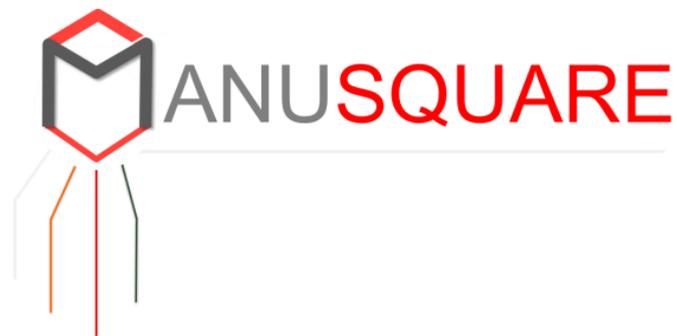


Horizon 2020 – The EU Framework Programme for Research and Innovation
Project Co-funded by the European Commission
Contract number: 761145
Call identifier: NMBP-22-2017
Project Start Date: 1st January 2018



MANUfacturing eco**S**ystem of **QUA**lified **R**esources **E**xchange

D1.1
Stakeholder analysis

Dissemination Level	Public
Partners	SINTEF, SUPSI, and all consortium partners that were involved in the study
Authors	Emrah Arica, Elise Landsem, Manuel Oliveira
Planned date of delivery	M6 – June 2018
Date of issue	28 th October 2018
Document version	Final 1.0

DOCUMENT HISTORY

Version	Issue date	Content and changes	Author
0.1	15.06.2018	Structure and outlines of the report	SINTEF
0.2	27.06.2018	Initial draft of the main sections of the report	SINTEF
0.3	11.07.2018	Preliminary report	SINTEF
0.4	10.08.2018	Deliverable review	Andrea Bettoni
0.5	28.10.2018	Deliverable review	Donatella Corti
1.0	28.10.2018	Quality assurance	Silvia Menato

Role	Partner	Person
Reviewer 1	SUPSI	Andrea Bettoni
Reviewer 2	SUPSI	Donatella Corti
Quality assurance	SUPSI	Silvia Menato

TABLE OF CONTENTS

Document history	2
Table of contents.....	3
List of abbreviations	4
1 Executive summary.....	5
2 Introduction.....	6
2.1 Aim and scope of the stakeholder analysis.....	6
2.2 Relationships of T1.1 with other tasks	7
2.3 Outline	8
3 Methodology.....	9
3.1 Consortium workshops	10
3.2 Interviews	10
4 Theoretical Background for Stakeholder Analysis.....	13
4.1 Stakeholder Type Identification and Classification	13
4.2 Classification of interests and requirements	13
4.3 Strategies to engage the classified stakeholders.....	14
4.4 Stakeholder analysis of innovative platforms.....	15
5 MANU-SQUARE Stakeholders.....	17
5.1 Stakeholder types.....	17
5.2 Stakeholders' interrelationships and value exchange relationships.....	18
5.3 Stakeholder type classification	19
6 Stakeholders' business needs and interests	21
6.1 Building business relationships and networks	21
6.2 Unused capacity exchange (buying/selling)	23
6.3 Production waste and by-product exchange.....	23
7 Stakeholder requirements for adopting the MANU-SQUARE platform.....	24
7.1 Volume and critical mass requirements.....	24
7.2 Functionality and information sharing requirements	24
7.3 Business support requirements	24
8 Implications and strategies for stakeholder engagement	26
8.1 Classification of stakeholders' needs and requirements.....	26
8.2 Implications on importance-influence of stakeholders and management strategies.....	27
9 Conclusion.....	30
Reference list.....	31

LIST OF ABBREVIATIONS

Acronym	Description
B2B	Business to Business
IPR	Intellectual Property Rights
IT	Information Technology
SME	Small and Medium Enterprises
WEF	World Economic Forum
WP	Work Package

1 EXECUTIVE SUMMARY

This report addresses the stakeholder analysis of the MANU-SQUARE (MANUFACTURING ecoSYSTEM of QUALIFIED Resource Exchange) platform that acts as a virtual marketplace bringing the available production capacity, as well as other virtual and physical assets, closer to the production demand to obtain the optimal matching. The stakeholder analysis includes identification of the type and interests of the stakeholders, as well as their requirements to adopt the platform. The outcome of the stakeholder analysis is meant to provide a foundational background for the follow up tasks towards building the reference model and architecture of the platform. Preliminary results of the stakeholder analysis study indicate the following outcomes:

- primary stakeholders of the platform are the direct actors of a business activity that will be triggered and / or supported by the platform or have direct impact on the development of the platform. In this context, manufacturers, start-ups, service providers, knowledge providers, and investors are identified as the primary stakeholders;
- secondary stakeholders influence the facilitation of the business activities generated between the primary stakeholders or on the adoption of the platform itself. In this context, innovation facilitators, multipliers, regulators, and consumers are identified as the secondary stakeholders;
- main needs and interests of the identified stakeholders are building business relationships and networks, utilizing unused production and know-how capacity, and utilizing the production waste and by-products;
- the needs and expectations of the companies significantly depend on the business maturity and characteristics of the company, which is further elaborated in the report;
- adoption volume of the platform is a critical requirement to adopt the platform;
- companies require as much information as they can get from the platform, however they hesitate to share information due to intellectual property concerns;
- there are mixed views on the requirements from the platform regarding its support level to the business activity: some companies require that the platform should be accountable for the business activity when it is triggered by it, which will increase the trust to the platform while others stated that the role of the platform should be limited to match-making of demand and supply between the actors, and the contractual agreements should be made outside of the platform;
- key stakeholders are those who will have significant importance and influence for implementation and adoption of the platform to achieve a critical mass, and realization of the requirements. Manufacturers and innovation facilitators are therefore considered to be key stakeholders.

The report consists of the following chapters:

- § 2 introduces the MANU-SQUARE project, the aim of the stakeholder analysis, and the relations of this task with other tasks in the project;
- § 3 describes the applied methodology which mainly consists of interviews conducted with potential stakeholders of the platform;
- § 4 outlines the theoretical background that have been benefited to identify and classify the stakeholder types and requirements;
- § 5 describes the identified stakeholders of the MANU-SQUARE platform, including the primary and secondary stakeholders;
- § 6 addresses the identified needs and interests of the stakeholders;
- § 7 addresses the requirements of the stakeholders to adopt the MANU-SQUARE platform;
- § 8 synthesizes the interests and requirements of the stakeholders on a framework modified from the Kano Model. The framework classifies the requirements into basic, performance, and unknown requirements;
- § 9 concludes the report.

2 INTRODUCTION

The MANU-SQUARE project creates an ecosystem that acts as a virtual marketplace bringing the available production capacity, as well as other virtual and physical assets, closer to the production demand to obtain the optimal matching (see Figure 1). This has two main advantages:

- the rapid and efficient creation of local distributed value networks for innovative providers of product services;
- the reintroduction and optimization in the loop of unused capacity and potential that would otherwise be lost.

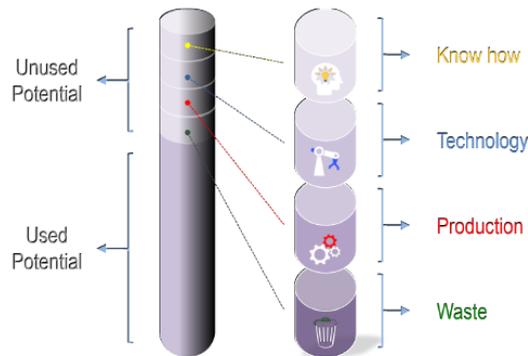


Figure 1 Composition of the unused potential

MANU-SQUARE establishes an ecosystem that is organized to match the needs of buyers with the availability of sellers in terms of know-how, technology, manufacturing capacity and waste. The associated MANU-SQUARE platform uses blockchain technology to ensure transparency and provide security, thereby fostering the building of trust amongst the different stakeholders of the platform. A manufacturer may have a role of a supplier (seller) or a customer (buyer). In the case of the latter, a manufacturing company uses the platform each time it requires to engage with the MANU-SQUARE ecosystem to fulfil a need, such as additional production capabilities. The platform performs the search for the optimal matching on a wide number of possible candidates from the MANU-SQUARE ecosystem, using a sophisticated criterion that ensures high level of quality, reliability of suppliers, reduction of costs and short time to close the business transaction. The generated ecosystem allows optimal matches also for offering resources other than production hours or tangible assets with the aim to identify and exploit unexpected synergies between participants and to promote the mutual interaction of diverse industries, also within different value networks, for beneficial reuse of competences and flows.

The main objectives of the project are:

1. to make European unused manufacturing capacity emerge towards its reintegration in the loop and the creation of local efficient value networks.
2. to support innovative SMEs and start-ups in finding the optimal suppliers to transform their business ideas into new product-services.
3. to seamlessly involve actors all along the entire value network including consumers for cross-fertilization of product-service solutions and underlying technologies.
4. to coordinate the whole MANU-SQUARE ecosystem towards a better use of resources and a more sustainable European manufacturing.

