design Platform Design Canvas

As depicted in the following Ecosystem Canvas, the main target peers are fabric producers' designers (producers) and clothing designers (consumers).

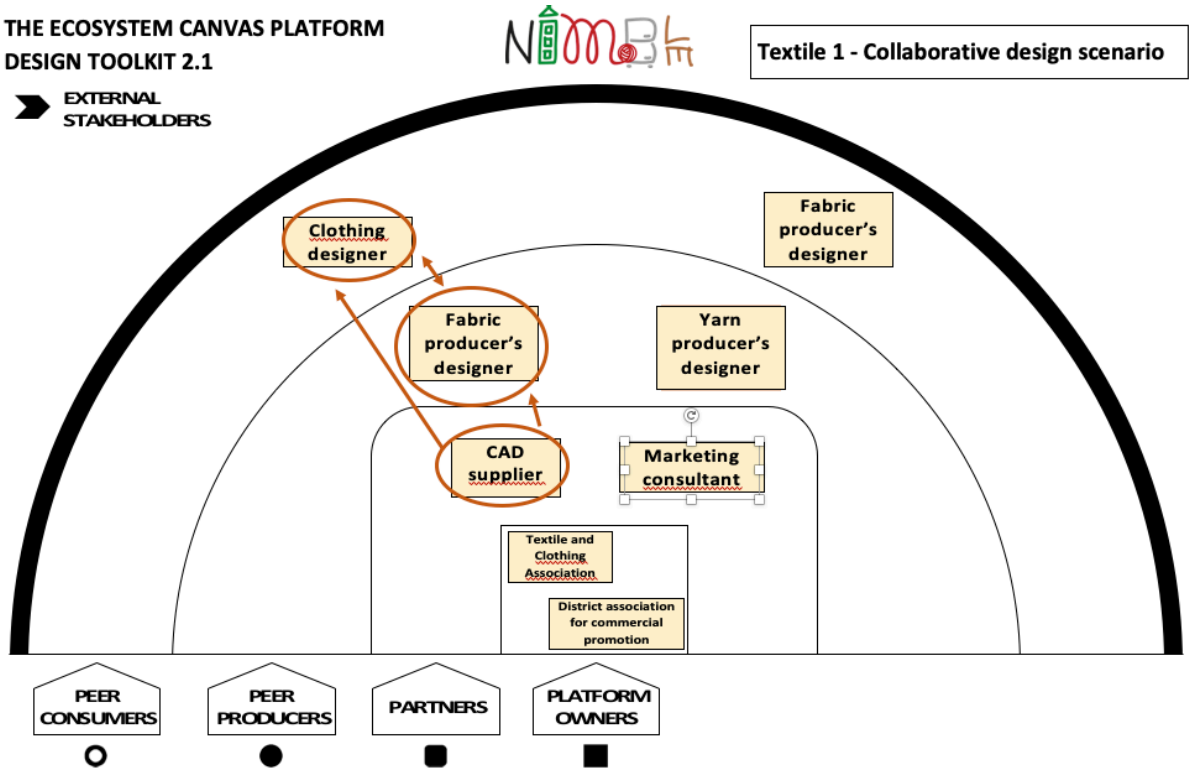


Figure 19 - Collaborative design scenario Ecosystem Canvas

A key player in the target ecosystem is represented by CAD suppliers that can integrate their software solutions to the platform and link their current customers through the platform, as well as gaining access to other customers through the platform. Therefore, partners decided to focus on the CAD supplier role for the portrait analysis.

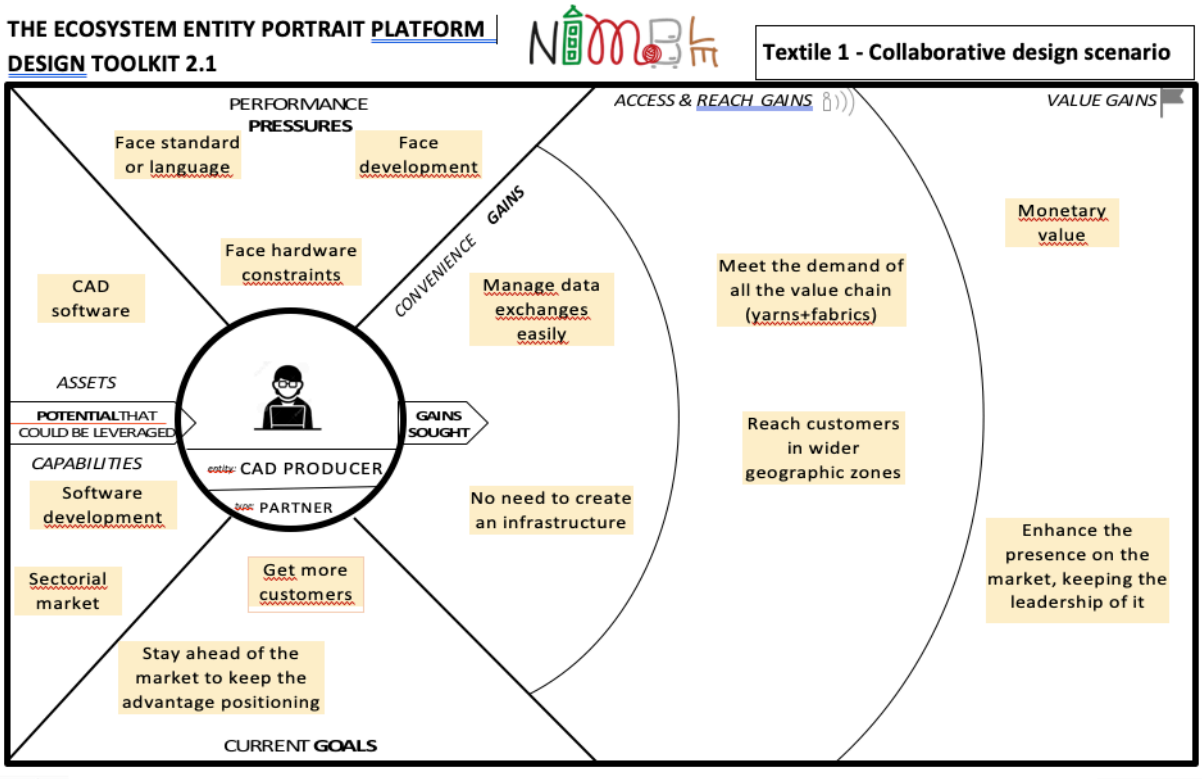


Figure 20 - Collaborative design scenario Entity Portrait Canvas

In this scenario, the core value proposition is the possibility to create new value chains for collaborative fabric design that can lead to the realization of customized and exclusive items. The following Motivation Matrix reports all possible value exchanges between the identified peers that can trigger the creation of such a new value chains.

THE ECOSYSTEM'S MOTIVATIONS MATRIX
PLATFORM DESIGN TOOLKIT 2.1

Textile 1 - Collaborative design scenario

gives to ⇨	Fabric producer's designer	Clothing designer	CAD supplier	Marketing consultant	
Fabric producer's designer PP		- Design proposal - Chance to customize the fabric, in design, composition, colours - Exclusive fabric design - Collaboration which helps consolidating the commercial relation with the supplier	- € fee for the integration module - Process knowledge/expertise - New contacts which might be potential users - Reputation gain	- New contacts - Reputation gain -	
Clothing designer PC	- Knowledge of new trends - Reputation - Collaboration which consolidates the commercial relation with the customer - € revenue on sales	- Data sharing for collaborations among different brands	- Eventual € fee for the integration module - Reputation gain	- New contacts - Reputation gain	
CAD supplier Pa	- Module to realize collaborative design - Chance to realize multiple design options at low cost - Usable, secure, reliable data exchange on the platform - Savings on time and money on the design process	- Module to realize collaborative design - multiple design choices - fabric customization - exclusive fabric creation	- Advantage on the market - Interoperability thanks to the use of standards, which facilitates integrations and personalisation of add-ons.	- Product to promote - New market opportunity - New contacts for selling other marketing products or services - Info on data exchange volume - € to promote the collaboration design and get new customers	
Marketing consultant Pa Pa PP PC	- Brings the fabric producer to this platform/CAD module integration - Enlarge geographic market opportunities - New potential customers	- Brings the fabric producer to this platform/CAD module integration - New potential suppliers - Enlarge geographic horizons on suppliers	- New customers (both in the same and in new geographical markets) - offers other marketing services - visibility	- cross other market opportunities - integrate other services - reach new geographical areas - new possible co-operations	

Figure 21 - Collaborative design scenario Motivation Matrix

The following Transactions Board focuses on the core transactions that can be supported by the envisioned platform.

THE TRANSACTIONS BOARD PLATFORM

Textile 1 - Collaborative design scenario

E1	Transaction/ Interaction	E2	Currency/ Value Unit	Channel or Context	Notes
CAD supplier	It provides the software integration	Clothing designer	software integration	The platform (CAD module)	The clothing designer needs to have at least a CAD viewer
CAD supplier	It provides the software integration	Fabric producer's designer	software integration	The platform (CAD module)	The fabric producer needs to have CAD on his desktop
Fabric producer's designer	Publishes/views standard design proposals for the season	Clothing designer	Fabric design standard samples	The platform (catalogue)	
Fabric producer's designer	Discuss on fabric details, changing colour, composition, patterns	Clothing designer	Fabric design customised sample	The platform (CAD module)	This data exchange is private, covered by secutiry measures
Fabric producer's designer	Issue of the final version of the fabric design with commercial offer	Clothing designer	Fabric design customised sample	The platform (negotiation)	The item is visible only on the customer's catalogue, not on the public one
Fabric producer's designer	Makes the order of the customised fabric	Clothing designer	Fabric design customised sample	The platform (order)	
CAD supplier	€ fee (una tantum, or on transactions)	Clothing designer Fabric producer's designer	software integration	(CAD module)	the platform owner could also take part in the interaction flow

Figure 22 - Collaborative design scenario Transactions Board

Similarly to the FMP business case, the involved partners have started to design a possible learning engine for the platform users. In this case, the possibility arises for the target users to obtain more and more benefits once the use of platform increases.

