Ecosystem for COllaborative Manufacturing PrOceSses – Intra- and Interfactory Integration and AutomaTION
(Grant Agreement No 723145)

D9.1 Communication Strategy and Plan

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1 Executive Summary

The preparation of the Communication Strategy and Plan was launched immediately after the start of the project in September 2016 with the cooperation of all the partners involved in the project.

This deliverable describes the scope and the approach for the *Communication Strategy and Plan* in order to achieve the highest and most effective visibility of the COMPOSITION project. It should be noted that this is an initial version that may be revisited as the project progresses and more information and tools become available.

The *Mission* of COMPOSITION is to propose advances in supply-chain centric communication and collaboration schemes that merge machine, human and organizational aspects. The scope is to develop an integrated information management system (IIMS) which optimises the internal production processes by exploiting existing data, knowledge and tools to increase productivity and dynamically adapt to changing market requirements. The project will also develop an ecosystem to support the interchange of data and services between factories and their suppliers with the aim to invite new market actors into the supply chain.

The *Communication Strategy* is to follow a structured approach, aiming to precisely identify the most relevant stakeholders at each stage of the lifetime of the project, as well as their motivations for their interest in integration and collaboration technologies. Moreover, in order to reach out to the different audiences in the most effective way, their favourite communication channels and approaches are identified with continuously updated content. The *challenges* that COMPOSITION needs to address are at (i) data level, (ii) production line/factory level and (iii) overall value chain level. These three levels/research areas have different needs and stakeholders to satisfy. For these areas, it is stressed that all types of target audiences are involved. Hence, the communication with them needs to be well-oriented and thought out.

The *Communication Objective* is to achieve the following impact targeted at different stakeholders;

- Demonstrate how the project contributes to building a stronger, greener EU manufacturing community;
- Show how different parts of the value chain can collaborate e.g. to increase productivity or reduce energy consumption;
- Explain how comprehensive information and management systems in geographical proximity in manufacturing clusters supply chains can improve production efficiency;
- Show how research outcomes can be relevant to our everyday lives, by creating jobs, introducing novel technologies, or making our lives more comfortable in other ways;
- Ensure that results are taken up by decision-makers to influence policy-making and by industry and the scientific community;
- Account for public spending by providing tangible proof that collaborative research adds value.

Four (4) major categories of *target audiences* (including subgroups) have been identified within the Communication Plan for COMPOSITION, considering the aforementioned parameters. These are: a) *Industry* (manufacturing and process companies, subassembly suppliers, system integrators, industrial research communities), b) *Technology domain* (ICT research communities, suppliers of enterprise and manufacturing execution systems, standardisation bodies for interoperability of manufacturing systems), c) *Public sphere* (general public/society at large, environmental agencies, associations and companies, academic communities, press), and d) *Policy makers* (politicians, CSR-responsible personnel in companies, business decision makers).

The *Plan* is to continuously and actively publish project news and results on the project and partner websites, as well as, through suitable channels for each stakeholder group, to ensure visibility and impact. Measurements of the attainment of the plan will be done using Key Performance Indicators (KPI) specified for visibility and for knowledge impact creation.

The main communication *channels* of COMPOSITION will be the project website, social media, webinars, partner websites and social media platforms, online publication and journal libraries, conferences, events, trade shows, workshops, meetings, exhibitions, press and networks (local, national, EC channels). It is noted that the website will be running for at least two years after the project has concluded. Suited *messages* will be selected and attention will be given to the *language* (more or less technical) when addressing specific stakeholders. Moreover, three message phases have been outlined, according to the progress of the implementation of the project, as: early, middle and final, in the sense of content diversification.

2 Introduction

According to the European Commission (EC, 2014), European research project communication should aim to demonstrate the ways in which research and innovation is contributing to a European 'Innovation Union' and account for public spending by providing tangible proof that collaborative research adds value by:

- showing how European collaboration has achieved more than would have otherwise been possible, notably in achieving scientific excellence, contributing to competitiveness and solving societal challenges;
- showing how the outcomes are relevant to our everyday lives, by creating jobs, introducing novel technologies, or making our lives more comfortable in other ways;
- making better use of the results, by making sure they are taken up by decision-makers to influence policy-making and by industry and the scientific community to ensure follow-up.

Hence, communication is "*a strategically planned process, which starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating relating to the action and its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange*".