2.1 Aim and scope of the stakeholder analysis

The stakeholders analysis aims at fostering a wide adoption of the MANU-SQUARE project results by addressing interests, expectations, and requirements of the stakeholders from the very beginning of the project. To create a significant value to the stakeholders of the project, stakeholder analysis has the following objectives and scope:

- to identify and classify the potential stakeholders of the MANU-SQUARE platform;

- to map the needs and expectations of the potential stakeholders that can be addressed by the MANU-SQUARE platform;
- to identify the interests and requirements of the potential stakeholders for a wider adoption of the MANU-SQUARE platform;
- to develop strategies for satisfying the identified needs, expectations, and interests of the stakeholders;
- to review and revise, if needed, the status and requirements of the stakeholders yearly during the project.

2.2 Relationships of T1.1 with other tasks

Task 1.1 plays a fundamental role in understanding the interests and requirements of the potential stakeholders of the MANU-SQUARE platform. The outcome of this task will contribute to other tasks in WP1 towards the development of the reference model and the architecture of the platform, which will provide the foundational background for the following WPs. These relationships are depicted in Figure 2 and explained below.

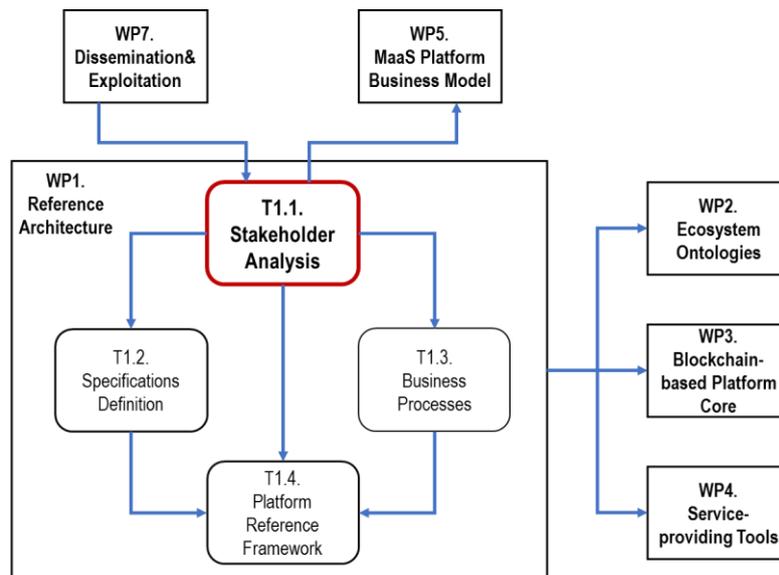


Figure 2 Relationships of Task 1.1 with other tasks and WPs

The interdependencies within WP1 are as follows:

- Task 1.2: the purpose of the task is to define the specifications of the MANU-SQUARE platform. The analysis from the interviews carried out in Task 1.1 provides important insights into the requirements for each type of stakeholder, which are prioritised according to the adopted strategy based on their importance and impact on the project.
- Task 1.3: the purpose of the task is to define business cases that embody the test scenarios to be implemented in the project. The end-user organizations within the consortium represent archetypes of stakeholders in the MANU-SQUARE ecosystem. The stakeholder analysis provides common themes to be explored in detail in the definition of the business cases.
- Task 1.4: the purpose of the task is to define the platform reference framework that addresses the requirements and needs identified in Task 1.1.

There is a bi-directional relationship between WP7 and Task 1.1: on the one hand, dissemination activities, entailing communication and engagement with relevant stakeholders of the MANU-SQUARE ecosystem, provide inputs for the stakeholder characterization and validate results of Task 1.1; on the other hand, the stakeholder analysis supports WP7 in shaping the dissemination strategy and the approach to community building.

Since WP2, WP3 and WP4 address different functional blocks of the MANU-SQUARE platform, the contribution of task 1.1 will be on the prioritisation of needs and requirements.

With regards to the business model (WP5), Task 1.1 contributes with the identification of the stakeholders and their importance, thus contributing to the definition of the market segments to be addressed by the MANU-SQUARE platform. The identification of the needs of the relevant stakeholders contribute to the initial definition of the MANU-SQUARE value proposition and the strategies defined for stakeholder management contribute to the definition of type of relationship and communication channels. Finally, for some stakeholders, Task 1.1 contributes to the identification of key partnerships in the delivery of the MANU-SQUARE value proposition.

2.3 Outline

This report is organized into 8 chapters. The first three chapters (§ 2, 3, 4) provide introduction to the report, explain the methodology applied, and outline the theoretical background, respectively. § 5, 6 and 7 present the identified stakeholder types, interests and expectations of the stakeholders, and platform adoption requirements of the stakeholders, respectively. The outcomes of the stakeholder analysis are consolidated in a framework in § 8, where implications and strategies to engage the classified stakeholders are discussed. The final chapter, § 9, concludes the report.

3 METHODOLOGY

The aim of MANU-SQUARE to create an ecosystem that acts as a virtual marketplace, implies the existence of a thriving and growing community of many different types of stakeholders, each one featuring one or more roles relevant to how MANU-SQUARE will operate. Whilst technology plays an important role in the success of such an ecosystem, it is the community of stakeholders that will ensure the success, thus it is important to carry out an analysis of the stakeholders covering several steps aimed at:

- identifying and classify who the stakeholders are;
- identifying what are the needs, requirements and interests of the stakeholders;
- devising the appropriate strategies for the management of the stakeholders, which determine which stakeholders have the greatest influence on the MANU-SQUARE platform.

To support the stakeholder analysis, the research methodology illustrated in Figure 3 was devised, consisting of different methods (additional details are provided in the subsequent subsections):

- A **literature study** was conducted to construct the stakeholder analysis methodology, as well as to identify the applied methods for classification of stakeholder types and their requirements. Stakeholder analysis reports from similar projects were also investigated for inspiration and benchmarking purposes.
- **Consortium workshops:** the MANU-SQUARE consortium is well-balanced and representative of key stakeholders of the MANU-SQUARE community, including research institutes, universities, pilot companies from the machining and textile sectors, and innovation centres. The organization of consortium workshops facilitated brainstorming and discussions among partners revolving the intermediate findings of Task 1.1,
- **Interviews** with relevant stakeholders who may be potential adopters of the MANU-SQUARE platform.

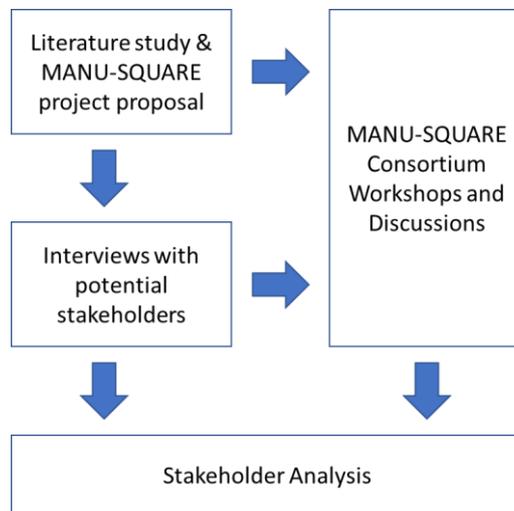


Figure 3 Research methodology

The application of the different methods to each step of the stakeholder analysis is summarized in Table 1.

Stakeholder Analysis Steps	Application of methods		
	Literature study	Consortium workshops	Interviews
Identification and classification of the stakeholders	<ul style="list-style-type: none"> - Stakeholder type classification models - Stakeholder analysis studies 	<ul style="list-style-type: none"> - Group discussion and workshop in consortium meetings for drawing the initial stakeholder map - Importance/ Influence matrix 	<ul style="list-style-type: none"> - Validating and revising the map

Mapping needs, interests, and requirements of potential stakeholders	- Stakeholder requirements classification models (e.g. Kano model)	- Preliminary results of the interviews were discussed in the workshop, thus fostering new discussion on needs and interests	- Identifying the stakeholder needs and interests
Development of strategies for satisfying the identified needs and interests of the stakeholders	- Stakeholder engagement frameworks (e.g. importance/influence)	- Internal discussion among the consortium partners about possible strategies to be adopted	- Identifying the platform adoption requirements

Table 1 Stakeholder analysis steps and applied methods

3.1 Consortium workshops

Two consortium workshops were organized, one in the beginning and one in the later stages of the stakeholder analysis task. The first workshop focused on identifying the potential stakeholders of the platform, with participants grouped into three groups. Groups involved representatives from each partner type (e.g. research institute, industrial company). One group discussed the potential stakeholders from the machining sector's perspective, while another one discussed it from the textile sector's perspective. The remaining group focused on generic stakeholders of the platform. After the brainstorming session of each group separately, the findings were discussed and synthesized in a plenary session.

3.2 Interviews

MANU-SQUARE platform will involve many different types of stakeholders, with varying levels of interaction with each other and with the platform. Due to the large and varying scope of the project stakeholders' characteristics, the decision was to prioritise and focus on the stakeholder types that were assessed as potential direct users of the MANU-SQUARE platform, for which impact on business relations is generated (e.g. traditional manufacturers). Interviews were therefore conducted with external people from different organizations representing prioritized stakeholder types.