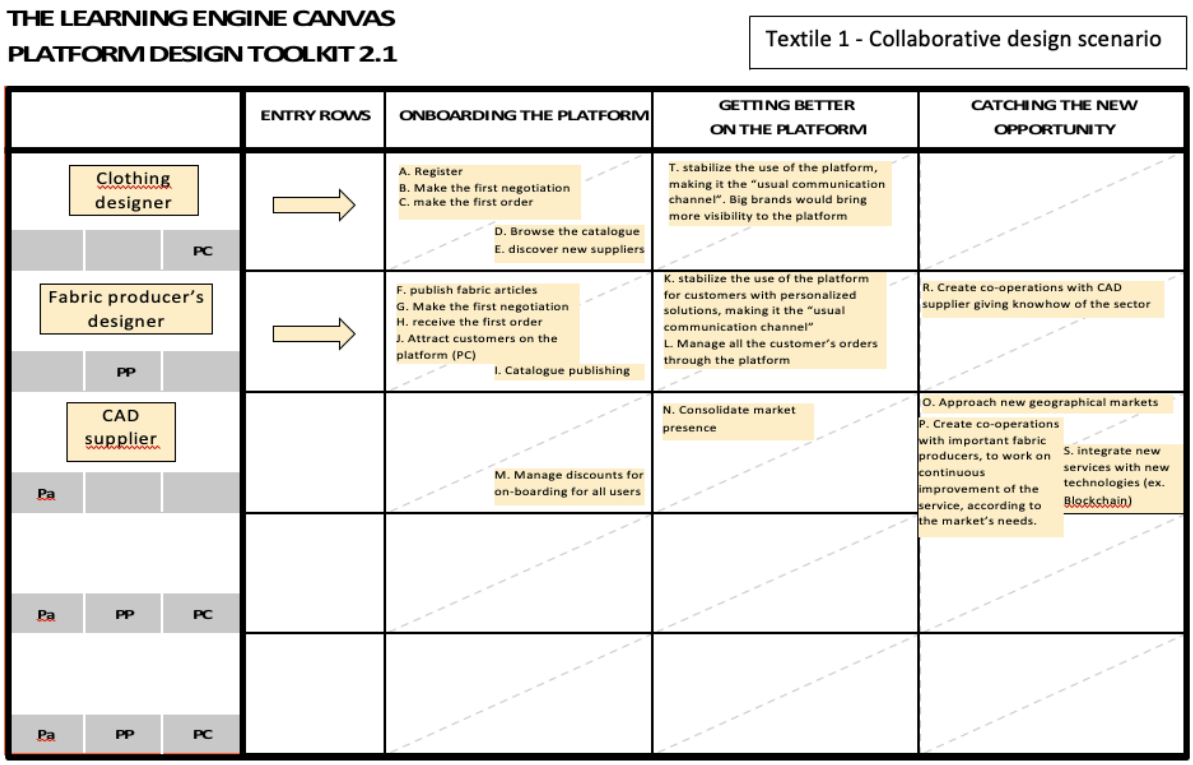


Figure 23 - Collaboratibe design scenaro Learning Engine

The following canvas reports a high level design of the core collaborative experience, depicting the process for a company to register to the platform, browse catalogue and collaborating through the CAD software with the engaged companies. In the same canvas, the partners have already identified key elements of the platform business model in terms of core value propositions, technical services and expected benefits.

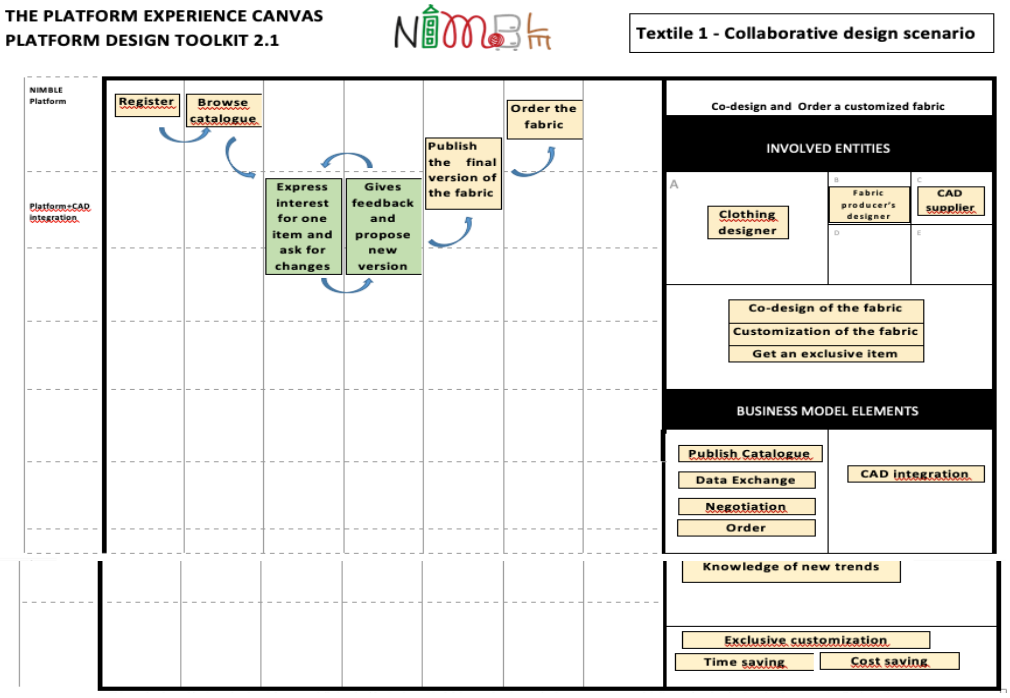


Figure 24 - Collaborative design scenario Platform Experience

Finally, the following canvas summarised the core elements of the target platform MVP with the key assumptions to be assessed during the validation phase. The metrics to be used to measure such a value proposition are now under definition as part of WP7 activities.

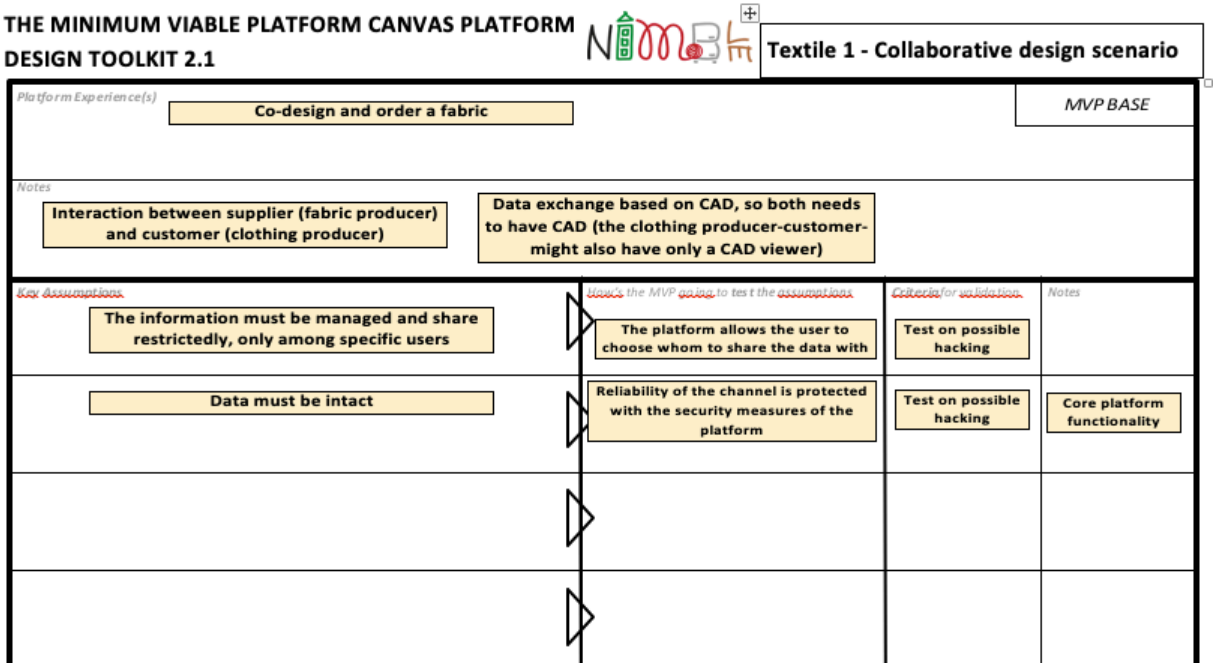


Figure 25 Colloaborative design scenarion Platform MVP Canvas

6.3.2 Certification of origin scenario

The second scenario focuses on the opportunity of developing a platform able to manage/issue certification of origin about textile/clothing products. In this case the role of platform owner could be played by Customs offices (interested to govern / track the certification of origin) in collaboration with Textile/Clothing associations and/or Sectorial district associations. The devised platform strategy is depicted in the Platform Design Canvas below.

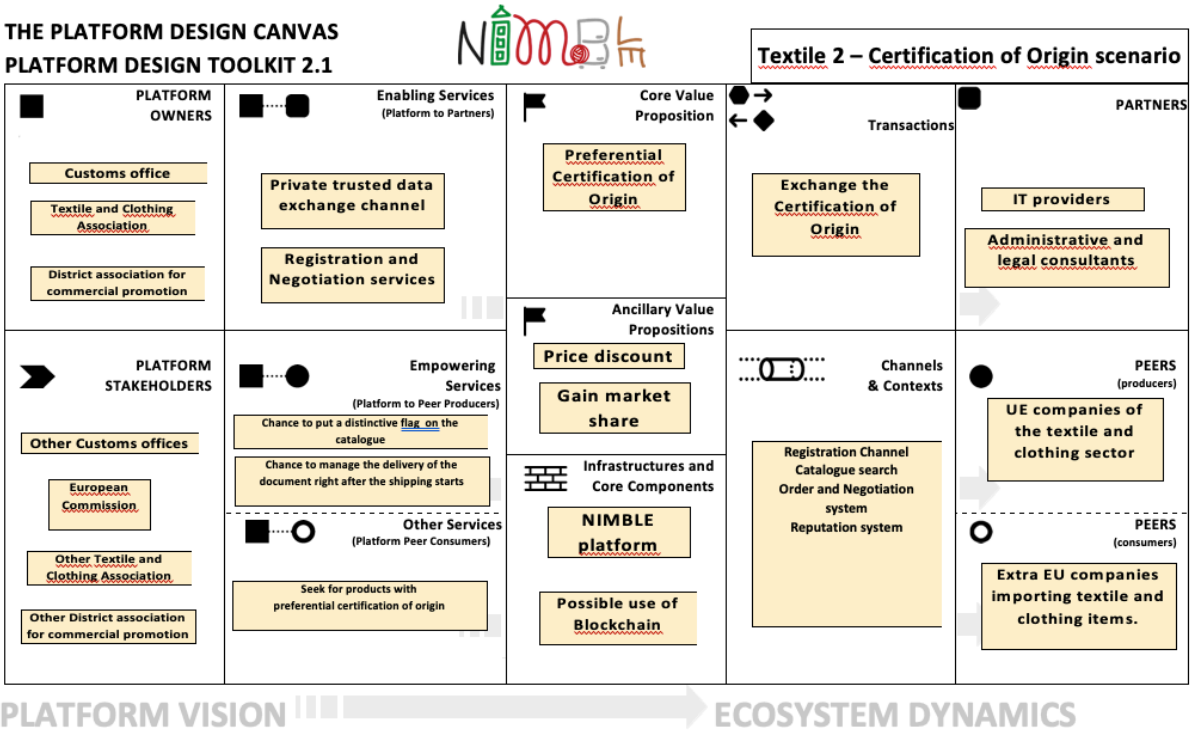


Figure 26 - Certification of Origin Platform Design Canvas

In this case, as depicted by the Ecosystem Canvas below, the IT providers can be partners (although the ownership could still be an option) offering integration services (for linking the software for certification of origin between the platform and the peers' backends) to the target producer and consumer peers. The producers are EU companies of the textile and clothing sector looking for a tool that can increase their reputation and bring their brand in new market. Instead, the consumers are (mainly) non-EU companies trading textile and clothing products that can exploit the platform to quickly find companies with proved certification of origin, which is a distinctive element for their customers (in particular in the luxury segment).