The partners of the COMPOSITION project are a combination of research institutes, SMEs and industrial companies with a strong commitment to communicate and disseminate the approach and results. The synthesis of the consortium offers an opportunity to have a large impact. As discussed in D9.3 Dissemination Strategy and Plan, it will be possible to capitalise on each partner's individual dissemination channel to achieve this. The members of the consortium are:

Table 1: Members of the COMPOSITION Consortium

Short name	Full name	Type	Country
Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Research Institute	Germany
BSL	BOSTON SCIENTIFIC LIMITED	Industrial Company	Ireland
KLE	KLEEMANN HELLAS - INDUSTRIAL COMMERCIAL SOCIETE ANONYME FOR MECHANICAL CONSTRUCTION SA	Industrial Company	Greece
ATL	ATLANTIS ENGINEERING AE	SME	Greece
NXW	NEXTWORKS	SME	Italy
ELDIA	ELLINIKI DIAHEIRISI APPRIMATON ANONYMI ETAIRIA - ELDIA	SME	Greece
TNI-UCC	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	Research Institute	Ireland
IN-JET	IN-JET APS	SME	Denmark
CERTH	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	Research Institute	Greece
CNET	CNET SVENSKA AB	SME	Sweden
ISMB	ISTITUTO SUPERIORE MARIO BOELLA SULLE TECNOLOGIE DELL'INFORMAZIONE E DELLE TELECOMUNICAZIONI ASSOCIAZIONE	Research Institute	Italy
ATOS	ATOS SPAIN SA	Industrial Company	Spain

2.1 Purpose, context and scope of this deliverable

The aim of the communication strategy is to promote the COMPOSITION project and its results through focus on the targeted audiences, using respectively suitable messages and channels (who, what and how?). It is stressed that the adopted approach is to involve all partners in the communication activities and that the plan throughout the project lifetime is to:

a) identify stakeholders,

b) inform identified stakeholders about the benefits that the COMPOSITION ecosystem has to offer

c) inform identified stakeholders about the existing work and the progress in the pilots

d) engage identified stakeholders to establish two way communications with the project

e) facilitate the development of a strategic framework between the project and its stakeholders throughout the lifetime of the project.

This deliverable is an outcome of T9.1 Communication and Dissemination Activities and is related to all other tasks within *WP9 Business Model, Dissemination and Exploitation*, as well as to the complete list of WP9 deliverables, i.e. *D9.1* through *D9.11*. It can also be viewed as a starting point to plan implementation and gather more information for tasks *T2.1 Industrial Use cases*, *T2.2 Initial User and System Requirements and Innovations*, *T4.1 Security by design for cloud-based data exchange* and *T5.4 Interoperability between Data Collection Systems*. The respective deliverables are *D2.1 Industrial use cases for an Integrated Information Management System*, *D2.2 Initial requirements specification*, *D4.1 & D4.2 Design of the Security Framework I & II*, and *D5.7 & D5.8 Interoperability for M2M & HMI in factory environments I & II*.

Moreover, the definition of the stakeholder groups is anticipated to be very useful for gathering feedback for *T7.1 Survey of Successful Elements in External Related Initiatives* (deliverables *D7.1-D7.3 Survey of successful elements with recommendations for COMPOSITION use cases I-III*).

Finally, the partners involved in *T8.4 Evaluation according to specification* will capitalise on the Communication Strategy and Plan to ensure the optimal outcome of the task in *D8.7 Evaluation Framework* and *D8.8 Final evaluation report of the COMPOSITION IIMS platform*.

2.2 Content and structure of this deliverable

The structure of this deliverable is as follows. In Chapter 3 Communication strategy, the context and challenges of the project are considered, as well as the COMPOSITION mission. The Communication Strategy is presented, analysing the target audiences, as well as the channels, messages and language to be used.

Furthermore, in Chapter 4 Communication plan, the Communication Plan for the project is described, along with points on internal communication among the partners of the project.

3 Communication strategy

The *Communication Strategy* is to follow a structured approach, aiming to precisely identify the most relevant stakeholders at each stage of the lifetime of the project, as well as their motivations for their interest in integration and collaboration technologies. Moreover, in order to reach out to the different audiences in the most effective way, their favourite communication channels and approaches need to be identified and the content will be continuously updated.

In terms of the industrial and technology providing stakeholders, the strategy is to create technical and business interest in the opportunities arising from the exploitation of the project results. For the general public and policy/decision makers the aim is to show how the future manufacturing scenarios enabled by the project will address the societal aspects of advancements in supply-chain centric communication and collaboration schemes that merge machine, human and organizational aspects.

It is noted that the strategy is to attempt to pick out key stakeholders from each of the 4 major categories. The goal is to select the key stakeholders that are more interested in the project's results and they can get more engaged, involved with the project, so as to serve as external collaborators or advisors throughout the duration of COMPOSITION.

The *Communication Objective* is to achieve the following impact targeted at different stakeholders;

- Demonstrate how the project contributes to building a stronger, greener EU manufacturing community;
- Show how different parts of the value chain can collaborate e.g. to increase productivity or reduce energy consumption;
- Explain how comprehensive information and management systems in geographical proximity in manufacturing clusters supply chains can improve production efficiency;
- Show how research outcomes can be relevant to our everyday lives, by creating jobs, introducing novel technologies, or making our lives more comfortable in other ways;
- Ensure that results are taken up by decision-makers to influence policy-making and by industry and the scientific community;
- Account for public spending by providing tangible proof that collaborative research adds value.