The prioritization of the stakeholders was done through the following approaches:

- the proposal included a preliminary stakeholder classification based on the project's focus areas;
- each consortium partner constructed an importance/influence matrix for classification of the stakeholders as part of the first workshop (§ 3.1);
- the initial set of interviews with relevant stakeholders included the validation of the initial stakeholders map and their prioritisation.

A total of 34 interviews were carried out, involving diverse stakeholder types, with varying number of representatives from each stakeholder type. Traditional manufacturers are the most represented in the sample since they will be the main and direct users of the platform. Manufacturers of different sizes and with varying types of manufacturing contexts (e.g. process type, discrete manufacturing, technology producers) were involved. Table 2 shows the number of interviews with each stakeholder type.

Stakeholder type	Number of Interviews
Manufacturers	18
Innovation facilitators	2
Start-ups	4
Service providers	5
Knowledge Providers	3
Multipliers	1
Investors	1

Table 2 Number of interviews with different stakeholder types

The 34 interviews were conducted by six consortium partners across five countries in Europe, including Norway, UK, Italy, Switzerland, and Portugal. The companies were selected from each partner's existing networks. To support the different interviewers and to make easier the comparative analysis of collected information, a common interview guide

was prepared and used by all partners to collect data. The interview guide structure, illustrated in Figure 4, consisted of seven distinct steps:



Figure 4 Interview guide

- **Introduction.** This consisted of introducing the interviewee to the MANU-SQUARE project and clarifying the purpose of the interview, as well as obtaining consent.
- **Background.** The aim was to collate as much background information as possible with regards to the interviewee and his / her role within the organization he / she represented.
- **Organization Characteristics.** The purpose was to identify the characteristics of the organization and assess its potential role in the MANU-SQUARE stakeholder map.
- **Market Needs and Issues.** The purpose was to identify the current situation of the organization with regards to the underlying premises of the MANU-SQUARE ecosystem, namely the interest of stakeholders to share unused capacity in terms of waste, production, and know-how. The questions provided as a guide were dependent on the main business role of the stakeholder.
- **Business relations and barriers.** The purpose was to identify the key challenges and barriers for creating sustainable relationships across stakeholders in their business.
- **Adoption Factors.** At this stage, the interviewee would be presented with the key concepts of the MANU-SQUARE platform and the key adoption barriers were explored.
- **Further Engagement.** With the closing of the interview, the stakeholder map was assessed for validity and a discussion would take place to establish the engagement strategy with the interviewee.

Not all the 34 interviewees gave consent for audio recording: twelve were recorded and transcribed, whilst the remaining ones were supported by short-hand note taking. The main constructs of the stakeholder needs, interests, and platform adoption were extracted from the transcribed interviews through open coding. The noted interviews were used as contribution for verification and enrichment of the codes, and hence validation of the findings. The findings of the interviews were synthesized in a framework and discussed in the second consortium workshop, which contributed to the validation of the findings. Further chapters consolidate and present the findings of the study.

An overview of the execution of the methodology is captured in Figure 5.

D1.1 – Stakeholder analysis

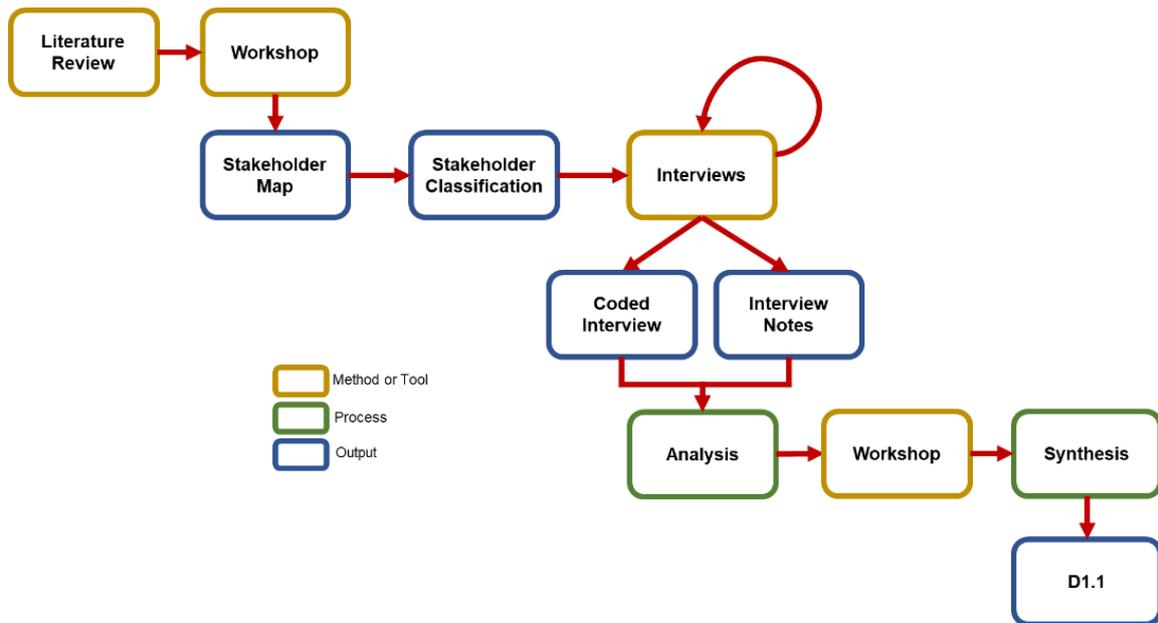


Figure 5 Execution of the research methodology

4 THEORETICAL BACKGROUND FOR STAKEHOLDER ANALYSIS

This chapter provides a theoretical background on stakeholder analysis, outlining widely adopted classification models for stakeholder types, interests and requirements.

4.1 Stakeholder Type Identification and Classification

Stakeholders are defined as "any group or individual who can affect or is affected by the achievement of the firm's objectives" (Freeman 1984). According to Kochan and Rubinstein (2000) the following criteria can make an organization/individual a stakeholder:

- stakeholders must hold assets that are critical for the organization/project success;
- stakeholders must put their assets at risk in the enterprise/project;
- stakeholders must have sufficient power to have influence.

The stakeholder analysis is usually used as a method to identify and categorize stakeholders, as well as identifying their interests and objectives. Although originally a tool in business management, stakeholder analysis is applied in many different fields and by a range of users within both the public and the private sector (Reed et al. 2009). Several models are proposed to classify the stakeholder types, depending on the field and type of project where stakeholder analysis is carried out. Savage et al. (1991) classify stakeholders based on their potential for impacting and cooperating with the project. Clarkson (1995) defines primary and secondary stakeholders, based on having formal and informal relationships respectively. Fassin (2009) suggests a model based on the stakeholder's influence, classifying the stakeholders into three categories; real stakeholders (stakeholder), pressure groups (stakewatcher), and regulators (stakekeeper). Asiedu and Huisig (2017) classify the stakeholders as User/beneficiaries, Governance, (steering groups/boards), Influencers (trade unions, the media) and Providers (suppliers, partners). Considering the objectives and characteristics of the MANU-SQUARE project, the stakeholders will be classified based on the following criteria:

- primary stakeholders: people or organisations directly benefiting from or affected by a particular business activity;
- secondary stakeholders: are the "intermediaries", that indirectly benefit from or affected by a particular business activity;
- key stakeholders: who can also belong to the first two groups and have significant influence upon or importance within a business activity.

4.2 Classification of interests and requirements

The classification of the stakeholders' interests and requirements begin with their relative importance to each other, identified through value exchange relationships between the stakeholders. Cameron et al. (2008) proposes a methodology for defining the input/output relationships between stakeholders to map the needs among each other and create a value loop. Once the value loop is drawn, the authors prioritize the needs of the stakeholders based on their relative importance. According to Cameron et al. (2011), a successful exchange of values takes place when the outputs of the project meets the interests and requirements of the stakeholder as well as when the stakeholder's output meets the needs of the project, as illustrated on Figure 6.

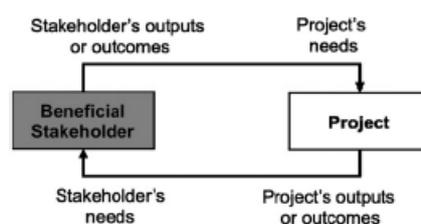


Figure 6 Value exchange between the stakeholder and the project (adopted from Cameron et al., 2011)

To classify interests and requirements of stakeholders, the so-called Kano Model (Kano et al. 1984) has proven to be a useful method and has been widely-adopted by many authors in the literature (Yang 2005; Xu et al. 2009). The Kano Model for customer satisfaction is illustrated in Figure 7.