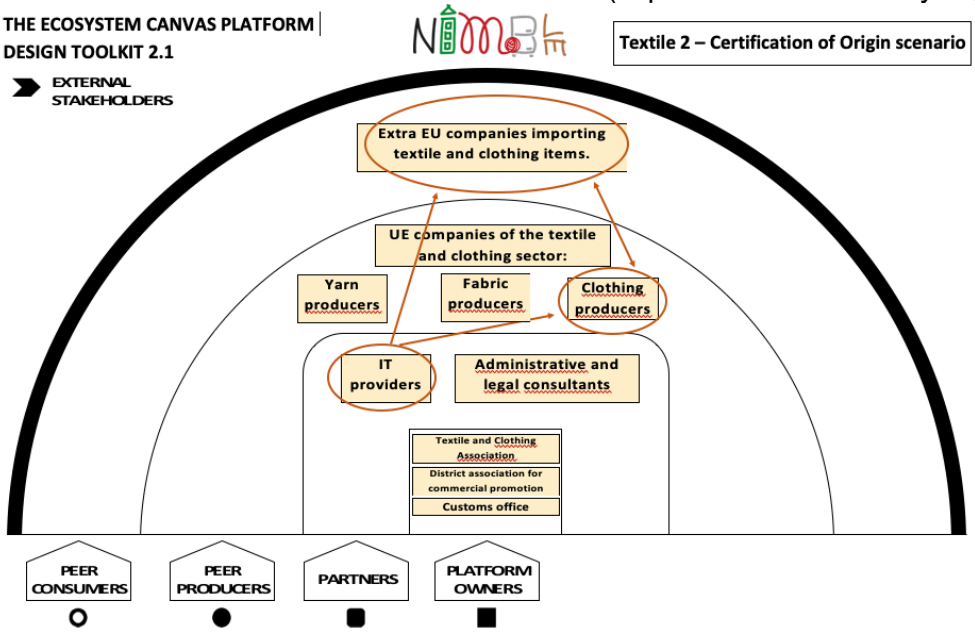


Figure 27 - Certification of origin Ecosystem Canvas

In this scenario, the core value proposition is the opportunity to easily get and exploit a preferential "flag". This clearly emerged from the entity portrait analysis of the clothing producer that, for example, with such a flag could gain a better visibility of existing and new markets.

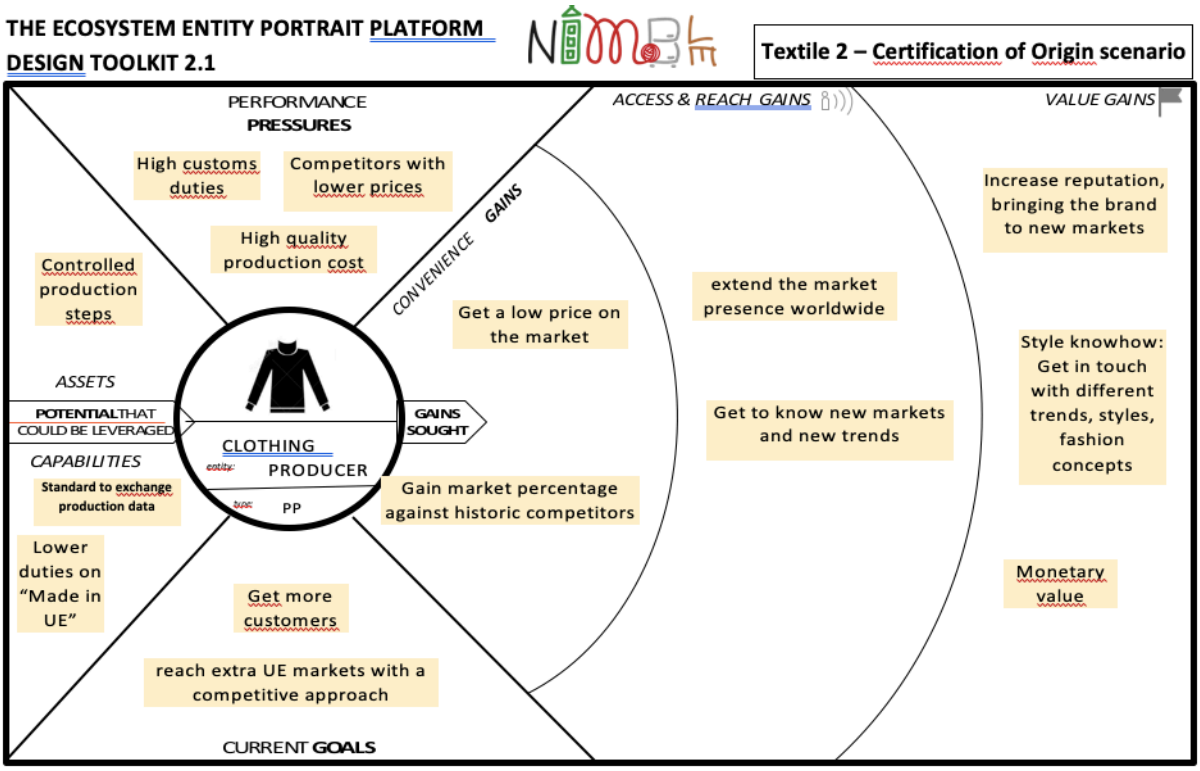
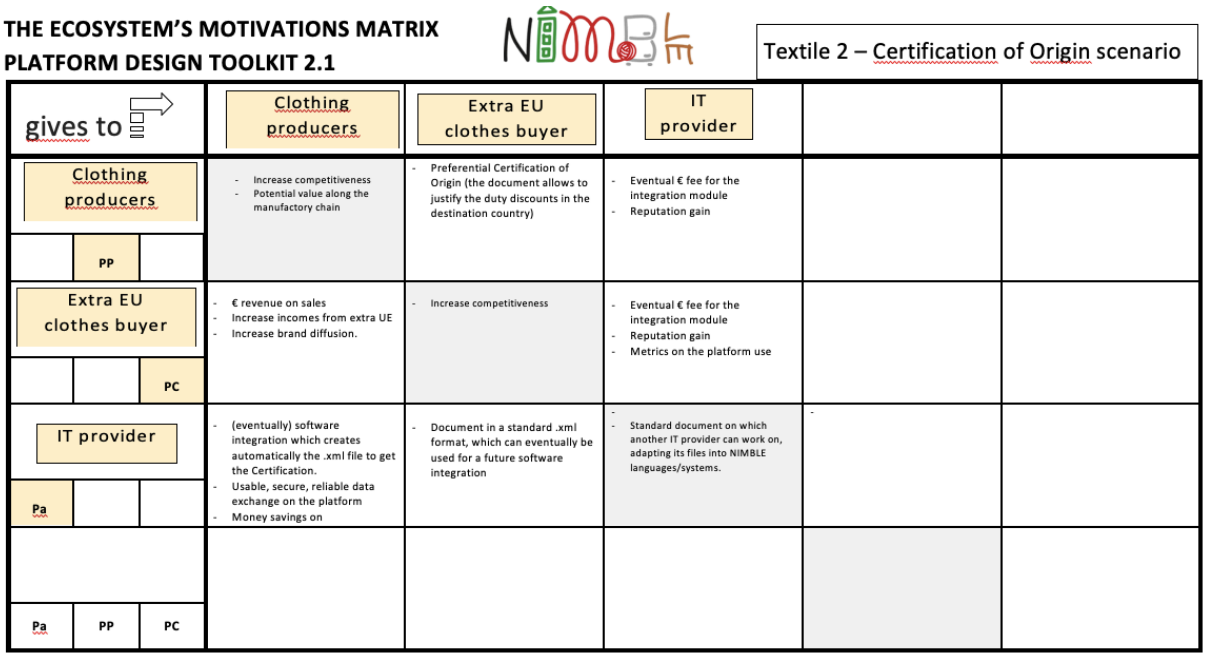


Figure 28 - Certification of origin scenario Entity Portrait

In more details, the following Motivation Matrix highlights all possible exchange of values between the identified core actors.



The following Transactions Board identifies the main expected transactions between the identified core actors. Notice that the certification of origin scenario can be implemented by simply using the core NIMBLE platform service (see list of channels in the transactions board), but a more advanced and distinctive solution can be also implemented by exploiting blockchain technology that is being developed as an advanced service for NIMBLE.

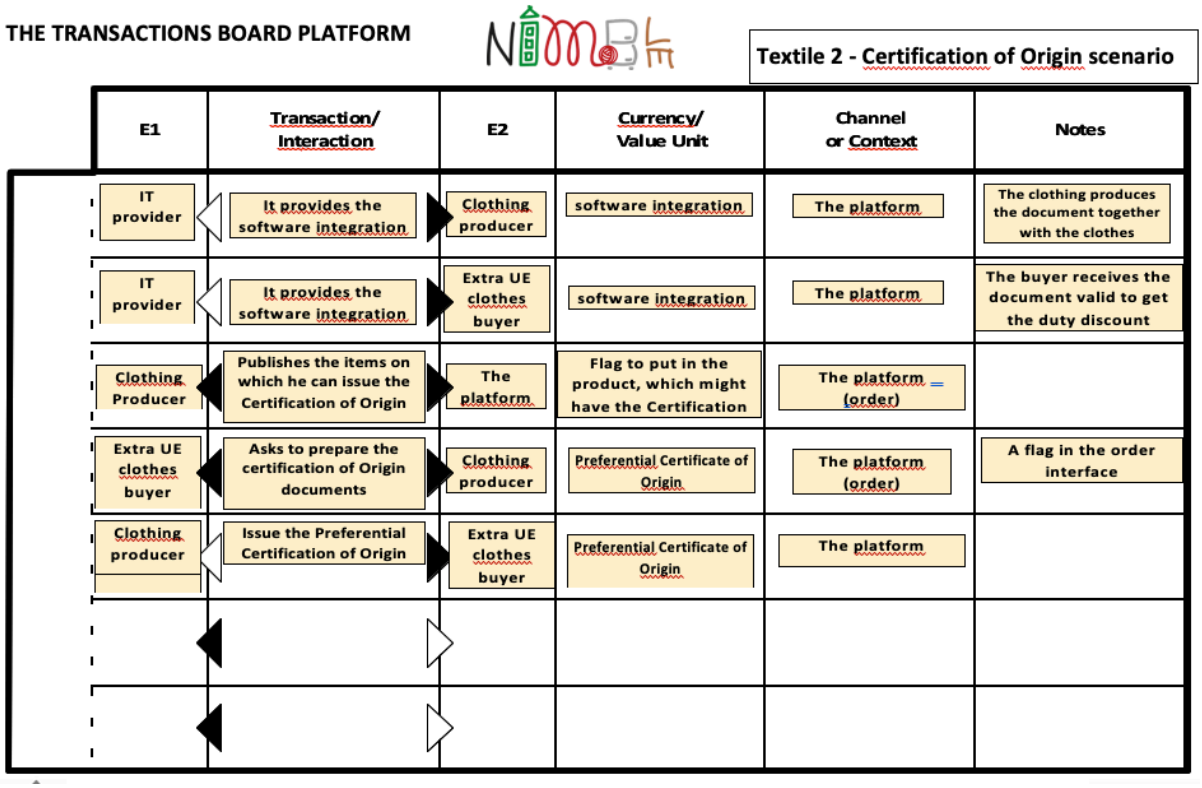


Figure 29 - Certification of origin scenario Transactions Board

Similarly to the certification of origin scenario, the Learning Engine canvas captures the possibility for the target users of obtaining more and more benefits once increasing the use of platform.