3.1 The COMPOSITION context and challenges

The main differentiation of modern manufacturing processes in relation to the existing ones is that even from the requirements and design phase, there is a need for greater agility and flexibility leading to faster production cycles, increased productivity, less waste and more sustainable production. Multiple issues and challenges are related to process the need to rethink and re-invent the Supply Chain and the Value Chain of the modern factory, taking into consideration technology advancements and threats.

The challenges that COMPOSITION needs to address are at (i) data level, (ii) production line/factory level and (iii) overall value chain level. These *three levels/research areas* have different needs and stakeholders

to satisfy. For these areas, it is stressed that all types of target audiences are involved. Hence, the communication with them needs to be well-oriented and thought out.

When it comes to data, the challenge is to transform it to knowledge that is understood and reusable. When considering the production line/factory level, the challenge is to transform the data, knowledge and business objectives so that they can support efficient and timely decision making, as well as the operation of the supply chain. Finally, when addressing the overall value chain level, the challenge is to approach factories not as isolated islands, but as connected, interactive and interdependent entities that need to operate in a potentially worldwide and dynamic environment.

COMPOSITION intends to address the aforementioned challenges at all levels/areas and to reach out to the suitable stakeholders. At the data level, the technical operating part of the ecosystem will support connected and interoperable sensors, production lines and factories, thus enabling to optimisation of manufacturing processes through innovative services and practices. On the production line/factory level, the project will enable ease of use and integration of data, information and knowledge from heterogeneous sources to facilitate the decision making process. At the overall value chain level, the solutions proposed will ensure trusted, secure and automated exchange of data among authorized stakeholders that will allow not only their connection, but also product traceability along the complete supply and value chain.

3.2 The COMPOSITION mission

The COMPOSITION mission is in fact to create a digital automation framework, the Integrated Information Management System (IIMS) that will optimise the manufacturing process by exploiting existing and new data, knowledge and tools. This will be achieved with rethinking the supply and value chain, in order to increase productivity and to facilitate dynamic adaptation to the continuously changing market needs. COMPOSITION aspires to become an open marketplace that will improve the ability of factories to quickly react to external challenges and driving forces.

Following the division into three levels/areas the mission is also threefold. In terms of data manipulation, the historical and live data will be used to generate knowledge about the production process and its interconnection with external entities. At the production line/factory level, decisions will be supported by detailed rules that will be adaptable to different objectives and goals. At the value chain level, the mission is to offer the ability of the internal supply chain to connect and interact with internal/external suppliers and third party service providers. The concept is to automate, as much as possible, the preliminary coordination and negotiations activities and to setup supply chains for specific needs.

3.3 Targeted audiences, channels, messages and language

The ***targeted audiences*** have been identified using input from all involved partners and considering the multiple stakeholders to whom we need to reach out. They have been categorized into the four (4) following main groups.

Table 2: COMPOSITION target audiences

Industry	Technology domain	Public sphere	Policy makers
Manufacturing and process companies	ICT research communities	General public/society at large	Politicians
Subassembly suppliers	Suppliers of Enterprise	Environmental agencies,	CSR-responsible

	and Manufacturing Execution Systems	associations and companies	personnel in companies
System integrators	Standardisation bodies for interoperability of manufacturing systems	Academic communities	Business decision makers
Industrial research communities		Press	

At this point, it is of use to provide a short description on how the targeted audiences are considered for the project.

Industry

- *Manufacturing and process companies*: Manufacturing industries and associated material and service providers covering both process and discrete manufacturing.
- *Subassembly suppliers*: Suppliers of subsystems, covering hardware and the required software that renders the hardware usable and integrable.
- *Industrial research communities*: Research communities focused on addressing industrial manufacturing challenges, generating advancements in materials, design and approach.

Technology domain

- *ICT research communities*: Research communities focused on addressing ICT related issues, especially in IoT, data security and encryption, interoperable HMIs, simulation and forecasting, as well as decision support systems.
- *Suppliers of Enterprise and Manufacturing Execution Systems*: Suppliers of computerized systems used to support business processes that track and document the transformation of raw materials to finished goods, to offer information flow views, and to facilitate reporting.
- *Standardisation Bodies for inter-operability of manufacturing systems*: Standardisation bodies and committees dealing with the challenges in industrial manufacturing, IoT, HMI, M2M communication, H2M communication, etc. It is noted that common standards ensure the interoperability of digital technologies and are the foundation of an effective Digital Single Market (EC, 2016).

Public sphere

- *General public/society at large*: Europe's competitiveness and productivity crucially depends on its ability to generate, scale-up and effectively harness digital innovations across all sectors of the economy including Europe's traditional strengths (EC, 2016). Here we consider the general public that may be directly or indirectly affected by the developments within COMPOSITION, as well as people with general interest on the topics addressed within the project.
- *Environmental agencies, associations and companies*: Agencies, associations and companies that are involved in the assessment and decrease of the impact of industrial manufacturing to the environment, covering also aspects or energy consumption reduction.
- *Academic communities*: Parts of the academic world related to the research areas of interest that the project touches (Engineering, Accounting, ICT, Supply chain management, Project management, Environmental studies, etc.).
- *Press*: Selected press that can convey messages from this project to general or dedicated audiences at large.

