



## D1.4 INTERIM FINANCIAL AND TECHNICAL REPORT

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## Executive summary

Deliverable D1.4, Interim Financial and Technical Report, presents information and findings on the first half of the DiDIY Project, i.e., M1-M15 (January 2015-March 2016). It was planned as a mirror of the Periodic Report on the first reporting period, by inheriting from that Report the basic structure and contents.

Due to a persisting situation of uncertainty on the policy to correctly report financial data, it was decided not to include financial data in this version of the deliverable.

After its formal release, updated versions will be then possible.

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## Introduction

### *Purpose, structure, and state*

This deliverable presents information and findings on the first half of the DiDIY Project, i.e., M1-M15 (January 2015-March 2016). It was planned as a mirror of the Periodic Report on the first reporting period, by inheriting from that Report the basic structure and contents. Accordingly it is organised in four main sections:

- A. a publishable summary;
- B. an extended description of the work done so far and the main outcomes;
- C. an update of the plan for exploitation and dissemination of result;
- D. a list of tables synthesising some formal facts about the Project.

Two anomalies must be pointed out in this version of the deliverable.

First, as specified in the Grant Agreement, the deliverable was due by M15, thus making it practically impossible to report data of the whole expected period, ending indeed at the same M15. This was considered a clerical mistake, and in agreement with the Project Officer it was decided to postpone the submission to M16.

Second, due to a persisting situation of uncertainty on the policy to correctly report financial data, generated by a change in the Italian legislation introduced after the beginning of the Project and affecting in particular the structure of costs to be reported and the related distribution of effort, it was decided not to include financial data in this version of the deliverable.

After its formal release, updated versions will be then possible.

### *Terms and acronyms*

EC	European Commission
GA	Grant Agreement
CA	Consortium Agreement
SB	Steering Board
PC	Project Coordinator
PO	Project Officer
WP	Work Package
TT	Transversal Task
WPL	Work Package Leader
MO	Management Office
LAB	Legal Advisory Board
ABACUS	AB.ACUS SRL - Member
FKI	STICHTING FREE KNOWLEDGE INSTITUTE - Member
AC	AMERIKANIKO KOLLEGIO ANATOLIA - Member
POLIMI	POLITECNICO DI MILANO - Member
MMU	THE MANCHESTER METROPOLITAN UNIVERSITY - Member
UOW	THE UNIVERSITY OF WESTMINSTER LBG - Member
LIUC	UNIVERSITA' CARLO CATTANEO LIUC - Coordinator
DIY	Do It Yourself



DiDIY	Digital Do It Yourself
ABC	Atoms-Bits Convergence
IP	Intellectual Property
KF	Knowledge Framework



## A. Publishable summary

### ***A1. Summary of the context and overall objectives of the Project***

Do-It-Yourself (DIY) is a long-standing phenomenon, characterized by individual activity to create, repair, and modify objects. It typically occurs outside of companies and without the support of paid professionals. People engage in DIY fields as diverse as mechanics and electronics to gardening, pottery, sewing, or home decoration, sometimes with economic justifications, but also driven by personal satisfaction, interest in extreme customization, or social reputation. In a context of industrialisation, that separated producers and users, DIY became a means for individuals to recover their autonomy by the productive and creative use of their skills and time.

Today, information processing technology is widespread, embedded in computers, smartphones, drones, 3D printers, home automation systems, etc, changing the role of DIY and the way DIYers operate. To designate this emerging socio-technological phenomenon of DIY enabled and reshaped by digital tools we coined the term “Digital Do-It-Yourself” (DiDIY).

The most important features of DiDIY, as identified in the first stages of Project research, are:

- *DiDIY is both an activity and a mindset, hence with both object-related and subject-related components;*
- *the distinction between users and producers of artefacts is becoming fuzzy and new opportunities and threats emerge accordingly;*
- *DiDIY-related technologies and social practices amplify the creativity and skills of individuals who now can afford to develop digitally self-made objects;*
- *what an individual produces could be the outcome of contributions from a worldwide community of developers sharing their insights and ideas in a spirit of open knowledge and innovation.*

DiDIY is then a primarily human-centric phenomenon, rapidly evolving thanks to the widespread social availability of affordable technological tools and the growing number of DiDIYers operating in communities. The impressive quantitative growth of individuals connected through these communities further lowers the technological and psychological barriers to new entries and thus makes DiDIY increasingly attractive.