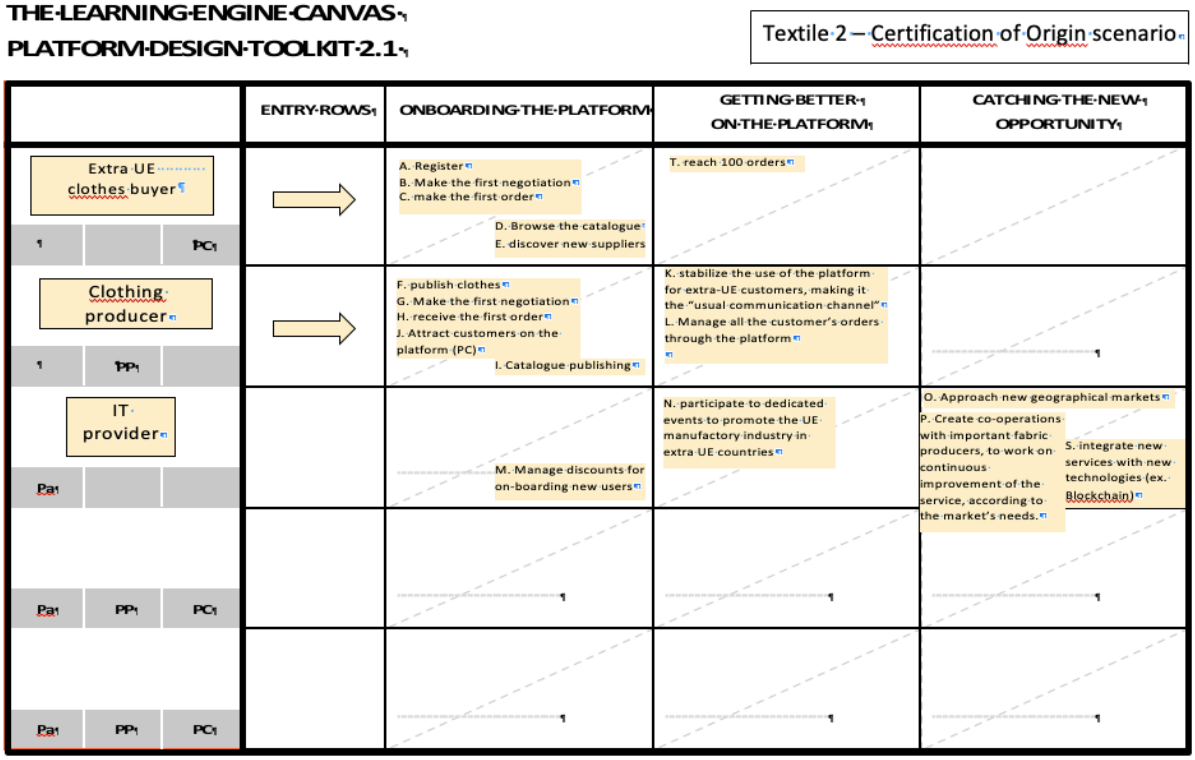


Figure 30 - Certification of origin sceanrio Learning Engine

The following canvas reports the main steps of the platform user experience including the possibility for the buyer to get the certification of origin certificate. In the same canvas, the partners already identified key elements of the platform business model in terms of core value propositions, technical services and expected benefits.

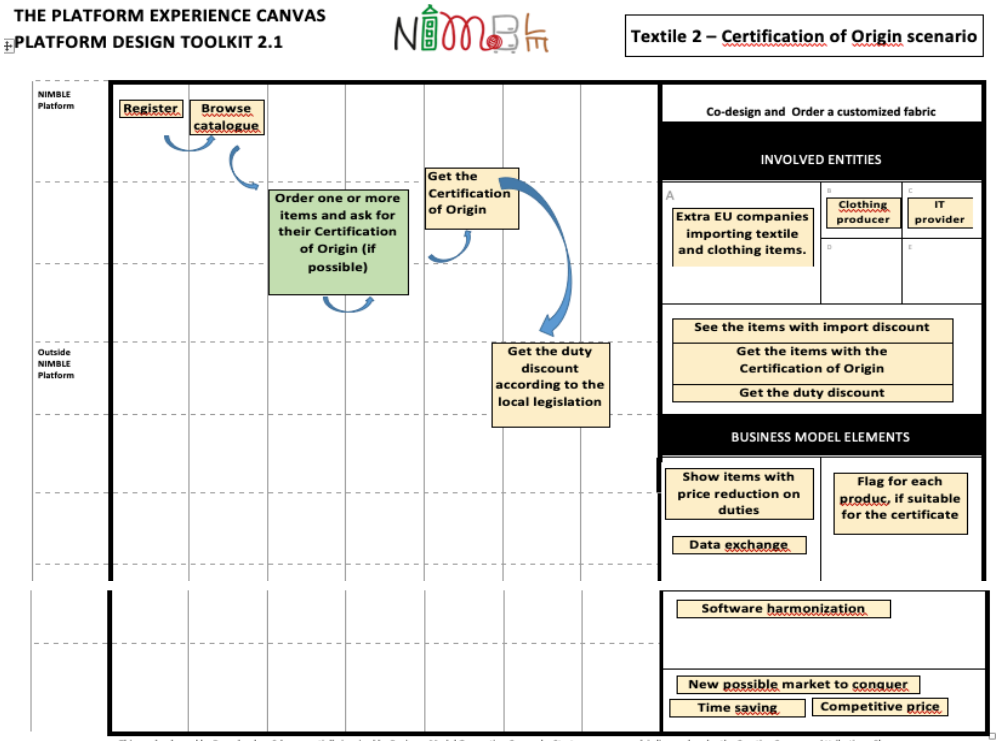


Figure 31 - Certification of origin Platform Experience

Finally, the following canvas summarises the core elements of the target platform MVP with the key assumptions to be assessed during the validation phase. The actual metrics to be used to measure such a value proposition are now under definition as part of WP7 activities.

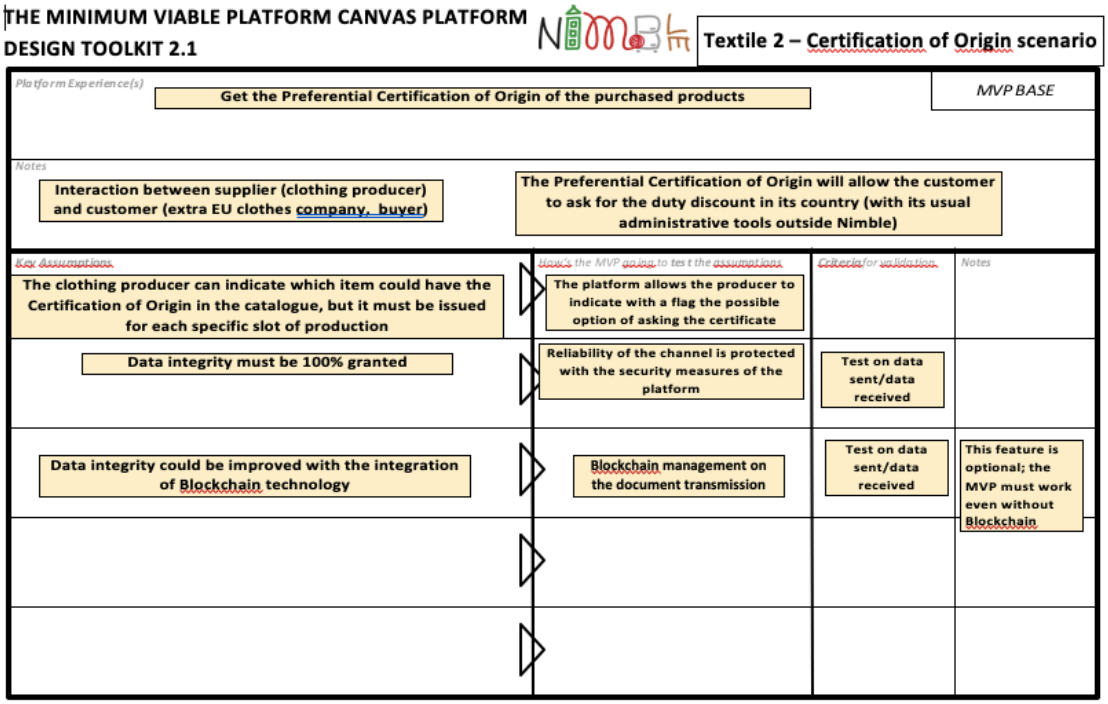


Figure 32 - Certification of origin scenario Platform MVP Canvas

6.4 Eco Houses Business Case

The Eco Houses business case started from the idea of using the NIMBLE platform to improve the information flow along the LINDBÄCKS supply chain to reduce costs by accelerating the information exchange by automating the order process and minimize errors caused by manual information transfer. During the project, additional technical solutions, extending the core NIMBLE services, have been designed and integrated in this business case:

- A 3D-configurator (developed by a third party software provider: Lundqvist) allowing customers to customize PODCOMP's bathroom and visualize each of their choices. Customers can choose from a wide range of tiles, bathtub, toilets, mirrors. The bathroom cost is displayed and automatically adjusted according to customer choice. As a result, customers get a better impression of the final customised bathroom during the ordering process and the customisation process is finalised at the same time.
- Track and Trace component for supply chain management that exploits IoT and blockchain technologies for providing full audit trail of data, creating an everlasting record along a supply chain.
- Life-cycle-analysis (LCA) component for estimating the environmental impact of the requested products and services.

The involved use case partners (LBAB, PODCOMP, BIBA, BAL) have started to design a strategy for a digital platform able to provide all such services, as summarized in the Platform Design Canvas below.