Policy makers

- *Politicians*: Politicians involved in strategy and decision making process affecting the operation of the functionalities that will be offered by the COMPOSITION ecosystem.
- *CSR responsible personnel in companies*: People involved in the Corporate Social Responsibility related to the design and implementation of the CSR policy, which is part of the company's business model.
- *Business decision makers*: Decision makers at medium and high levels of the structure of companies or organisations that can promote the trial (and potentially adoption) of elements of the COMPOSITION ecosystem.

The main communication ***channels*** of COMPOSITION will be the project website, social media, webinars, partner websites and social media platforms, online publication and journal libraries, conferences, events, workshops, meetings, exhibitions, press and networks (local, national, EC channels). It is noted that the website will be running for at least two years after the project has concluded.

The messages, language and channels used for each target group are described in the following sections. The messages will most likely change and expand as the project progresses and should be considered as a starting point for communication.

In this first version of the current deliverable, specific reference is made to the website and social media.

To this end, the *website* will provide up-to-date information about the project (cf. D9.2 Project Website). Also, a strong representation on relevant social media will be established (LinkedIn, Twitter, and YouTube). It is noted that the *Twitter* account is COMPOSITIONproject, @Composition2016. *YouTube* will be used to share the videos that will be created by the consortium and by the individual partners throughout the project, in order to facilitate knowledge sharing, visibility and exploitation. Additionally, *LinkedIn* will be used to share news, updates and publically available documents, as well as to facilitate the formation of a COMPOSITION community, especially in the second half of the project. Traditional channels such as newspapers and industrial magazines will also be used.

Suited ***messages*** will be selected and attention will be given to the ***language*** when addressing specific stakeholders as described in the following chapters. Moreover, three message phases can be discerned: early, middle and final.

In the *early* stage of the project it is of interest to highlight the strategic opportunities for innovation, better decision making, greater transparency and opportunity to increase revenues. Additionally, the long term value of the automation and globalisation of the COMPOSITION outcomes will be stressed.

In the *middle* stage, emphasis will be put on the resources necessary to support the process and security of data, information will be shared related to costs and benefits, as well as to the pilot demonstrators.

In the *final* stage communication resources will be dedicated to share the results from the demonstrators, on the standardisation efforts, as well as on the business models stemming from the project, in order to support sustainability and make a successful business case.

In any case, the ***message*** aims to ***answer*** the following ***questions***:

- What kind of needs does the project respond to? (Context)

- What kind of problem will we solve and why this solution will be better than existing ones and in which areas? What new knowledge/results will we generate? (Challenges and Mission)
- Who will use these results? What benefits will they have? (Who/Target)
- How will end users be informed about the generated results? (Messages and language)
- How will we spread the news? (Channels)

3.4 Industry

As noted in Section 3.3, the *Industry* target group is comprised by three subgroups, namely manufacturing and process companies, subassembly suppliers and industrial research communities. The rationale behind these subgroups is that it is necessary to include all relevant stakeholders.

Firstly, the main players are considered, the manufacturing and process companies, which are envisaged as the core end users of the components of the COMPOSITION ecosystem. Without them, the end result will have no meaning as it will not be applied and propagated. It is necessary to consider both process and discrete manufacturing companies, keeping in mind that they may have different needs and degrees of freedom.

Then, the key collaborators of the main players will be also addressed. They have been included, because the subassembly -and potentially raw material- suppliers are necessary to produce the end product, whatever this might be. Moreover, they will need to be involved, in order to achieve the end-to-end transformation of the value chain.

Industrial research communities cannot be left out, because COMPOSITION is envisaged as a dynamic, continuously evolving ecosystem that needs to take advantage of key enabling technologies and cutting edge solutions, but it also needs to be able to integrate future emerging technologies and advancements in industrial manufacturing and business models.

3.4.1 Messages and language

The messages towards the industry group need to be concrete and focused. They are usually directed towards people with little time to spare. It is important to carefully select the messages, based on the needs to be covered. The approach “Describe the pain to stress the gain” will be adopted. This means that in order to convince someone to invest or use the solution offered, the consortium will need to “stress the pain”, i.e. the problem solved, in order to “stress the gain”, i.e. the potential return on investment. Specialist language will be used, but customised to the field of interest. For example, when addressing system integrators, a more ICT-oriented terminology will be employed, whilst when addressing production managers in a manufacturing company, more engineering and project management oriented terms will be part of the message.