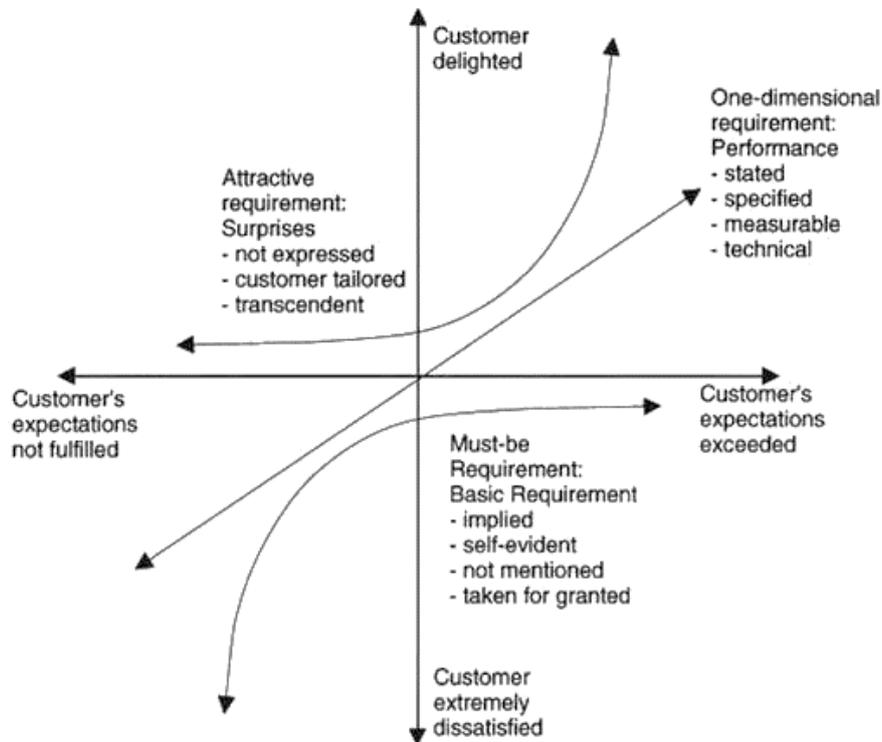


Figure 7 Kano model of customer satisfaction (adopted from Berger, 1993)

The model defines three types of requirements:

- **Must-be requirement (Basic requirement):** these requirements are the assumed and obvious requirements taken for granted by the stakeholders or customers. Satisfying these requirements will not lead to stakeholder satisfaction, while the stakeholders will be extremely dissatisfied if they are not met. Stakeholders consider these requirements as prerequisites for being interested in the project/product, without explicitly stating them.
- **One-dimensional requirement (Performance requirement):** these are measurable requirements expressed and demanded by the stakeholders. The satisfaction level of the stakeholders correlates with the level of fulfilment of these requirements.
- **Attractive requirement (Surprises):** these requirements are not expressed by the stakeholders since they are not expected or the stakeholders are not aware of them. However, they may lead to greater satisfaction of the stakeholder if they are met.

The foundations of the stakeholder satisfaction are established if must-be and one-dimensional requirements are satisfied. The attractive requirements are the extra ones, and if delivered they add value to the performance quality. Once the attractive requirements turn to performance requirements (one-dimensional requirement), not delivering them becomes a dissatisfaction factor.

4.3 Strategies to engage the classified stakeholders

Depending on the classified types, interests and requirements of stakeholders, strategies should be developed for their engagement and management. Along with the pioneering work of Freeman (1984), stakeholder management strategies and approaches are mainly tailored to their relationships with the organization/project of focus, such as interest, importance, power, and influence relationships. As an example, Savage et al. (1991) defines strategies based on two

dimensional relationships; stakeholder's potential for cooperation and stakeholder's potential for threat. Stakeholders are classified into four types depending on the combination of these two dimensions, as shown in Table 3.

- a. Type 1: the supportive stakeholder supports the organization's goals and actions with their high cooperation potential and low potential for threat. The managers should involve them in relevant issues to encourage their cooperative potential.
- b. Type 2: the marginal stakeholder is neither highly threatening nor especially cooperative. Their interests should be monitored when making decisions.
- c. Type 3: the non-supportive stakeholder is the most stressing one for the organization with its high potential for threat and low potential for cooperation. These stakeholders should be managed with a defensive strategy that means to reduce the dependency on them.
- d. Type 4: the mixed blessing stakeholder plays a major role with its potential for cooperation and potential for threat are equally high. They may be best managed by collaboration strategy.

		Stakeholder's Potential for Threat	
		High	Low
Stakeholder's Potential for Cooperation	High	Stakeholder Type 4: Mixed Blessing Strategy: Collaborate	Stakeholder Type 1: Supportive Strategy: Involve
	Low	Stakeholder Type 3: Non-supportive Strategy: Defend	Stakeholder Type 2: Marginal Strategy: Monitor

Table 3 Typology of Organizational Stakeholders (adopted from Savage et al., 1991)

Other examples of stakeholder strategy classification models are given as follows. Mitchell, Agle, and Wood (1997) classify the stakeholder strategies based on the level of importance characterized by power, legitimacy and urgency factors. Kamann (2007) defines two dimensions, stakeholder's power and level of interest, for identifying strategies. Based on the differentiated influence relationships between the organization and stakeholders, Wagner Mainardes, Alves, and Raposo (2012) proposes a new classification model.

4.4 Stakeholder analysis of innovative platforms

There is limited literature on stakeholder analysis of similar innovative platforms to MANU-SQUARE. Zibuschka, Laufs, and Engelbach (2010) identified the following stakeholder roles of a platform for SMEs: innovation commercialiser, Innovation Funder, Innovation Generator, End User and Platform Operator. The authors point out that the stakeholders roles are not exclusive. For example, a platform operator could also be a knowledge provider. According to a report published by World Economic Forum (WEF) (2017) on innovative platforms, a business can take four distinct forms in a platform ecosystem: Orchestrator, Producer, Consumer or Infrastructure provider. In addition, consumer agencies, industry associations, labour unions and policy-makers can be added as stakeholders in a platform ecosystem.

WEF (2017) report states that platforms change businesses in three ways: value shifts, non-linear growth and trust. Trust is seen as a crucial core value to succeed with facilitation, adoption and the use of B2B platforms. Six principles are identified as critical to build a trustworthy platform ecosystem: security, accountability, transparency, auditability, fairness and ethics. Security is seen as essential for transactions between companies in the same infrastructure, as a platform. However, the operator must be held responsible for the overall accountability of the platform. Transparency is another important factor of the platform, stakeholders need to be provided with information to understand how relationships are set up, and how the platform uses data to facilitate transactions between stakeholders. Another principle identified is the auditability of the platform, which includes verifying and monitoring transactions in compliance with jurisdiction. Fairness is a core principle for B2B platforms, which should facilitate equitable transactions between stakeholders.

Examples of similar innovative B2B platforms are listed below:

Floow 2 (<https://www.floow2.com/sharing-marketplace.html>): a B2B asset sharing platform that facilitates the sharing of overcapacity of business equipment and the skills & knowledge of personnel that are under-utilised for half of the time, by making it transparent and tradable on their platform.

ResCom (<https://www.rescoms.eu/>): a systems-led decision-making tool and methodology to support manufacturers in transitioning to closed-loop industrial systems.

Saneral (<https://www.saneral.com/>): online B2B material and service marketplace that enables companies to exchange secondary materials and to match it with (new) recovering technologies.

Yerdle Recommerce (<https://www.yerdlerecommerce.com/>): online platform for scaling reuse.

MakeTime (<https://www.maketime.io/>): simplifies the production of CNC machined parts, matching the customer with the most suitable supplier that will make available its production capacity to satisfy the request.

Quirky (<https://quirky.com/>): a free community-led invention platform that brings real people's ideas to life.

5 MANU-SQUARE STAKEHOLDERS

This chapter presents the identified stakeholder types of the MANU-SQUARE platform and their classification.

5.1 Stakeholder types

A company that complies with one or more of the following 3 criteria is identified as a stakeholder of the MANU-SQUARE platform, taking the project goals into account:

- the company benefits from the platform in its business activities;
- the company contributes to the development of the platform in terms of the services proposed by the platform;
- the company is an important part of the manufacturing value chain that will be supported by the platform.

Based on this definition, the following stakeholders are identified. The stakeholder map is illustrated in Figure 9.

1) *Manufacturers:*

This stakeholder group consists of producer of products, components, as well as production technology (e.g. robotics, equipment), of any size (i.e. large, medium, small). Stakeholders who are part of this group share the following interests:

- Manufacturers that are seeking knowhow, production capacity, or technology for different purposes such as industrializing a new product or overcoming a capacity shortage problem.
- Manufacturers that are interested to be part of a production waste/ by-product value chain, either as a supplier or customer
- Manufacturers that are interested to exploit non-used capacity of production (e.g. machines, lines) or workforce (e.g. expertise, manhour) in low demand periods.
- Manufacturers that are looking for partners to join them in the transformation of new concepts into an actual, marketable product-service solution.
- Manufacturers that want to use the platform for sharing issues and discussing ideas

2) *Start-ups and innovators:*

This stakeholder group consists of start-ups and innovators that are seeking different types of support to develop, materialize, and industrialize their product/service concepts or ideas, including production capacity, knowhow, and technology. The focus is still on manufacturing. The type of support they need strongly depends on the maturity of the innovation idea or project, and the level of novelty of the involved technologies and solutions.