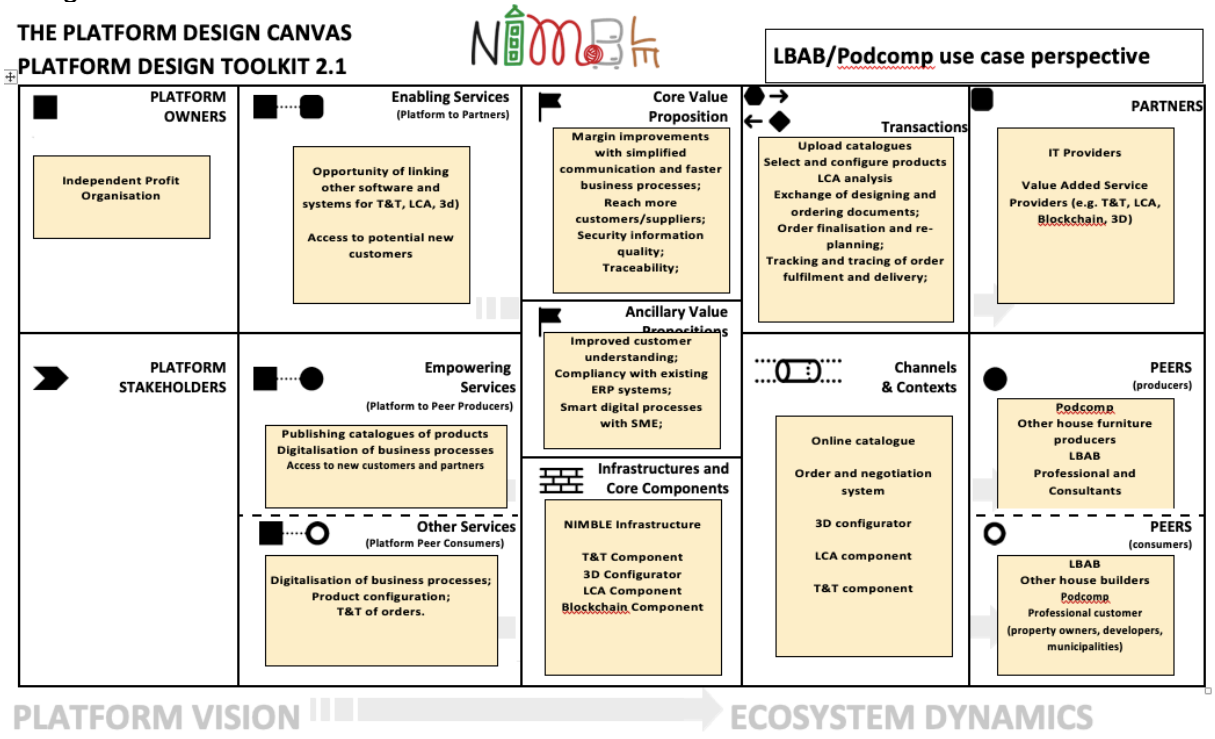


Figure 33 - Eco houses Platform Design Canvas

It should be noted that for this case, no platform owner has yet been identified. However, it was specified that the platform owner should preferably be an independent profit organisation, while LBAV, PODCOMP, BIBA and BAL will be peers in the target ecosystem, as depicted in the following Ecosystem Cavas.

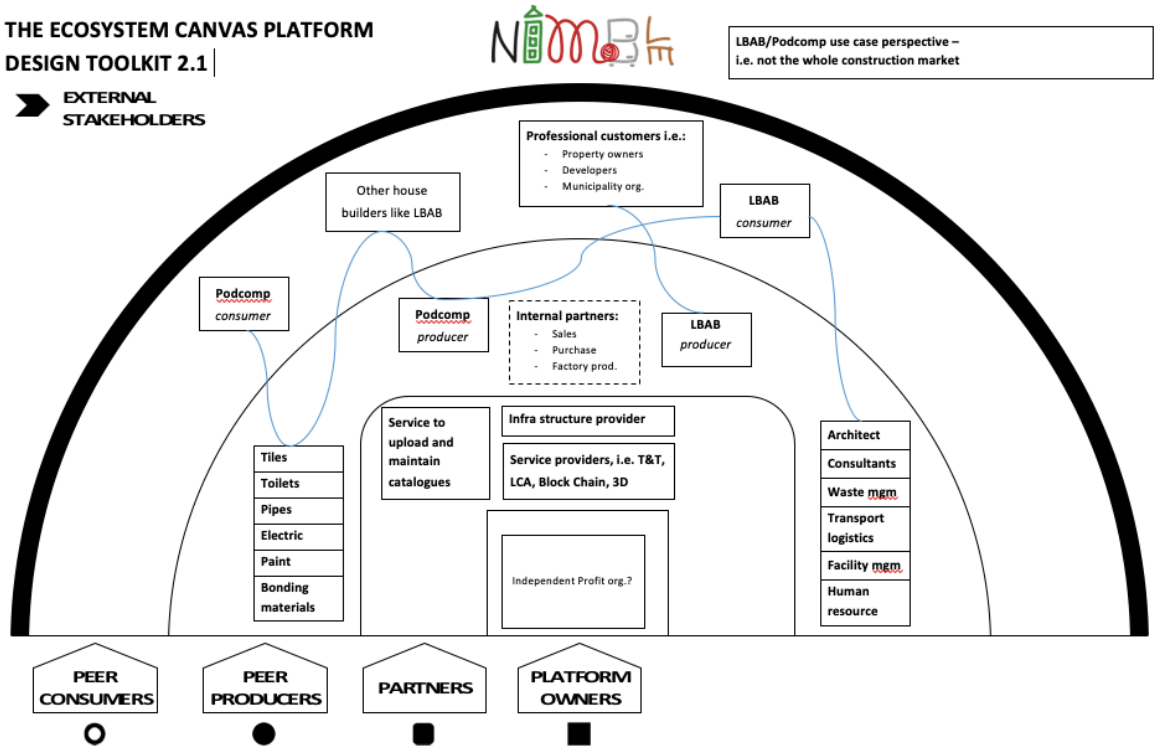


Figure 34 - Eco Houses Platform Ecosystem Canvas

Within the ecosystem, it is expected that the identified entities can play different roles. For example, PODCOMP could be both a peer consumer (acquiring bathroom elements from many suppliers) and a peer producer for LBAB and other house builders. Similarly, LBAB can buy solutions (consumer) from PODCOMP and other producers and be a producer for many customers (property owners, municipalities, etc.).

In this context, the following Entity Portraits focus on describing the perspectives of LBAB, PODCOMP and Sika (a partner provider for both PODCOMP and LBAB).