3.4.2 Channels

The main channels used to reach the industry target group will be the project’s communication channels i.e. website, social sites and webinars, since they offer the ability to engage it. Especially for the website, the ability to share the public deliverables and results of the project is expected to facilitate the communication. Targeted newsletters may also be used to share more specific news, especially on the requirements definition and results of the pilots. Moreover, in order to reach out to large audiences of this specific target group, participation in trade fairs and industry oriented conferences and events is planned. Each partner will make use of their individual channels described in *D9.3 Dissemination Strategy and Plan*, aiming at different segments of the industry audiences. Also, specific actions may be taken to approach certain important

players, whose engagement has the potential of a multiplying effect or whose involvement may aid in the successful implementation of the project.

3.5 Technology domain

As described in Section 3.3, the *Technology domain* target group has also three subgroups, namely ICT research communities, Suppliers of Enterprise and Manufacturing Execution Systems and Standardisation Bodies for interoperability of manufacturing systems. These have been selected because it is necessary to address the complete set of possible stakeholders.

Firstly, the ICT research communities are considered, because the COMPOSITION ecosystem is highly ICT oriented, taking advantage of state-of-the-art in various ICT topics related to supply and value chain management, as well as IoT, data security and more. The interaction is expected to be a two-way street, keeping in mind that they may have different points of view.

Suppliers of Enterprise and Manufacturing Execution Systems are key players in the technology domain, as they are the ones who put the theory, models and demonstrators that may come from the first subgroup into real marketable products. They are also very valuable to the project because they are in close collaboration with a vast range and critical amount of potential customers of the COMPOSITION ecosystem, whilst also being themselves potential customers.

Standardisation is envisaged as key enabler for the competitiveness of the European economy, thus of the project outcomes also. The development of ICT standards faces several new challenges that require a focused and sustained European response. ICT standardisation, together with high-level political support, will boost competitiveness and will facilitate significantly the introduction of products in the market and their compatibility with existing products and systems (EC 2016). To this end, collaborations will be sought with specific working groups that can be reached out using the partners' communication channels.

3.5.1 Messages and language

The messages towards the technology domain group need to be clear on the technologies used within COMPOSITION. They are usually directed towards people with a clear understanding of the tools and methodologies, hence it is essential to provide more specific information on how the project achieves its goals. Specialist language will be used, customised to the field of interest. In the case of the approach towards standardisation bodies, the message needs to be very focused and specific to a narrow field of expertise and the language to be used needs to be compatible with the standardised glossary and terms.

3.5.2 Channels

The main channels used to reach out to the technology domain are events dedicated to ICT research communities and standardisation bodies. These events may be conferences, info days, working group committees to which partners of the project will be invited and the like. Regarding the approach of suppliers of MES, events and trade fairs will be selected. Moreover, the project will take advantage of the individual channels of the partners. Potential collaborations with MES suppliers could have a significant added value also in terms of understanding the business environment and requirements.

The website, social sites and webinars are excellent channels to be used for the technology domain target group, since it contains stakeholders that use these means to communicate and exchange information and news. Targeted newsletters can also have significant impact.

3.6 Public sphere

The Public sphere target group has four subgroups, namely General public/society at large, Environmental agencies, associations and companies, Academic communities and Press. These have been distinguished, as it is essential to convey messages in different ways.

The general public is expected to be directly or indirectly affected by the developments within COMPOSITION. In order for the results to reach out to the largest possible acknowledgement level, society at large needs to be informed about the developments. Moreover, this is a Research and Innovation Action funded by the European Union's Horizon 2020 Framework Programme for Research and Innovation under Grant Agreement No 723145 and it is necessary to ensure a high visibility and to prove that the amount of money is well spent, attaining results that would not be possible otherwise.

Environmental agencies, associations and companies are involved in the assessment and the effort to decrease the impact of industrial manufacturing to the environment. Hence, they are important stakeholders to the project, as there is a strong focus and expected impact and side-effects especially in energy consumption optimisation and/or reduction.

Several academic communities will be addressed, especially via publications and conference participation, as it is necessary to get feedback on the project outcomes, as well as to stay informed on advancements in all COMPOSITION related fields. It should be also noted that the students of today, who will be the innovators and users of tomorrow are also considered be part of this stakeholder subgroup.

It would be a significant oversight to leave out the press. It is planned to issue press releases to mass and more focused media, also making use of social media tools, in order to achieve a multiplying affect and to reach out to a greater audience. National and International press will be considered and targeted according to the nature and level of the achieved advancements in the lifetime of the project.

3.6.1 Messages and language

The messages aimed towards the public sphere surrounding COMPOSITION are a different case than the two previous ones. This is due to the fact that the scope is not to convey technical information and results, but to transfer the overall feeling, approach and impact of the project. The goal is to convince people that the project addresses an issue that affects a lot of people, it offers advancements technology and business wise, it can help increase competitiveness and profitability and it is money well spent by the EU. The language will be more generic and the high level picture will be depicted, using non-specialist terms, easily understood by the broader public. In case of the academic community or environmental association, relative terminology will be used, suited to the individual subgroup.