In this dynamic context the Project aims at developing a well-structured body of knowledge to explore the social impact of DiDIY, to produce and disseminate information, models and guidelines to support education and policy making on DiDIY, and to engage in conversations of development and inspiration around this. It starts from the idea that DiDIY has the power to improve our society, but to this goal it would benefit from the input of a cultural strategy rather than being driven solely by the market and technology.

The subject is acknowledged to be multidimensional, and as such studied, by analysing how DiDIY is reshaping organization and work, and education and research, and by exploring how it is impacting on creative society and legal systems, and is changing creative design and ethics.

The development of a systemic interpretation is the challenge for the multidisciplinary research team, which is collaboratively exploring the phenomenon with implications on identity, privacy,



reputation, responsibility, creativity, innovation, policy and politics, and will offer a roadmap fostering a vision of DiDIY-based human-centric European development.

## ***A2. Work performed from the beginning of the Project to the end of the first period and main results achieved so far***

The hypothesis at the basis of the Project and its structure is that DiDIY still requires a basic understanding of its features and dynamics before guidelines to support policy making on DiDIY can be effectively developed. Three main activities have been performed so far.

*1. Development of a Knowledge Framework on DiDIY, that harmonises languages and research methodologies and proposes a structured interpretation of the phenomenon.*

The Framework was developed as the result of the systematic collaboration of all partners. It also presents some preliminary data on DiDIY-related online communities and a draft ontology on DiDIY, providing the specifications for the under development simulation package “A Model of Making”.

*2. Preliminary analysis on how DiDIY is reshaping organization and work, education and research.*

The literature review was set up as a multidisciplinary task. The topics on which research started about organization and work are the impact of DiDIY on workers in manufacturing companies, the development of entrepreneurial activities in makers environments, and the impact of DiDIY on managerial roles formally entitled to deal with investments in digital technologies. Fieldwork was started on education and research by interviewing relevant stakeholders and intercepting spontaneous activities growing up in different countries and educational environments.

*3. Design and activation of the Project dissemination infrastructure and first systematic related activities, also for guaranteeing the long term sustainability of the Project results and supporting the diffusion of DiDIY.*

The Project website, including a blog, and social network accounts were activated. After direct contacts with representatives of all categories of stakeholders, Project members started to give interviews, write articles and submit scientific papers, in order to make the Project and its preliminary results known to different audiences. DiDIY has been presented at over seventy events so far. A rich documentation has been published, including a brochure, five factsheets, and free online courses of introduction to DiDIY. A policy on the sharing of Project results was drafted to assure dissemination under free licenses and open standard formats. The Project Legal Advisory Board was constituted, with reputed legal scholars and lawyers active in DiDIY-related fields. All documents presenting these results are accessible from the Project website.

## ***A3. Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)***

The phenomenon of DIY has been relatively neglected in social studies to date, despite its emergence as a significant practice and movement over several decades, and its potential for driving improvements for individuals, schools, companies, organisations, and society as a whole. Digital tools have allowed a new emphasis of collaboration and open sharing within (Di)DIY, but before this Project this was rarely studied in a systematic way: the Project is thus innovative.



The Knowledge Framework under development highlights the human-centric nature of DiDIY and might become the first tool able to systematically analyse and interpret DiDIY, being built on a rich conceptual structure that takes into account:

- *the main dimensions of involvement in DiDIY: DiDIY as cognitive process, individual practice, and group process in the societal context;*
- *the components of such involvement: DiDIY as activity and mindset, and DiDIYers as doers, adapters, makers, and creators;*
- *the necessary conditions of what DiDIY is and the multiple interpretations of what DiDIY may be, analysed using the four core perspectives of the Project: DiDIY in organisation and work, in education and research, in creative society, and in laws, rights and responsibilities.*

The Project has integrated contributions from a broad range of academic disciplines and is showing that:

- *(in organisation and work)* digital technologies are transforming the concept of DIY by exploiting knowledge sharing within communities into new configurations of Digital Do-It-Together in which functional roles blur – this research could identify ways to achieve better individual and organizational performances by studying the features leveraging on, or conflicting toward, DiDIY within several different organizational domains;
- *(in education and research)* DiDIY is largely a bottom up phenomenon, related to the flow of skills and knowledge between stakeholders, the steps of learning processes and the outcomes, and the technology involved in learning processes – this research could indicate ways of improving the uptake of teaching/research tools as well as raise citizens' expectations about the potential of DiDIY by mapping what is going on in different countries in different environment;
- *(in creative society)* DiDIY influences, alters, or empowers the dynamics of makers' relationship to digital technologies, and it enables DiDIY communities to meet the challenge of local, social, and environmental problems in a new way – this research could help guide communities towards the creative resources they need for tackling problems, with a consequent impact upon policy making regarding support for DiDIY initiatives;
- *(in laws, rights and responsibilities)* current legal systems are challenged by and provide challenges to the emerging culture of DiDIY, as in the case of the “right to repair” which is needed in order to make production less environmentally damaging – this research could influence the formulation of future policy and legal measures by developing a clear overview of the main challenges and policy recommendations that fit with the new paradigm. The establishment of the Legal Advisory Board with external legal experts, lawyers and scholars will help guide these outcomes.

Furthermore, the research is showing that DiDIY-related phenomena can be effectively modelled and simulated, capturing the activity of making so to explore “what if” scenarios on the impact of DiDIY, in order to better understand the effect of: different licensing laws/systems on its growth; sharing and communication structures concerning how makers interact and organise themselves; how the development of makerspaces/fablabs could facilitate the development of DiDIY. This understanding will improve the development of the Knowledge Framework and eventually the policy recommendations of the Project.



## B. Explanation of the work carried out and overview of the progress

### B1. Objectives

The Project is designed in reference to the following objectives, stated in section 2.1.1, “Objectives”, of the Grant Agreement, Part B:

- (i) *to establish a conceptual framework that will enable the analysis, exploration and understanding of the impact of DIY in a human-centric digital age;*
- (ii) *to produce well-founded transferable information, models and guidelines to support both education and policy making on DiDIY as it is forming, intended as an ongoing phenomenon that, while surely enabled by technology, should be driven and shaped by social and cultural strategies, not technology.*

The organisation of the Project in Work Packages is shaped accordingly, with an explicit symmetric structure (see the diagram below) developed in terms of:

- a *backgrounder* activity, aimed at establishing the enabling conceptual framework (WP2) mentioned in objective (i) and at guaranteeing an appropriate management of the Project (WP1);
- on this ground, an *analysis* (WP3 and WP4) and *exploration* (WP5 and WP6) activity, also mentioned in objective (i);
- as a result, a *synthesis* activity, aimed at producing information, models, and guidelines (WP7) mentioned in objective (ii), and at disseminating them (WP8).

In order to emphasise the importance of a collaborative work in the analysis and exploration activities, two Transversal Tasks (TT1 and TT2) are also active.



The specific work carried out by each WP and TT and the main results obtained so far to achieve the two general objectives are presented in the section B1.2 below.



Relating to objective (i), a conceptual framework on DiDIY has been grounded in the interpretation presented in deliverable D2.2, “Foundational interpretation of DiDIY”, and then developed in two subsequent versions of a Knowledge Framework, presented in D2.3 “Knowledge framework, initial version”, and D2.4, “Knowledge framework, revised version”, respectively. As planned, the Knowledge Framework is operating as the conceptual and terminological enabler for the analysis on the ways DiDIY is reshaping organization and work, and education and research, whose first results are presented in particular in D3.1, “Research model”, and D4.1, “Research space and agents”, and D4.2, “Integration of background knowledge”, respectively.

Relating to objective (ii), an intense activity of dissemination has been already started, in order to communicate the preliminary information and interpretations produced, as presented in particular in D8.1, “Project website”, D8.4, “Current DiDIY support and awareness in Europe”, D8.6, “Policy Factsheets, first version”, and D8.8, “Full courseware of the online courses”. Moreover, D8.7, “Interim dissemination and communication report”, documents, among the others, the about 70 events and 10 publications in which Project partners have presented DiDIY.

## ***B2. Explanation of the work carried per WP / TT***

*Note that – as explained in section B2.1.10, “Deliverables and deliverable submission process”, below – after the beginning of the Project a Work Package, WP9, was created by a Commission Initiated Amendment imposing a new management of ethics requirements of the Project. From a technical and functional point of view such contents were originally considered part of WP1, and hence WP9 is not listed in what follows.*

### **B2.1 Work Package 1: Project Management**

*WP1 began on January 2015 (M1 of the Project) and since then it has been active. WP1 Leader is the Project Coordinator, Luca Mari, LIUC. All partners contributed to the activities of the WP.*

#### **B2.1.1 Highlights**

WP1 is aimed at managing the Project and thus in particular at guaranteeing a smooth and efficient collaborative work of all partners.