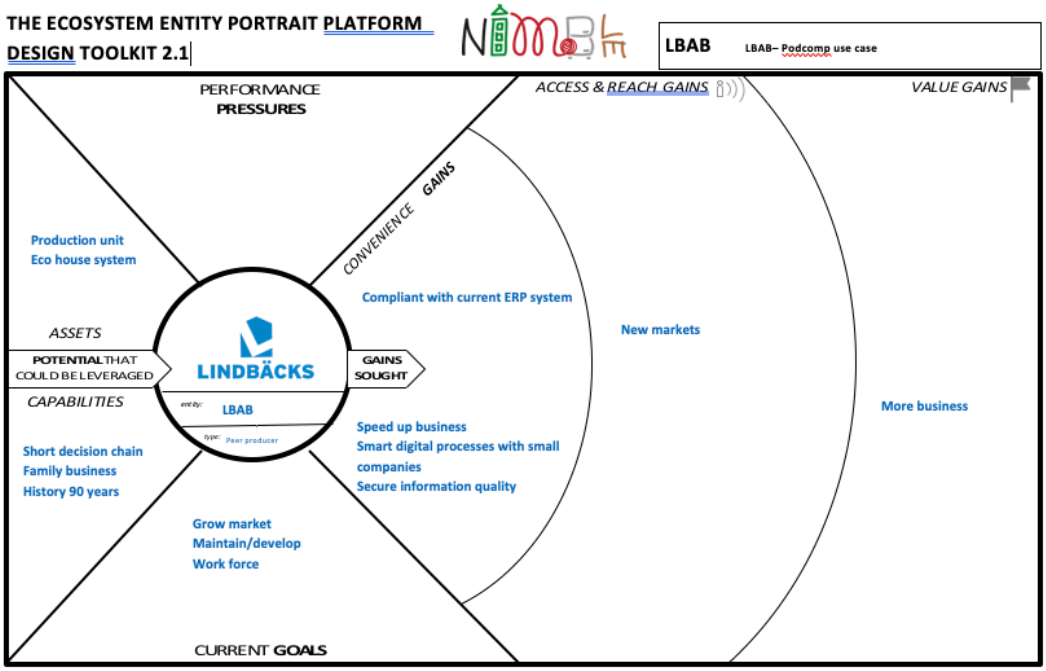


Figure 35 - LBAB Entity Portrait

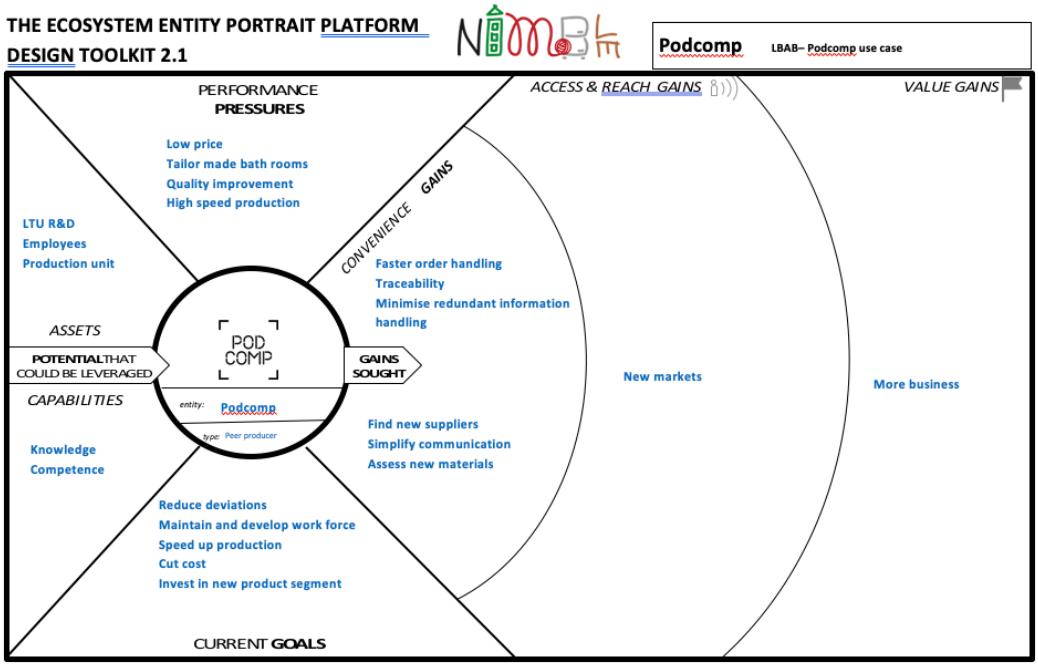


Figure 36 - PODCOMP Entity Portrait

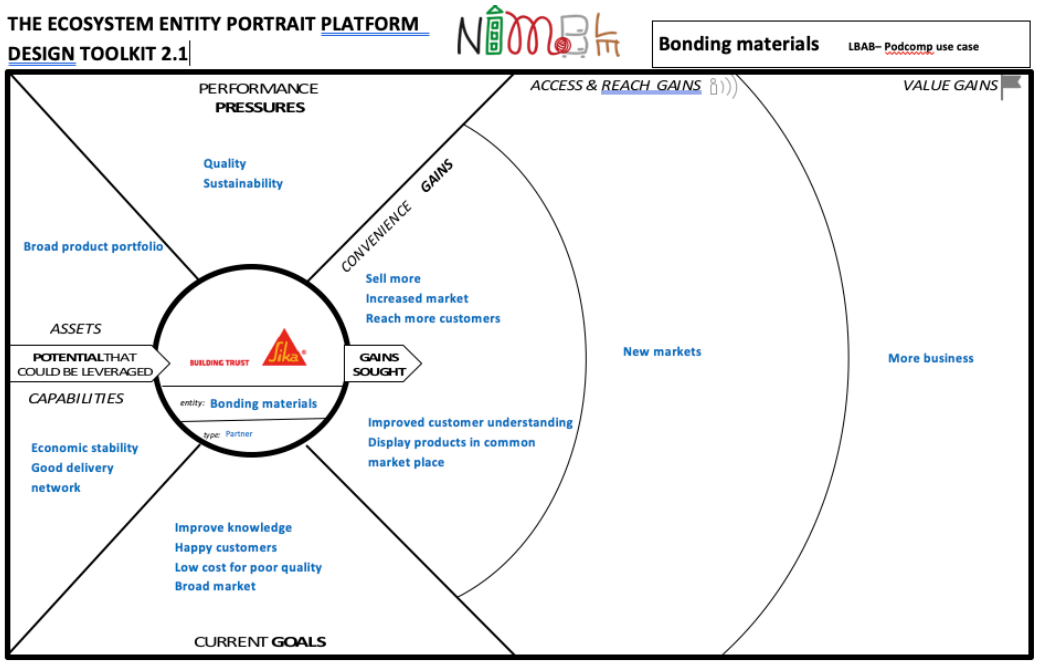


Figure 37 - Sika Entity Portrait

The following Motivation Matrix analyses all possible exchange of values between the identified core actors in the target ecosystem.

THE ECOSYSTEM'S MOTIVATIONS MATRIX
PLATFORM DESIGN TOOLKIT 2.1

LBAB – PODCOMP use case

gives to	LBAB/house builders	Podcomp/bath room builders	Suppliers - Bonding materials - Tiles	Customers	Service providers i.e. T&T, LPA, Block chain
LBAB Pa PP PC	- Growing market - Partnership - Setting standard - Agreements in sector - R&D	- Money - Challenge - Feedback - Reputation	- Feedback - Reference customer - Money - Reputation	- Cost efficient/effective housing - Trusted partnership - Speed of construction - Long term partner - After sales service - Sustainable buildings - LCA and LCC	- Money - Push for new services - New markets
Podcomp Pa PP PC	- Best bath rooms - Stability - Feedback - Product deviation mgm - Speed of delivery, JIT - Offer housebuilder turn key supplier - Compleeted bathroom - Realtime production status T&T	- Production, i.e. sales - Exchange know how - Partnership	- Feedback - Money - Challenge, development partnership - Growing market	- Sustainable products - No water leakage - Low ensurance cost	- Money - Push for new services - New markets
Bonding materials Tiles Pa PP PC	- Stability - Quality - Knowledge - Product development	- Stability - Quality - Knowledge - Product development	- Competition/challenge - Sector associations - Shared cost for R&D - Rules and regulations - Enhanced competence	- New solution to problem - Improved operation and maintenance - Stability - Cost reduction	- Money - Push for new services - New markets
Customers Pa PP PC	- Money - Sales - Reputation - Challenge - More customers	- Money - Sales - Reputation - Challenge - More customers	- Feedback - Knowledge	- Recommendation - Knowledge transfer - Shared experience	- Money - Feedback
Service providers i.e. T&T, LPA, Block chain Pa PP PC	- Additional value to customer - More customers attracted	- Additional value to customer - More customers attracted - Offer recognisable services for customers	- New market place - Trusted green LPA labels, new service	- Offer recognisable services for customers	- Challenge, development partnership

Figure 38 - Eco Houses Platform Motivation Matrix

The Transaction Board below focuses on relevant transactions that need to be supported by the envisioned platform. Notice that the channel column lists the channels that are currently used by the involved parties and will be replaced by the NIMBLE core services (e.g. order and negotiation service).

THE TRANSACTIONS BOARD PLATFORM

LBAB use case

E1	Transaction/ Interaction	E2	Currency/ Value Unit	Channel or Context	Notes
LBAB	Project production plan Gant chart	Podcomp	Number of bath rooms Info when	Mail/PDF	
LBAB	Drawings	Podcomp	Zise, numer of types Info what	Mail, drawing, PDF	
LBAB	Order/confirmation BOM/delivery plan	Podcomp	Info on customized choises Order	Mail, word, PDF	
LBAB	Tracking and tracing	Podcomp	Production/delivery status info	Website	
LBAB	Order changes Production changes Delivery changes	Podcomp	Information and confirmation Re-plan	Mail, phone	
LBAB	Verification of sub-delivery (one project has got xx weekly deliverys)	Podcomp	Verify before transport	Phone, mail	
LBAB	Invoice Payment	Podcomp	Invoice	Mail	

Figure 39 - Eco Houses Platform Transactions Board (1)

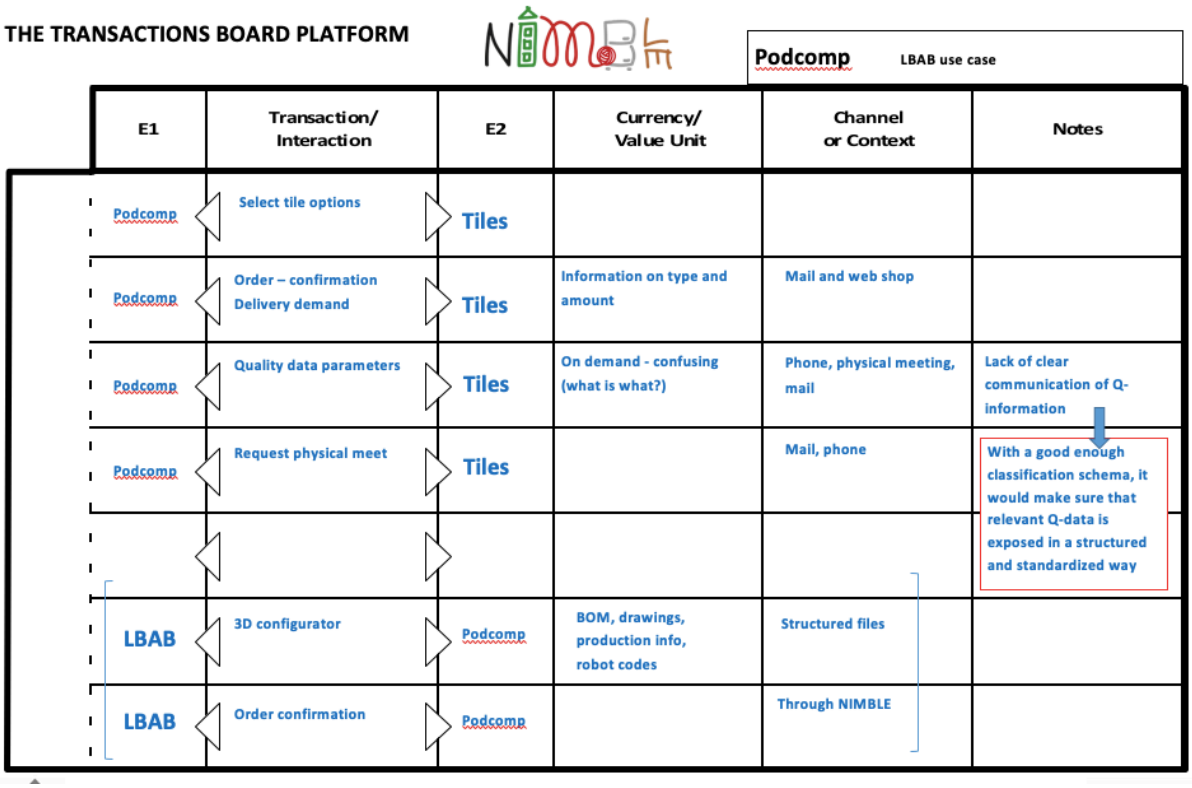


Figure 40 - - Eco Houses Platform Transactions Board (2)

Starting from these transactions, the following Platform Experience Canvas depicts the main user journey between the different, main platform components, including NIMBLE core components (Online catalogue and order process) and external services/tools (3D configurator, LCA, T&T). This experience will be the reference scenario for the validation activities of this business case. The core value proposition to be assessed is the margin improvements throughout initiation and execution. The metrics to be used to measure such a value proposition are now under definition as part of WP7 activities.

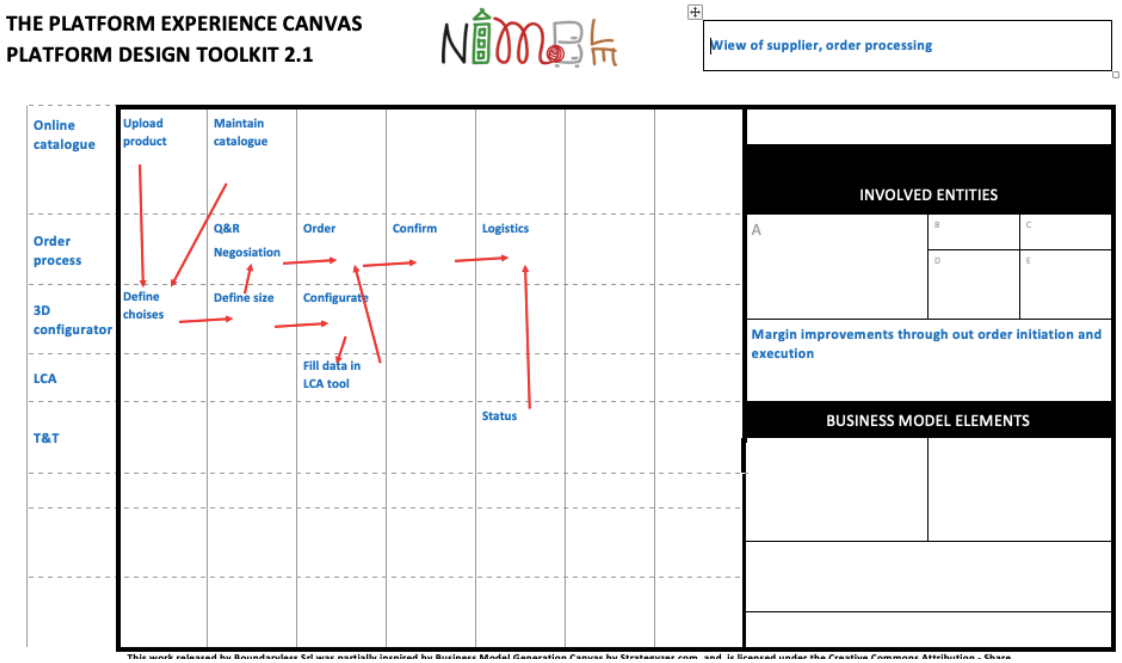


Figure 41 - Eco Houses Platform Experience Canavas

6.5 White Goods Business Case

The White Goods business case aims to exploit the heterogeneous data management capabilities of the NIMBLE Platform and its open interface towards third party's software. By using an extension of the Product Avatar (an external component developed by HOL) interfacing to the NIMBLE platform will allow Field Service Technicians (FST) to access transparently to a set of information that will be used to improve the effectiveness of repairing, and to improve the product quality by feeding back to the goods producer (WHR) data about the performed intervention.
It is worth to highlight that this business case can be considered as an instance of a broader business case where the NIMBLE platform can be used as a core element for trading data among distinct actors: data producers and data consumers.
Following this vision, the involved use case partners (WHR and HOL) have started to define a platform strategy as summarized in the following Platform Design Canvas.