3.6.2 Channels

Reaching out to the broader public will be done using means such as press releases, newsletters, publications to non-technical press, the project's and partners' websites will be employed. Moreover, the participation of partners in associations and committees, organisations of broader interest can be used to transfer messages to the public. Also, the connections of members of the consortium with the Enterprise Europe Network (EEN) can be exploited, as well as their involvement in Clustering/Industrial Symbiosis activities (EFFRA, FInES, FOCUS, Chorus etc.).

The website is in this case a main channel that can also help communicate newsletters, social media and webinars. It is also a means to achieve engagement of associations, businesses and individuals who may be affected by project results or who are simply interested in the thematic areas touched in COMPOSITION.

3.7 Policy makers

Policy makers are divided in three subgroups; Politicians, CSR responsible personnel in companies and Business decision makers, in order to account for different kinds of policies and their contributors and influencers.

Politicians have the ability to influence regulations, to draft, vote and impose laws. They also have the responsibility to convey the vibe of the market, industry and research so that they can design the path for the future. This is applicable from the smallest parts of specific regulations to the concept of the European Union as a whole.

Additionally, Corporate Social Responsibility has grown to be much more than a marketing tool, it represents an approach to modern manufacturing, linked to ethics and sustainability. Having recognised CSR as a way to operate, as well as a market penetration facilitator, COMPOSITION aims to interact in a two-way manner, in order to prioritise goals and to share achievements.

It would be unrealistic not to include business decision makers. The goal of the project is to develop not only the tools, the marketplace, the ecosystem, but also the business models tied to them. Thus, it is easily deduced that decision makers from medium and high corporate levels are key stakeholders of the project as they can be a pool of early adopters and users. They can influence, in the sense of make or break, business deals that are in the core of this attempt.

3.7.1 Messages and language

The messages addressing policy makers need to be carefully written down, since they could serve as the basis for proposals for actions. Moreover, the added value that COMPOSITION has the ability to bring to the European industry and market needs to be stressed, together with the competences and expertise of members of the Consortium. In most cases it is anticipated that the language will not be technology-focused, though there might be a need to take care in the use of legal terms. Moreover, terms related to financial figures, project management and business administration will be required when addressing business decision makers.

3.7.2 Channels

Reaching out to policy makers is always a difficult task. However, the project can make use of the partners' liaisons to professional associations that are in close collaboration to national initiatives, innovation centres and hubs, as well as business angels associations. Moreover, the messages directed to this specific stakeholder group will be conveyed via the Clustering and Industrial Symbiosis structures, which in turn affect significantly policy and decision makers. It should be pointed out that certain members have the opportunity to present arguments and proposals to Directorate Generals (DGs) of the EC. The value of the project's website, newsletters, press releases, social media and webinars will be also substantial, as they are proof of COMPOSITION's openness and multiplying effect.

4 Communication plan

Communication is related to the promotion of COMPOSITION and its results, using a variety of web communication channels and materials. The following section presents the overview of plan for web communication and marketing material.

4.1 Plan Overview

Plans related to the sharing of the project results i.e. dissemination activities are covered by *D9.3 Dissemination strategy and plan* involving publications, conferences, networking, event organisation and demonstrations. Measuring the efforts through the use of ***Key Performance Indicators*** (KPI) will also be presented in D9.3, as well as the respective timeline. For the sake of completeness, the set KPIs are listed below.

KPIs for visibility

- Number of downloads of material from the website per year: 1.500
- Number of press releases issued: 5
- Number of newsletters issued: 8
- Number of brochures, leaflets, and promotional videos: 6
- Number of domain exhibitions attended: 3
- Number of external workshops, seminars, etc. attended: 16

KPIs for knowledge impact creation

- Number of industrial publications: 7
- Number of conference papers and presentations: 10
- Number of relevant events attended: 16
- Number of contributions to pre-normative work: 5

In relation to the Open Access approach, the Consortium will use the "***green access***" model; creating a self-archived version of any article published in any journal for free public use, in a repository accessed through CERTH within 6 months of publication.

The plan is to continuously and actively publish project news and results on the project and partner websites, as well as through social media channels to ensure visibility.

Key results related to the COMPOSITION objectives and documented in the project deliverables are communicated to the different target groups through the different channels as they appear.

The following list presents the timing (in project months) of indicative major public deliverables (and hence communication) related to the objectives (listed in the introduction to Chapter 3);

- *Contributing to building a stronger, greener EU manufacturing community;*
    - M01: D9.2 Project website

- M02: D9.1 Communication strategy and plan (current deliverable)
- M03: D9.3 Dissemination strategy and plan
- M06: D2.1 Industrial use cases for an Integrated Information Management System
- M06: D2.2 Initial requirements specification
- M12: D9.8 Market segmentation and potential of the COMPOSITION in European Industry
- M24: D8.3 Supply chain pilot I
- M24: D8.5 Value chain pilot I
- M36: D8.4 Supply chain pilot II
- M36: D8.6 Value chain pilot II