3) *Service Providers:*

This stakeholder group is critical for the well-functioning of the manufacturing value chains that will be configured and supported through the platform. Following stakeholder types are considered within this group:

- *IT service providers:* companies providing IT systems, software, digital services (e.g. Big Data Analytics), system integration, and hardware attached to the IT services. These stakeholders will not only benefit from the platform in terms of business activities, but will also contribute to the development of the platform. Software developers and integrators are able to transform the platform into living solutions constantly enriched with new functionalities and services. Therefore, they will also be useful for the realization of the projected outputs and services of the platform.
- *Laboratory services providers:* some of the business activities addressed by the platform, such as buying production waste and materializing a product idea, will require laboratory services such as sample analysis, certification, and prototyping. Organizations like research institutes or innovation centres that can provide these services are therefore also a stakeholder of the platform.

- *Legal, IPR, contract service providers:* for the security and accountability of the business activity between the companies, legal services will play an important role. In this context, legal service providers become a potential stakeholder, especially for the small & medium enterprises (SMEs) that may not possess the related competences in their capacity.
- *Consultancy service providers:* business consultancy companies or individuals are also potential stakeholders of the platform with their abilities to provide business services such as market analysis, design, and engineering. Again, SMEs are the primary beneficiaries of such services due to their limited resources.

Other potential stakeholder types of this group consist of waste sub-contractors, maintenance and training service providers, and logistics and distribution service providers.

4) Knowledge providers:

Research institutes and universities are considered in this stakeholder group, with the role of knowhow providers for business activities or joint research projects with other stakeholders.

5) Innovation facilitators:

Facilitation and promotion of innovation in terms of new ideas, new products/services, and new markets for stakeholders are one of main goals of the MANU-SQUARE platform. As such, innovation facilitators like innovation managers, innovation/technology centres for coaching and engagement, info & support organizations, and innovation hubs are also considered as potential stakeholders of the platform.

6) Multipliers:

For the success of the MANU-SQUARE platform, building communities and achieving a critical mass of customers and suppliers participating to the platform is a critical factor. This makes multipliers such as clusters and sectorial network organizations, industry associations, and industry communities, potential stakeholders of the platform.

7) Investors:

Investors that are looking for new business and investment ideas are potential stakeholder of the platform, not only because of their potential interest but also for the mutual interest of start-ups and innovators to have them. Lack or no access to financial resources is one of the most widely cited reasons for failure of innovation projects, especially the ones promoted by start-ups. Developing a direct link with crowdfunding platforms and external investors is expected to mitigate this concern.

8) Regulators and auditors:

Regulatory compliance, protection, and audit influence and set the rules that organizations must undergo, including the future MANU-SQUARE spin-offs. It is therefore important to consider regulators and auditors such as relevant governmental bodies as a stakeholder.

9) Consumers:

Information on the behaviour and preferences of customers, received through online markets, are useful for the development or improvement of products and services offered by manufacturers, start-ups, and service providers. Consumers are real evaluators and co-designers of innovative business ideas and products/services, which make them a potential stakeholder of the MANU-SQUARE platform that, in turn, can exploit the value created by consumers.

5.2 Stakeholders' interrelationships and value exchange relationships

MANU-SQUARE platform will address the exchange of values between the potential stakeholders, regarding the identified focus areas such as unused capacity exchange. For each transaction, there will be two primary actors who will

build the business relation and will exchange value, and beneficial actors who will provide value to enable or support the well-functioning of the relation. A successful value exchange takes place when the needs of the business relation are met, and the outputs of the business relation meet the expectations of all involved actors. Expected overall value relationships between the potential stakeholders, that define the business relations and needs to achieve a successful exchange is illustrated in Figure 8.

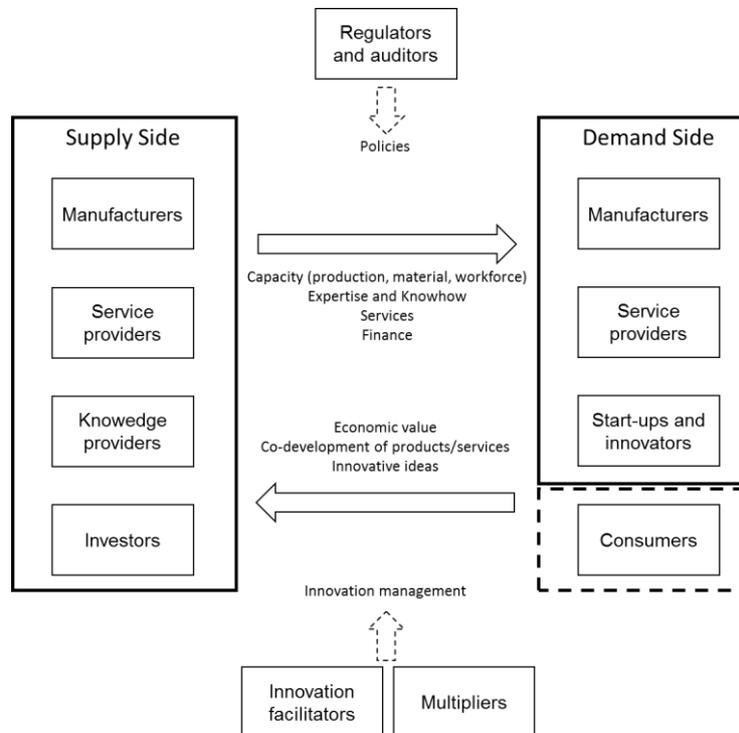


Figure 8 Expected value exchange relationships between the MANU-SQUARE stakeholders

5.3 Stakeholder type classification

The stakeholders of the platform are classified based on the following criteria.

Primary stakeholders are the direct actors of a business activity that will be triggered and/or supported by the platform or that will have a direct impact on the development of the platform. They will have direct customer-supplier and demand-supply relationships. In this context, manufacturers, start-ups, service providers, knowledge providers, and investors belong to this category. Examples are;

- a manufacturer selling excess production capacity to a start-up that need it for industrialization of the product;
- an IT service provider buying production capacity and expertise from a manufacturer for producing the hardware it has designed;
- an IT service provider developing software application on the platform.

Secondary stakeholders have influence on the facilitation of the business activities generated between the primary stakeholders or on the adoption of the platform itself. In this context, innovation facilitators, multipliers, regulators, and consumers belong to this category. Examples are:

- an innovation manager linking two manufacturers that may exchange production waste or by-products;
- an industry organization (multiplier) that contributes to community building and adoption of the platform.

Key stakeholders of the platform are identified and discussed in Chapter 8 where implications and strategies for stakeholder engagement are outlined based on the interview results on the interests and requirements of the stakeholders.