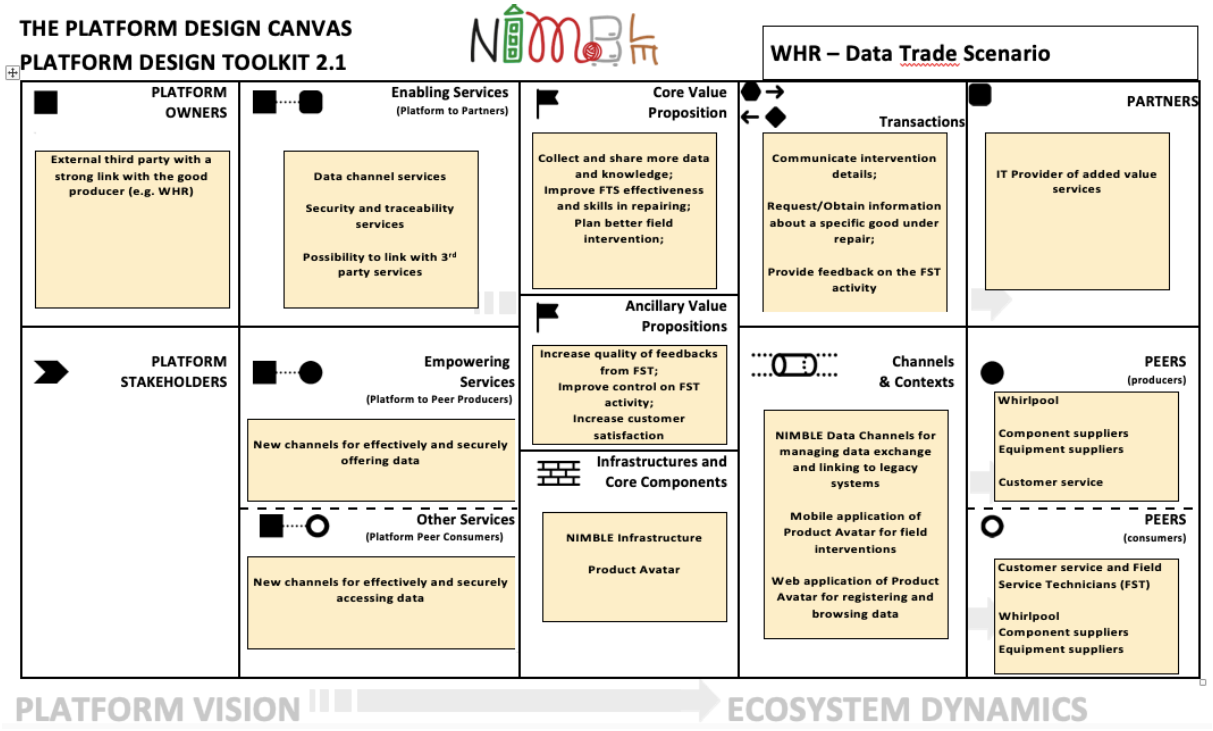


Figure 42 - White Goods Platform Design Strategy

Notice that a platform owner has not been identified yet, but it was specified that it should be an external third party with strong links with the reference good producer (WHR). The actual target ecosystem is depicted in the following Ecosystem Canvas.

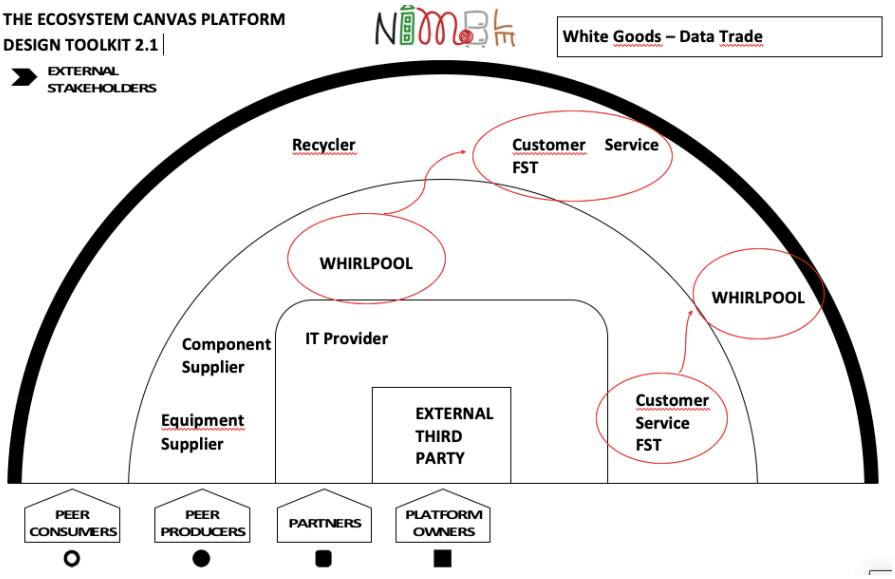


Figure 43 - White Goods Ecosystem Canvas

During the workshop, the use case partners focused their analysis on the (current) core entities (WHR and FST) that can both play the role of peer producer and peer consumer of data. For these entities, the following Entity Portraits were developed. However, other entities have also been identified, such as the component and equipment suppliers and recycler companies. Specifically, the involvement of the latter in an extension of this specific business case was discussed during the workshop and will be further investigated by HOL and WHR.