- *Show how different parts of the value chain can collaborate to e.g. increase productivity or reduce energy consumption;*
  - M10: D7.4 Test, installation and operation plan template I
  - M14: D7.8 Lab scale use case deployment with lessons learnt I
  - M18: D3.4 Computational Modelling, Simulation and Prediction of Production I
  - M18: D3.6 Computational Modelling, Simulation and Prediction of Logistics I
  - M20: D3.8 Manufacturing Decision Support System I
  - M22: D7.5 Test, installation and operation plan template II
  - M27: D7.9 Lab scale use case deployment with lessons learnt II
  - M28: D3.5 Computational Modelling, Simulation and Prediction of Production II
  - M28: D3.7 Computational Modelling, Simulation and Prediction of Logistics II
  - M30: D3.9 Manufacturing Decision Support System II

- *Explain how comprehensive information and management systems geographical proximity in manufacturing clusters supply chains can improve production efficiency;*
  - M08: D4.6 Viability of WSN as ICT overlay for physical security detection
  - M15: D7.6 On-site readiness assessment of use cases based on existing sensor infrastructure I
  - M15: D3.2 Digital Factory Model I
  - M18: D3.1 Process Modelling Representation and Monitoring Framework
  - M26: D3.3 Digital Factory Model II
  - M29: D7.7 On-site readiness assessment of use cases based on existing sensor infrastructure II

- *Show how research outcomes can be relevant to our everyday lives, by creating jobs, introducing novel technologies, or making our lives more comfortable in other ways;*
  - M08: D5.7 Interoperability for M2M & HMI in factory environments I
  - M12: D4.1 Design of the Security Framework I

- M13: D5.5 Human-machine interfaces for direct interaction with the factory I
- M18: D4.2 Design of the Security Framework II
- M18: D9.10 Exploitation planning framework and first draft of exploitation plans
- M24: D9.9 Sustainable business models for IIMS in manufacturing industries
- M26: D5.8 Interoperability for M2M & HMI in factory environments II
- M27: D5.6 Human-machine interfaces for direct interaction with the factory II
- M36: D9.11 Final exploitation strategy and business plans

- *Make sure that results are taken up by decision-makers to influence policy-making and by industry and the scientific community;*
  - M12: D7.1 Survey of successful elements with recommendations for COMPOSITION use cases I
  - M15: D2.5 Lessons Learned and updated requirements report I
  - M24: D7.2 Survey of successful elements with recommendations for COMPOSITION use cases II
  - M28: D2.6 Lessons Learned and updated requirements report II
  - M36: D7.3 Survey of successful elements with recommendations for COMPOSITION use cases III
  - M36: D7.10 Integrated Business Model Decision System
- *Account for public spending by providing tangible proof that collaborative research adds value.*
  - M16: D8.7 Evaluation framework
  - M36: D8.8 Final evaluation report of the
  - M25: D9.7 Cost, Benefit, and Risk Evaluation

Demonstrators. The following list presents the project's demonstrators which will run from M11 through M36. The deployment in the pilots is expected to be organised in two phases, leading to respective results in M24 and M36. Subsequently, communication activities will follow the set timeline. In those activities, aforementioned Deliverables are included, as well as interactions with relevant stakeholders. It should be mentioned that this is to be done according also to the Dissemination Responsibilities of the partners, as they are presented in D9.3:

Intrafactory Value Chain Centric Pilot 1: Focus on combination of data and forecasts of Work In Progress operations and inventory, addressing also security issues.

Intrafactory Value Chain Centric Pilot 2: Focus on big data exploitation between manufacturing systems at differenct levels.

Interfactory Supply Chain Centric Pilot: Synchronisation of reality and simulations for the multiple stakeholders via a complete end-to-end ecosystem.

Webinars. To boost the dialogue and sharing of knowledge and best practice with stakeholders, three webinars have been planned targeting different stakeholders: industrial innovators, IIMS suppliers,

manufacturing companies, and supply chain consultants. IN-JET will provide hosting for website and webinars and coordinate the design of marketing material. The events will be webcasted live and they will become available later on-demand using IN-JET's webcasting. The option of the webcasting platform has been selected in order to allow for remote participants to participate in the debate via chat and twitter and answer surveys and polls during the events.

The plan is to have the first two webinars in the second year, stressing the innovative aspects of the COMPOSITION technologies. They will focus on integration and collaboration technologies and will have participation of manufacturing experts, supply chain managers and IIMS system architects. In the third year, the third webinar will be conducted to stress the business aspects of the COMPOSITION platform. It will focus on integration and collaboration for new business models and ecosystems with participation of a broad selection of business managers and business developers.