D1.1 – Stakeholder analysis

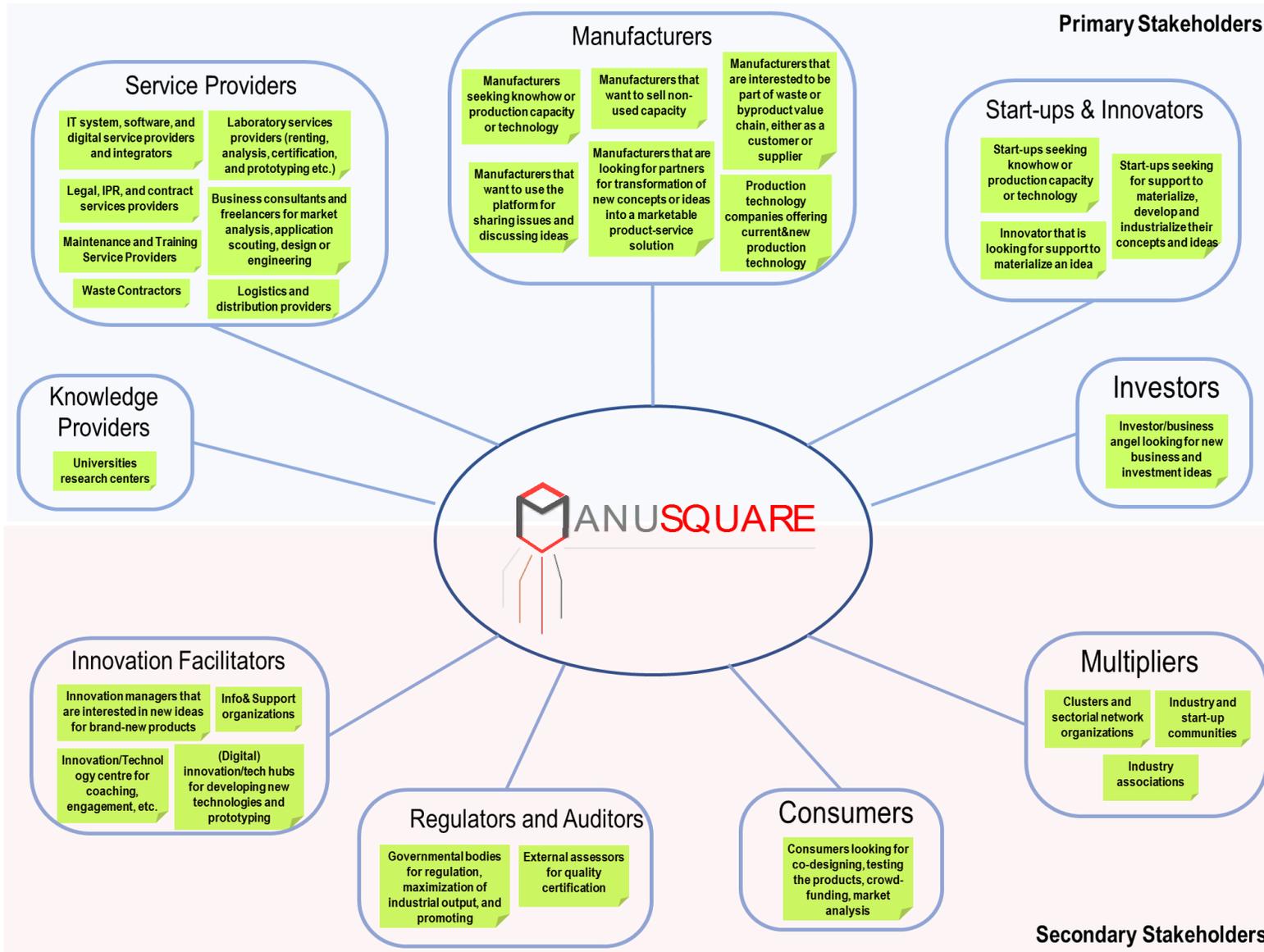


Figure 9 MANU-SQUARE stakeholders map

6 STAKEHOLDERS' BUSINESS NEEDS AND INTERESTS

This chapter outlines the business needs and expectations of the stakeholders in relation to the MANU-SQUARE platform objectives. The needs and interests of the stakeholders can be categorized into three groups:

1. Building business relationships and networks
2. Unused capacity exchange (buying/selling)
3. Production waste and by-product exchange

6.1 Building business relationships and networks

Interview results revealed that needs and expectations of a company out of a business relation with suppliers and customers significantly depend on the business maturity and characteristics of the company itself. The companies' maturity levels will influence the requirements for the platform. Based on their business and network maturity, we have classified the companies into two categories; namely, mature (developed) and developing. Table 4 summarizes the overall characteristics of these two categories.

Mature (developed) companies	Developing companies
Dedicated departments and teams for performing business processes and activities (e.g. procurement)	Unstructured and limited resources that require cross-functional roles to handle several processes and activities.
Standardized business processes and activities	Non-standardized business processes
Strong position in the market	Volatile business characteristics that create many non-standard business activities
Established network of suppliers and customers. When suppliers/ partners are needed, it is known whom to work with	Supplier and customer networks are under development.
Supplier selection occur in accordance with pre-defined criteria and procedures	Supplier selection is largely based on the core requirements (e.g. expertise, product specification) of the business activity. The priority is given to identify the core requirements due to limited resources.
Strategic suppliers/partners with close collaboration	Strategic partners could exist, but mainly use of temporary relations with suppliers based on varying needs
Efficient communication channels (e.g. IT systems) with suppliers / customers / partners	Limited resources to invest on efficient communication channels
Strict and established procedures, and dedicated resources for ensuring business security, including IPR and data protection	Limited resources to handle the business securing tasks and larger need for external service providers

Table 4 Main features characterizing a business depending on the company's maturity category

Selection of the suppliers involves the following factors and criteria, taking the above discussed business maturity factor into account:

- Location and geographical proximity is an important factor when it comes to selection of strategic partners, especially for the mature companies. The companies tend to work with suppliers or partners that are closely located to them due to better possibilities for physical meetings and communication.
- Depending on the business context and typology, suppliers are not only expected to provide the required part but also expected to contribute to the solutions where the product/service is customized to some degree. While mature companies apply supplier development programs and integrated production development strategies for this purpose, developing companies tend to select the suppliers that can provide such expertise together with the product/service.
- Mature companies have the resources and procedures to do tendering and evaluation of several suppliers / providers. For developing companies, this process mainly occurs in a negotiation form.

D1.1 – Stakeholder analysis

- Some sort of trade-offs occurs in both categories of companies, when selecting the suppliers/providers. Such trade-offs include the parameters such as price, quality, and distance.
- Searching and finding new / unknown suppliers specific to the product needs happen also in both cases, with varying degrees. Expectedly, developing companies experience this situation to a larger extent.
- Various criteria are taken into account when suppliers / partners / providers when it comes to select or maintain the relationships. Following criteria were emphasized by the interview respondents:
 - earlier experience and history of working with the supplier
 - references about the supplier from another company in their network
 - supplier's KPIs and track record
 - reputation of the supplier/provider in the market in terms of its product/service quality.

Searching and getting in touch with potential customers is a more active business activity for developing companies compared to the mature companies with established customer networks. The following activities and approaches for expanding the customer networks have been emphasized by the respondents:

- Contacting similar companies to the ones that we have worked with earlier.
- Participating to industrial and academic events (e.g. conferences, fairs, meetings of the associations).
- Conducting market and trend analysis.
- Taking advantage from the networks of the internal employees.

Business relations with suppliers and customers involve considerable risks that should be mitigated by the platform. The following risks were pointed out by the respondents, affecting the developing companies to a larger extent:

- Unclear tasks after signing the contract, which is a bigger issue for developing companies that have less standardized products and tasks.
- Limited time and resources that may lead to poor decision making of supplier selection.
- Lack of precise information about the supplier/provider capabilities and expertise.
- Limited choice / options of known suppliers for a specific need.
- Lack of transparency on the supplier side due to hesitations to lose or fail business relation with the customer, especially in the case of unbalanced power relations where a developed company constitutes a significant share of the supplier's market.
- Uncertain outcomes due to lack of earlier experience with the supplier.

Risk mitigation is carried out to some extent through strategies that reduce the investment risks and contractual agreements that define the scope, duration, and limitations of the business activity between the involved partners. Nevertheless, building trust is a key factor to establish and sustain the business relations. Earlier partnership experience, transparency of capabilities, traceability of the business activity, and efficient communication and information sharing mechanisms have been pointed out as important factors for building trust. Finally, the following business needs and interests have been outlined by the potential stakeholders to expand their supplier and customer networks:

- Easier accessibility to more options for suppliers/providers relevant to their business with better conditions (e.g. price) and precise information about their capabilities.
- Quicker establishment of contacts with suppliers or customers.
- Better visibility in the market and accessibility to customer, which was especially indicated by the developing companies.
- Co-creation, co-development, and co-innovation of products/services with suppliers/customers, which applies to both mature and developing companies to varying extents.
- Quicker and more accurate prioritization of new business/product/service ideas through customer/supplier network, which applies to developing companies and start-ups to a larger extent due to their limitations in resources to commit.
- Expanding the markets for existing products/services.

6.2 Unused capacity exchange (buying/selling)

Unused production capacity (e.g. machines, lines) and unused workforce capacity (e.g. man-hour, expertise) constitute the unused capacity for manufacturers. The need for unused capacity exchange stems from, on one hand, companies possessing excess capacity in low demand periods and, on the other hand, companies which experience capacity shortages due to different reasons. It should be noted that the same company could experience both excess capacity and capacity shortage in different periods.

On the excess capacity side, interviews with the manufacturers indicated that there is limited utilization of the non-used capacity. This issue mainly concerns with the lack of awareness on whom to sell and how to setup the links, and lack of trust to companies external to the existing network. Companies tend to utilize the excess capacity internally, when they experience excess capacity not linked to a specific demand, depending on the business context and typology (e.g. Make-to-Order, Make-to-Stock) they are operating in. Examples of internal solutions to utilize the excess capacity are: keeping safety capacities, building up safety stocks (i.e. work-in-process (WIP), final product), continuous improvement efforts, or developing, improving, and innovating the products/services. On the capacity shortage side, the following issues have been pointed out by manufacturers as the main causes: demand variability that makes it difficult to plan the capacity accordingly, seasonal or periodical demand peaks, and bottlenecks in operations. The business maturity of the manufacturer is also an important factor for capacity shortage. While large companies have dedicated resources and internal production networks to solve the capacity shortage issues, developing companies have limited resources that may force them to outsource business processes and buy capacity, including production and expertise for short-term non-standard tasks. Few companies indicated that they have a structured approach to acquire capacity when needed, such as having capacity exchange agreement with a strategic partner. Nevertheless, a fire-fighting approach is also applied commonly to handle the capacity crisis occasions.

The interest for selling or buying capacity from actors outside the usual network varies depending on the maturity and size of the company. Having limited resources, small companies are less reluctant to benefit from this possibility compared to mature companies that have higher privacy and trust concerns. Nevertheless, companies expressed that obtaining precise information about the capacity (e.g. availability, properties, expertise) and protection of intellectual properties are critical factors that could prevent the achievement of a successful capacity exchange business, regardless of their maturity.