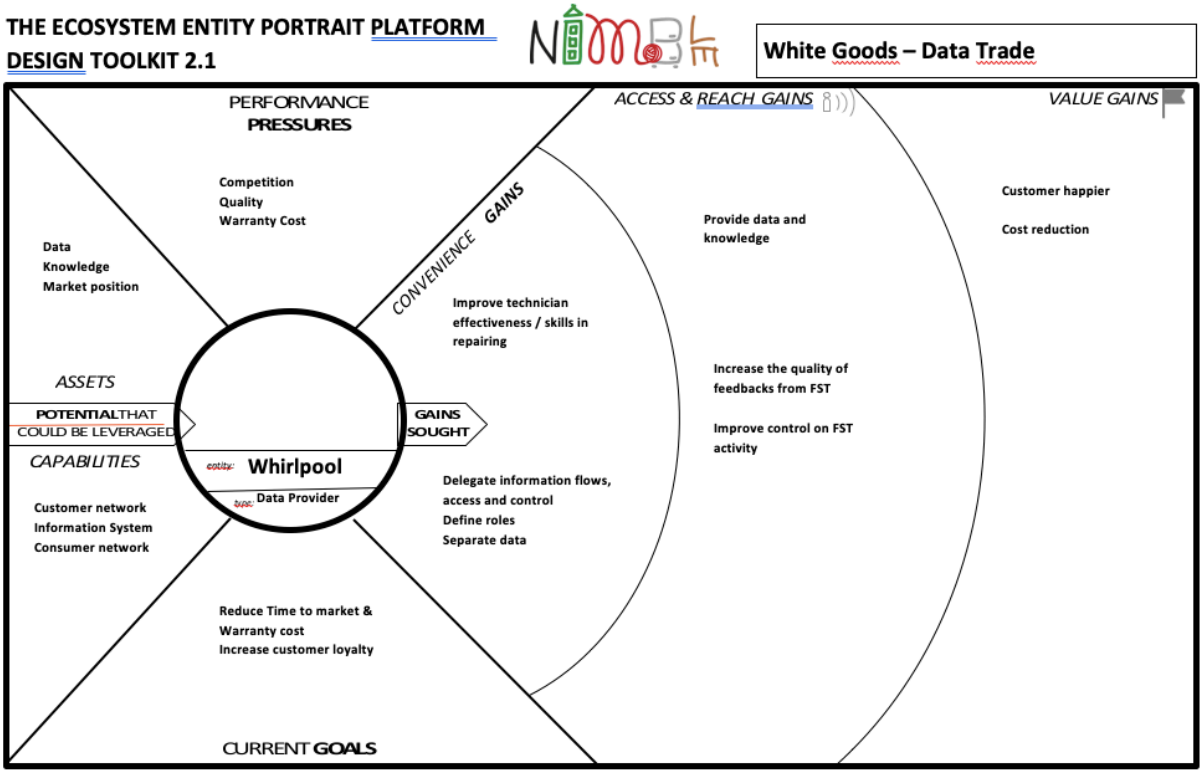


Figure 44 - Whirlpool Entity Portrait

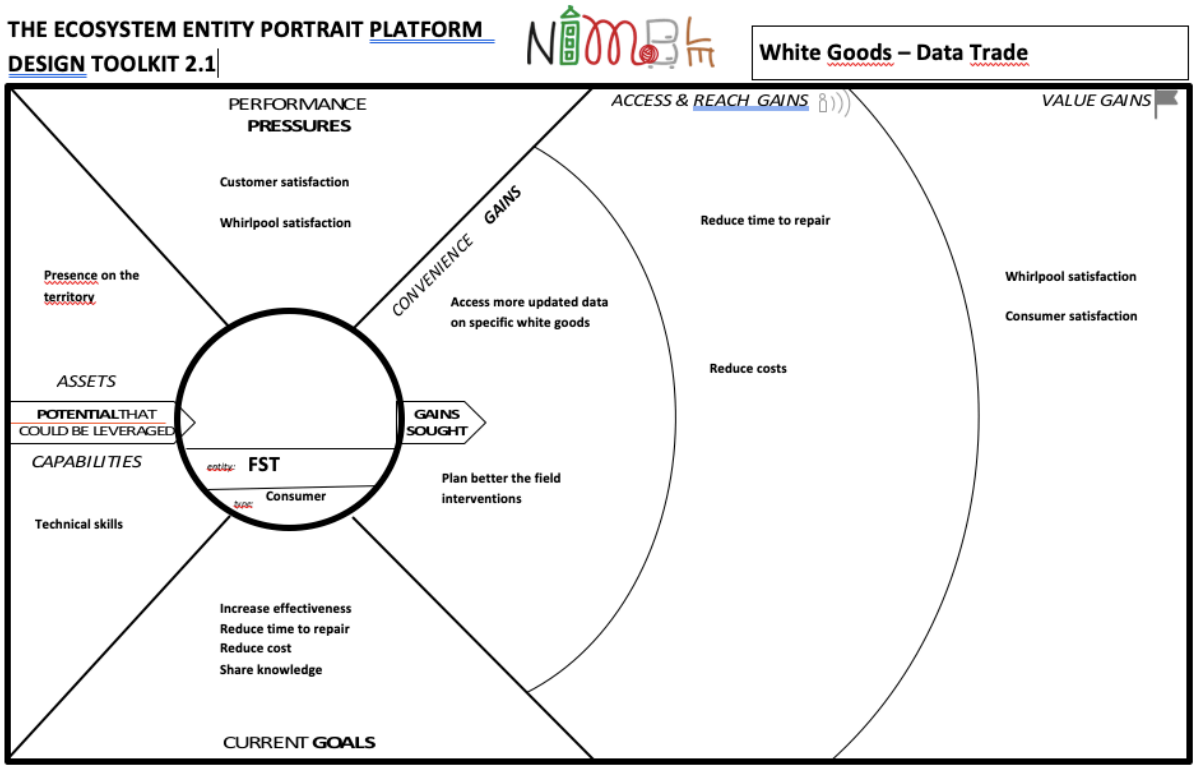


Figure 45 - FST Entity Portrait

The following Motivation Matrix provides a detailed analysis of the possible value exchanges between the identified actors, including the aforementioned Recycler.

THE ECOSYSTEM'S MOTIVATIONS MATRIX PLATFORM DESIGN TOOLKIT 2.1

White Goods – Trade data

gives to	WHR	FST	Component supplier	Recycler	
WHR Pa PP PC	Share knowledge Experience	Data about product history knowledge Competence	Feedback on quality of components	Appliance data history	
FST Pa PP PC	Feedback on intervention Customer expectation	Share knowledge Share experience	Substituted components' info		
Component Supplier Pa PP PC	Data on components Better knowledge on how to test/maintain	Data about components	Share info and knowledge on component suppliers		
Recycler Pa PP PC	Participation in value circular economy	Generate stats of components	Status of components	Share info about best producers	

For the implementation and validation of the business case, it has been decided to focus on the following main transactions, including the exchange of data between WHR and FST.

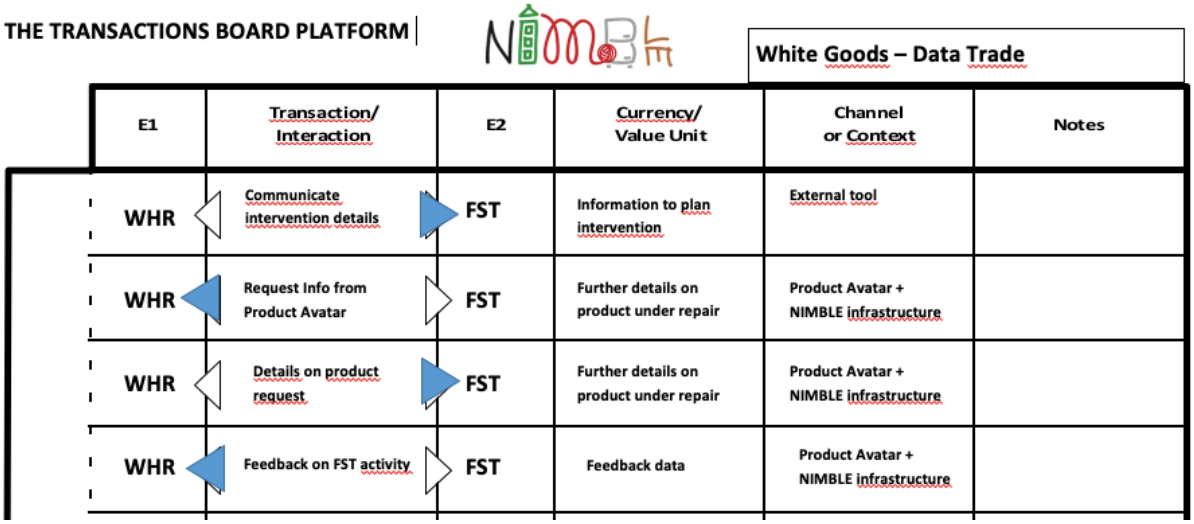


Figure 46 - White Goods Transactions Board

The transactions listed in the board above will be implemented in a system that mainly includes NIMBLE as a mean to securely exchange data with the Product Avatar as a user interface. Specifically, the overall platform experience is shown in the canvas below. The expected main value proposition is in fact to provide and obtain additional data and knowledge through the actual collaboration (data trading) between the involved partiers. However, as reported in the Entity Portraits, related value propositions include for example: increasing the effectiveness of repairing / skill in repairing (for WHR) and to plan better interventions and improve customer satisfaction for (FST).

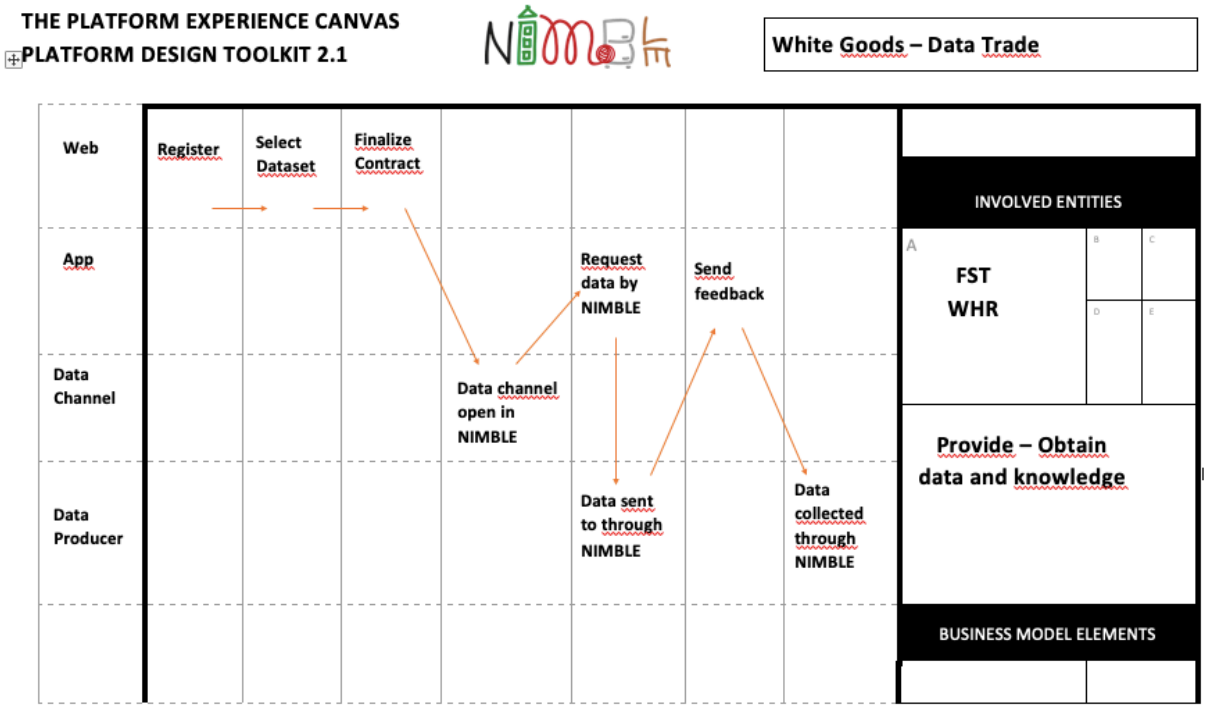


Figure 47 - White Goods Platform Experience Canvas

7 Conclusions

The analysis carried out in this document are part of continuous work performed in the scope of Task 8.7 and reported in the project Business Plans (D8.11, D8.12, D8.13) and Innovation, Exploitation and Standardisation reports (D8.15, D8.16).

Starting from the outcomes reported in previous D8.11 and D8.15, the present deliverable:

- gives a summary and update of the NIMBLE solutions (as exploitable results) and their innovative aspects;
- Provides an update on the NIMBLE exploitation strategy to follow;
- Provides a more comprehensive analysis of the project business cases, by following an existing toolkit (Platform Design Toolkit), that supported use case partners in starting to define a concrete platform strategy based on the NIMBLE platform.

Specifically:

- In Section 3, we reported a brief description of NIMBLE and its exploitable results;
- In Section 4, we analyzed the innovation potential of NIMBLE, in terms of:
  - *Opportunity*; i.e. the market context where NIMBLE will operate, including: trends, drivers, customers' expectations, etc.
  - *Value added*; i.e. ability of the NIMBLE solution to address the existing needs.
  - *Competitive landscape*; i.e. existing/potential competitors.
  - *Unique selling points*; i.e. the main factors that will make the NIMBLE solution emerge.
- In Section 5, we introduced the main exploitation lines devised for NIMBLE and reported about the Consortium decision to focus on an open source-based strategy. The selected strategy has led to the need for business leadership for launching new NIMBLE platform instances on the market. Therefore, as part of the NIMBLE Platform Launch Manual we devised a methodology to support new potential platform owners to define their own platform strategy.
- In Section 6, we reported how we applied the devised strategy to start defining a platform strategy and a preliminary business model for the project business cases.

The developed business cases will be the starting point for:

- the coming validation activities of the project use cases, since there are now identified target scenarios and the respective core value propositions and assumptions to be assessed during validation activities;
- the development of platform-specific business plans, with:
  (i) a clear platform owner identified;
  (ii) the actual definition of the IP package and exploitable assets (NIMBLE + confidential / sectoral information) to be licensed;
  (iii) an analysis of the innovation potential of the single (vertical) platform mainly based on the following elements:
    a. *Future Proofing*: Incorporate tools for developing a "futurist perspective" on industries and markets and developing flexible models for thinking about and designing a specific sectoral supply chain.
    b. *Economic Analysis*: Develop an understanding of the economic value-creation potential of high-priority, Furniture sector targeted supply chain platforms;

c. *Services*: assess top line (service, innovation, lead time) and cost savings impact the platforms will have on the current supply chain model as well as those of suppliers, partners and even competitors.
d. *Value Sharing*: Understand value-sharing dynamics between sectoral companies and users of supply chain platforms including platform switching costs and barriers to entry.