Figure 1 Webinar (live and on-demand)

Communication material for events, exhibitions, will be periodically produced to match the timeline of the targeted events. Additionally, on the project website and on the project's social media accounts, the content will be continuously updated. Communication activities will be in close collaboration with dissemination and exploitation activities and the exact message will be agreed with the involved partners in the respective efforts to achieve the optimum impact. In order to facilitate the grouping and propagation of the COMPOSITION messages, three (3) iterations of the project advertising material have been planned to be provided as publicly available deliverables, namely:

- M04: D9.4 Project advertising material I
- M14: D9.5 Project advertising material II
- M26: D9.6 Project advertising material III

The aim of the ***marketing activities*** is to create general awareness of the project's results, of the business opportunities and models, of the advancements accomplished in certain research fields and of the innovative aspects to be designed and deployed at the COMPOSITION pilot sites. It is necessary to stress the impact expected to be achieved on energy and resource efficiency in manufacturing processes across the value chain. A further aim is to help partners prepare for exploitation activities individually, in groups and as a whole consortium, by providing visible and tangible tools for promotion. As it has been already mentioned, the design of marketing material will be coordinated IN-JET in close collaboration with the involved partners at the specific stages and tasks of the project.

Especially for the first year the goal is to create awareness about the COMPOSITION project to potential users and stakeholders. This will be achieved with the publication of marketing material: brochures, flyers, posters, web site. Moreover, press releases will be prepared and published and effort will be applied on forming liaisons with business stakeholders. The effort will continue throughout the project's lifetime with the

appropriate updates and modification of the marketing material, keeping in mind that each marketing tool will be construed to the exact target group as described in Chapter 3.

A preliminary *leaflet* will be produced during the first 3 months of the project in order to disseminate the objectives and the expected results and impact of the project. Two *posters* will be designed for use in trade-shows and workshops. Finally, a pre-commercial *brochure* will be developed in the beginning of the third year, when the methods and components of COMPOSITION are known. After the first demonstrator has been successfully build, a *video* will be made for distribution to the general public and the industrial community. Further small videos will be produced in the course of the project. The project will also produce four *newsletters* describing the results obtained in the project and planned activities. *Press releases* will be issued ad-hoc in relevant languages, depending on the project's progress. A press release is prepared to announce the start of the project. Each partner organisation will issue the press release locally, customised to their main audiences.

The project measures the effects and impact of communication and dissemination by using quantitative and qualitative measures. The project has defined a set of relevant quantitative KPIs to measure impact, some of which have been presented in this chapter. The proposed time schedule towards the achievement of the KPIs is given in D9.3 together with the rules for giving advanced notice to other beneficiaries, when they are explicitly mentioned in project publications, as well as the timeline for the preparation of the communication and dissemination material.

Besides these KPI, the project will closely monitor and record results generated from communication and dissemination activities such as feedback from events, interviews, visits to the project website, press coverage and business opportunities.

4.2 Internal communication

To ensure maximum impact of COMPOSITION it is important to consider communication and dissemination in everything that the project does and communicate and coordinate these activities within the project. It is necessary to ensure effective internal communications on: a) Day to day communications, b) Project Meetings, and c) Reporting.

For the ***day to day communications***, FIT has already installed a web-based project extranet to support collaborative working. It contains workspaces for partners and file sharing, a tool to manage project requirements and innovations, and a web-based *Wiki* space, allowing participants to work cooperatively. *BSCW* is used as collaborative knowledge repository, together with an evolving design pattern library that is customizable to the project's needs. Regarding the Wiki framework, Confluence has been provided as an intuitive platform for collaborative document editing. As it is also reported within WP1, the Coordinator also provides infrastructure for the convenient operation and administration of *mailing lists*.

Apart from these, day to day communications include *teleconferences* using the various means available by the partners. A *calendar* for planned meetings has been set up, where it is suggested that all meetings involving two (2) or more partners are registered, in order to monitor the frequency of communications, improve collaborations, as well as to facilitate project management reporting.

In the *email* exchanges it is recommended that all partners indicate in the subject: [COMPOSITION] T (Task) or WP (Work Package) or D (Deliverable) and the matter of interest. For example an email to share information about the internal communication specifications would be entitled as follows.

> [COMPOSITION]: D9.1 Internal communication specifications

The Coordinator and the partners have certain obligations and rights in what concerns the ***Project Meetings***, as described in the Consortium Agreement and they will be continuously reported throughout the project.

In terms of the ***Reporting***, specific templates have been prepared and distributed to the partners and a peer review process of all deliverables is described also within WP1 outcomes.

The more formal obligations and responsibilities when communicating and disseminating the project results are covered in *D9.3 Dissemination Strategy and Plan*.

5 Lists of Figures, Tables and Abbreviations

5.1 Figures

5.2 Tables

5.3 Abbreviations

Abbreviation	
CSR	Corporate Social Responsibility
D	Deliverable
DG	Directorate General
EC	European Commission
EEN	Enterprise Europe Network
EU	European Union
H2M	Human to Machine
HMI	Human Machine Interaction
ICT	Information and Communication Technologies
IIMS	Integrated Information Management System
IoT	Internet of Things
KPI	Key Performance Indicators
M	Month
M2M	Machine to Machine
MES	Manufacturing Execution Systems

6 References

(EC, 2014) European Commission (2014). Communicating EU research and innovation guidance for project participants.

(EC, 2016) European Commission (2016). ICT Standardisation Priorities for the Digital Single Market.