6.3 Production waste and by-product exchange

Interviews' results indicated that the stakeholders are aware of the economic and social importance and opportunities of utilizing the production waste or by-products. As a well-established and promoted strategy in Europe, sustainability is part of the business agenda of all interviewed stakeholder types, including the start-ups. Manufacturers are part of a production waste value chain in different ways such as:

- Selling or buying production waste or by-product to/from another company
- Hiring sub-contractors that handle the production waste or by-products, especially the hazardous ones
- Selling waste to governmental/ public agencies
- Recycling in their own facility or within the network the company belongs to.

Interviewed manufacturers expressed much stronger interest on selling their production wastes or by-products compared to buying the waste or by-products of another company. The following needs and expectations were expressed to consider the latter case.

- The waste or by-product should be at a certain level of quality,
- The transformation of the waste to a usable part/product is not always straightforward or clear. Specific knowhow is needed to realize this transformation.
- Buying waste should give better business conditions (e.g. lower material and operating costs)
- Volume should be at a reliable level. There should be continuity in the supply of the utilized waste or by-product.

7 STAKEHOLDER REQUIREMENTS FOR ADOPTING THE MANU-SQUARE PLATFORM

This chapter outlines the requirements and interests of the stakeholders for adopting the MANU-SQUARE platform that will address the business needs and expectations outlined in the previous chapter.

7.1 Volume and critical mass requirements

Respondents have indicated the adoption volume of the platform as one of the main requirements for them to take part in the platform. The following requirements were pointed out to achieve a critical mass that is not only needed to realize the platform's objectives, but also to acquire participants to the platform.

- Stakeholders would like to see relevant actors to their business in the platform.
- Having accessibility to large number of potential customers will augment the interest to adopt the platform.
- The stakeholders would feel obliged to join the platform if big actors of their target markets are there.
- Adoption and usage of the platform by well-known international enterprises would increase the trustworthiness and reliability of the platform.

The respondents have also pointed out the necessity of visualizing KPIs that correspond with their volume and critical mass requirements. The following KPIs were exemplified by them:

- Number of users
- Economic growth of the participants
- Duration of the relationships
- Number of business activities triggered by the platform.

7.2 Functionality and information sharing requirements

Functionalities provided by the platform should address the identified business needs and expectations of the stakeholders. The following functional requirements were pointed out, with an ascending order in terms of advancement:

- Providing listings of relevant suppliers/providers and customers.
- Identification and matchmaking of potential demand (e.g. production capacity) and supply (e.g. available capacity) between stakeholders.
- Identification and indication of new business or market opportunities for products/services.
- Prioritization of new ideas and trends for products/services, which is especially required by developing companies that have limited resources.

The respondents stated that they would require to get as much relevant information as possible quickly from the platform, to carry out the above stated functions in an effective (e.g. timely and appropriately) way. Some examples of information pieces include the supplier/customer profile, performance indicators, and capacity properties to be exchanged. Despite their requirements to access to information, most respondents stated that they would hesitate to give information to the platform due to security and IPR concerns. As also emphasized by WEF report (2007), security and trust issues should be carefully addressed by the platform for successful adoption. Few respondents have also indicated the importance of symmetric and fair information sharing, namely there should be a balance between what a stakeholder gives to the platform and what it gets.

7.3 Business support requirements

Another critical requirement for the successful adoption of the platform concerns with the degree of platform's interaction with the business relationship that the actors will build up. Respondents have stated mixed views on this aspect. Some of the respondents required that the platform should be accountable for the business activity when it is triggered by it, which will increase the trust to the platform. Others stated that the role of the platform should be limited to match-making of demand and supply between the actors, and the contractual agreements should be made outside the platform.

D1.1 – Stakeholder analysis

Nevertheless, identified alternatives of the platform's role when the activity is triggered through the platform is listed below:

- monitoring and visualizing the business activity with the supplier/customer,
- providing traces of the business activity with the supplier/customer
- handling the contractual agreement for the business activity
- providing legal support for the involved actors of the business activity, if agreements are not met.

8 IMPLICATIONS AND STRATEGIES FOR STAKEHOLDER ENGAGEMENT

8.1 Classification of stakeholders' needs and requirements

Based on the outcomes of the § 6 and 7, where stakeholders business needs and platform adoption requirements were discussed, the framework in Figure 10 is proposed for classification of their needs and explained below. The framework adopts and modifies the introduced Kano model in accordance with the outcomes of the study.

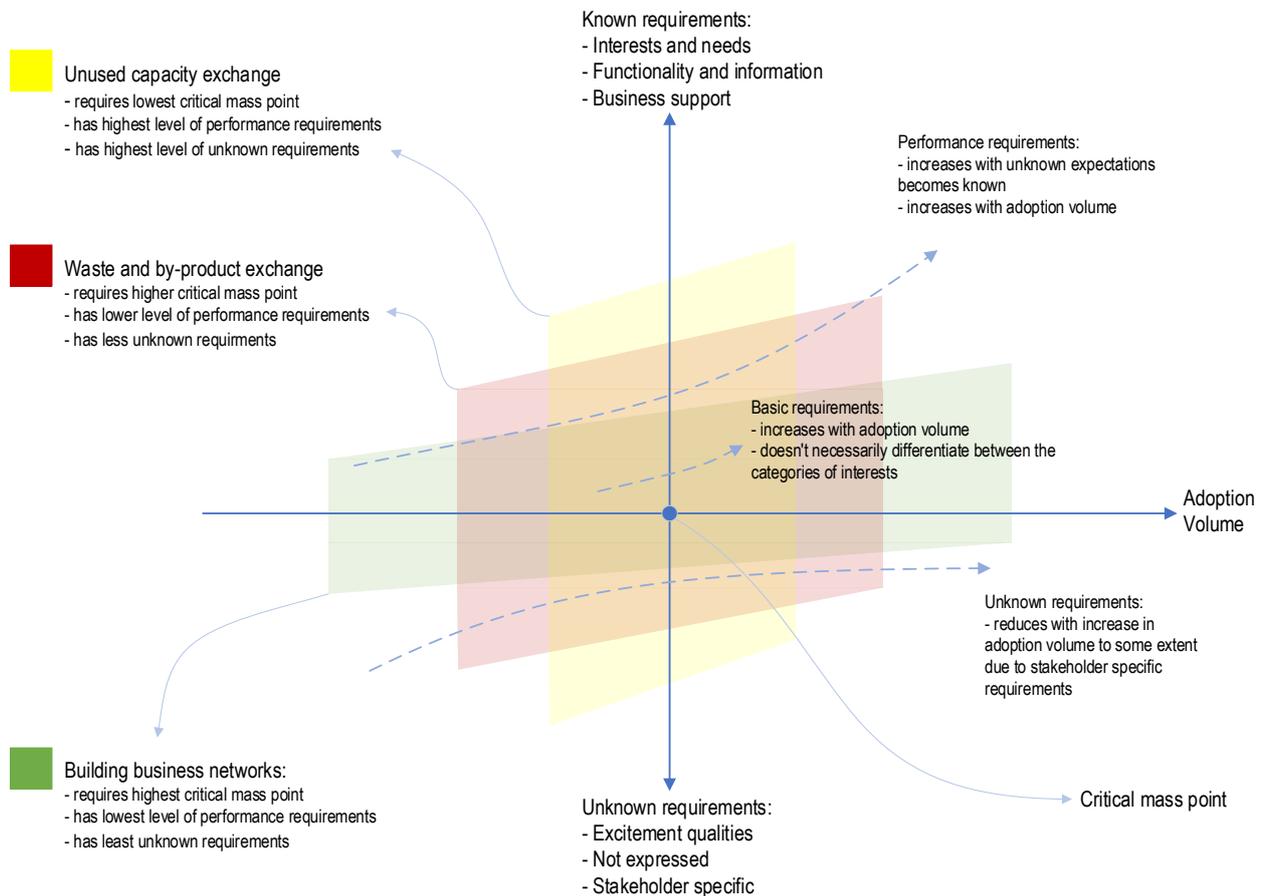


Figure 10 Framework for classification of the MANU-SQUARE stakeholders' interests and requirements

The framework consists of the following three dimensions:

- **Adoption volume:** the "x-axis" of the framework addresses the adoption volume of the platform. Along the x-axis the adoption volume increases. Critical point is regarded as a degree of adoption volume and it is appointed as the centre of the framework.
- **Known requirements:** the "upper side of the "y-axis" addresses known requirements of the potential stakeholders. It consists of stakeholders' interests and needs, and functionality, information, and business support requirements from the platform. Along the upper side of the y-axis the level of advancement of the requirements increases.
- **Unknown requirements:** the "lower side of the y-axis" addresses the unknown requirements of the stakeholders. Along this side the level of unknown requirements increases.

Modifying the basic, performance, and excitement quality concepts of the Kano model, the framework defines three types of requirements:

- *Basic requirements* are the obvious ones that are assumed to be satisfied for adoption of the platform. An example is that adopting the platform should provide some sort of value to the user, such as easier accessibility

to potential suppliers. Basic level of requirements increases along with the adoption volume, however does not necessarily differ between categories of interests.

- *Performance requirements* are the expressed ones that should be satisfied to increase the adoption of the platform, achieve the critical mass, and ensure the well-functioning of the business relations and activities. An example is that the platform should provide match-making of demand and supply sides related to a business relation and activity of interest.
- *Unknown requirements* are those that haven't been expressed yet since the platform is under development and the stakeholder analysis involved a limited number of representatives from different stakeholder types. There will be stakeholder-specific and company-specific requirements, with involvement of other companies.

Three interest categories are mapped across the three dimensions and requirement types:

- Interest category 1: Unused capacity exchange:
 - requires lowest critical mass point since the business activities will involve limited number of actors with higher degree of specifications on the sector, business context, production capacity types, and areas of expertise, depending on the type of capacity exchange;
 - requires highest level of advancement when it comes to performance requirements since the business activities will require more detailed information sharing (e.g. properties of the capacity to be sold/bought) as well as a higher degree of business support (e.g. protection of intellectual properties);
 - has highest level of unknown requirements since high degree of specifications of the business activities will involve high degree of a stakeholder's specific requirements.
- Interest category 2: Waste and by-product exchange
 - requires higher critical mass point since the business activities will have higher degree of opportunity to involve companies across different sectors or contexts as long as the waste or by-product has an identified usability;
 - requires lower level of advancement when it comes to the performance requirements since the level of information sharing and business support will be concerned with non-critical business interests such as production waste utilization for the companies;
 - has lower degree of stakeholder specific requirements compared to the interest category 1, therefore less unknown requirements.
- Interest category 3: Building business networks:
 - requires highest critical mass point since the companies are interested to have better accessibility to a large number of suppliers and customers to broaden their networks. Satisfying this interest will also contribute to volume expectations of the above two categories of interests since larger supplier and customer networks will help identification of possibilities for unused capacity and waste exchange;
 - requires lowest level of advancement when it comes to performance requirements since lower degree of information sharing (e.g. basic information about the company's profile and match-making of potential suppliers and customers) and functionality (e.g. matchmaking) can support this activity;
 - has lowest level of unknown requirements since the stakeholder-specific requirements from the platform will be limited in terms of functionality, information sharing, and business support. The variability occurs when it comes to the types of suppliers and customers relevant to the stakeholder's business.

8.2 Implications on importance-influence of stakeholders and management strategies

After identifying the stakeholders' interests and requirements, it is necessary to classify their positioning towards the MANU-SQUARE platform and to develop proper strategies to manage them. For this purpose, the influence-interest matrix is applied. Stakeholders' importance-influence matrix has been identified through the following steps.

- 1) *Consortium partners view on stakeholders' importance-influence*: each consortium partner filled up an importance-influence matrix for each of the identified stakeholders. The input from the partners were then analysed for preliminary classification of the stakeholders.

D1.1 – Stakeholder analysis

- 2) *Interview respondents' view on stakeholders' importance-influence*: The interview respondents were asked to identify the important and influential actors related to their business among the identified MANU-SQUARE stakeholders.
- 3) *The implications of the framework for classified needs and requirements of the stakeholders*: the dimensions and features of the above-described framework indicate the important and influential stakeholders for the success of the platform. Key stakeholders are those who will have significant importance and influence for implementation and adoption of the platform to achieve a critical mass, and realization of the above-discussed requirements. Manufacturers and Innovation facilitators are therefore considered to be key stakeholders.

Based on the consolidation of these steps, with a stronger weight on the third step, the matrix shown in Table 5 was suggested for importance and influence of the stakeholders. This analysis should be considered as a preliminary one since it is based on limited data collected from consortium partners and interview respondents.

- The importance criteria refer to the stakeholder's potential benefit for achieving the critical mass for both adoption of the platform and performance of the business activities. Further, it incorporates the potential interest and benefit of the stakeholder from the platform.
- The influence criteria refer to the potential impact of the stakeholder for establishment of the foundations for the value exchanges of interest as well as successful execution of the value exchanges of interest between partners.

Influence \ Importance	High / Medium	Low / Not known
High / Medium	Manufacturers Innovation facilitators	Multipliers Regulators and Auditors Investors
Low / Not known	Start-ups and Innovators Service providers Knowledge Providers	Consumers

Table 5 The importance-influence model of the stakeholders

Manufacturers are both the main users and beneficiaries of the platform as well as the main providers of the foundations for the platform to function towards its goals. They will significantly contribute and benefit from all interest categories outlined in the above section. As such, they are highly important and influential.

Innovation facilitators are critical to build the innovative links between the primary actors of the business activities, as well as have considerable potential to populate the platform with relevant actors required by the business activities. As such, they are considered to have medium importance and influence in the matrix. There is no certain role associated with the innovation facilitators. For example, a managerial role in a manufacturing company or in a knowledge provider can take the innovation manager role.

Start-ups and Innovators are also main users and beneficiaries of the platform with their significant need to develop their business and their supplier and customer networks, as well as to find external capacity due to their limited resources. Nevertheless, their influence is limited since they have low potential to contribute to the foundations required for the interest categories described above.

Service providers both benefit from the platform for finding potential customers and contribute to it by providing a service provider network for other interested stakeholders such as manufacturers and start-ups. As such they will contribute to the attractiveness of the platform for adoption. IT service providers further contributes to the development of the platform by providing innovative application services, which, in turn, will create new business opportunities for them. Their further influence is low since their contributions and benefits are primarily concerned with the interest category of building

networks. The potential influence on the other two interest categories will depend on the requirements of the business activities to be executed.

Knowledge providers have some potential to use the platform to reach out wider network of customers and suppliers, as well as to contribute to the population of the platform as many respondents pointed out the importance of having them, especially in supporting research-based innovation activities. Their influence is unclear since it will most likely be specific to the requirements of the business activity of interest as well as specific requirements of the involved actors. Further, this influence aspect can be covered by the "innovation manager" if appointed.

Multipliers have considerable potential to influence the adoption of the platform by relevant actors. Nevertheless, it is not clear what will be their benefit from the platform.

Regulators and Auditors have considerable potential to influence the execution of the value exchanges with policies and regulations that should be met. Nevertheless, their beneficiary role is unclear.

Investors are clearly influential in terms of their support for transforming the innovative concepts and ideas of start-ups and small manufacturers into actual products/services. However, our interviews and research indicated that there are very specific mechanisms and platforms dedicated for this purpose, namely to link the start-ups with potential investors. Before clarifying the additional value proposition of the platform to the investors, they will remain as a risk factor to be dependent on.

Consumers have low influence and importance due to B2B nature of platform and its focus areas. However, they have potential to provide second tier of valuable information/input for innovative aspects of the project such as co-creation, co-innovation, and co-development of products.

Management strategies for classified stakeholders:

Given the classified importance-influence matrix of the stakeholders, the following strategies are suggested to manage them. The stakeholder engagement strategies and approaches are elaborated in Deliverable 7.2.

Manufacturers and Innovation Facilitators: being identified as the key stakeholder of the MANU-SQUARE platform, manufacturers and innovation facilitators should be managed closely. They should be involved and consulted regularly to identify their interests and expectations, as well as to align the specifications of the platform continuously.

Start-ups and Innovators, Service Providers, and Knowledge Providers: these stakeholders have high/medium importance and low/ unknown influence for the platform. They should be informed regularly to keep and increase their interest towards the platform. However, they require limited monitoring and management.

Multipliers, Investors, Regulators and Auditors: these stakeholders have high/medium influence but low or unclear importance to the platform. Regarding multipliers and investors, it is risky to be dependent upon them for development and functioning of the platform, unless their level of interest is uplifted, and engagement is ensured. This requires better clarification of their benefits from using and/or supporting the platform. Regarding regulators and auditors, a careful monitoring and management strategy is required since they will have considerable influence on the execution of the activities.

Consumers: given their low importance and low influence, consumers have low priority and require limited monitoring and management. Depending on the interests of the other stakeholder groups, it may become necessary to engage and encourage them to support the requirements.

9 CONCLUSION

This report is focused on the stakeholder analysis of the MANU-SQUARE platform that acts as a virtual marketplace bringing the available production capacity, as well as other virtual and physical assets, closer to the production demand to obtain the optimal matching.

The stakeholder analysis identified the type and interests of the stakeholders, as well as their requirements to adopt the platform. The study is mainly based on interviews conducted with potential stakeholders of the platform. The interviews involved 34 respondents from various types of identified stakeholders with priority given to the manufacturers that have been identified as the key users of the platform.

Even though the results have to be considered preliminary given the limited number of respondents, interesting findings have already been pointed out. While each stakeholder type and even companies that belong to the same stakeholder type might have specific requirements, the interviews have pointed out the main stakeholder interests and requirements that can be generalized and extrapolated.

As a next step, in order to increase the reliability of the proposed requirements, an online survey with structured questions will be setup. Furthermore, the stakeholder analysis will be revised during the project when it gets to more mature stages.

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