23 deliverables were expected to be submitted in the first 15 months of the Project, and all of them have been released in due time but 2, in agreement with the Project Officer, both submitted one month later (*see the section B2.1.10, “Deliverables and deliverable submission process”, below*).

2 internal milestones were set at M6 and M15, and both were met according to the decision of the Steering Board (*see the section B2.1.8, “Milestones”, below*).

3 meetings of both the Steering Board and the Technical Board of the Project were set, at the beginning of the Project activities and since then each 6 months, and all of them were regularly and fruitfully held (*see the section B2.1.6, “Project meetings”, below*). All decisions taken by the SB have been recorded in the related Project meeting minutes (*see the section B2.1.7, “SB decisions”, below*).

The contacts among the partners and of the Project Coordinator with the Project Officer have been systematic and positive.



### B2.1.2 Roles and responsibilities

The roles and responsibilities that were introduced in D1.3, section 2.2, “Responsibilities”, have been maintained so far.

The Project Coordinator guaranteed a smooth and efficient collaboration among all partners and kept systematic contacts with the Project Officer (an email received on 7 September 2015 informed that Project Officer was changed, from Mr David Guedj to Mr Martin Majek).

The Steering Board met face-to-face three times, at the beginning of the Project and then each 6 months, and all these meetings have been regular and fruitful. Several online meetings were held by the SB in March 2016 to finalise the preparation of the Periodic Report and the related deliverables; the mailing list sb@didiy.eu has been maintained and regularly exploited by all members of the SB.

The Technical Board met face-to-face three times, in conjunction with the meetings of the SB, and all these meetings have been regular and fruitful. All discussions made by the TB have been recorded in the related Project meeting minutes. The mailing list tb@didiy.eu has been maintained and regularly exploited by all members of the TB. In order to stimulate a wider and more intense participation, both at the TB meetings and in the mailing list all researchers involved in the Project activities have been invited. The table in section D5, “Gender of R&D participants”, below contains the number of active researchers in the Project, split by partner and by gender.

Work Package Leaders have systematically been in contact with the PC; each WPL reported the state of the WP-related activities in each of SB meetings, and in December 2015 all each WPL produced a SB-internal written report to further document the state of the WP activities.

### B2.1.3 WP progress

According to D1.3, section 3.5, “Work Package progress”, each WPL is in charge of assuring that the work in the WP is carried out according to schedule and that the expected deliverables are produced. Each WPL is responsible for the technical and scientific aspects as well as for the day-to-day management of specific work related to the WP. Each WPL coordinates the implementation of WP activities as defined in the work plan. Within her/his respective WP and for the duration of the WP, each WPL has the responsibility to achieve all planned deliverables.

The progress of work is tracked with the following objectives:

- the activity corresponds to Project specifications;
- all steps of development activity are fully documented.

A significant part of the second and the third SB meetings was devoted to review the state of WPs, on the basis of specific presentations given by the WPLs.

No specific issues were identified regarding WP progress so far.

### B2.1.4 Documentation management

According to D1.3, section 3.6, “Documentation management”, the documentation management procedure defines standard rules and procedures related to documentation production and is applicable:

- by all partners,
- for all deliverables to European Commission.



The procedure is described in D1.1, sections 3, “Documentation management”, 4, “Archiving and storing”, and 5, “Internal Collaboration Tools”.

In deliverable D8.1, “Project website”, a list of internal collaboration tools is presented and justified. After the third SB meeting other online tools, e.g., Skype for online meetings and Google Docs / Sheets / Presentations, have been experimented to make the internal communication and the online collaborative development of documents more effective and efficient.

In the early stage of the Project the issue was arisen whether the deliverables whose Dissemination level is public can be actually published even while in “submitted” status, i.e., before their formal approval. In order to start the dissemination of the Project outcomes as soon as possible and in agreement with the PO, it was decided to publish, in the Project website, section “Results” ([www.didiy.eu/project/results](http://www.didiy.eu/project/results)), a slightly modified version of all such deliverables, in particular including the sentence “This document is the basis of the Project deliverable Dx.x”.

No specific issues were identified regarding documentation management so far.

**B2.1.5 Risk management**

A detailed analysis of the risks that may potentially affect the smooth Project course is in GA – Annex I Part A, section 1.3.5 WT5, “Critical Implementation risks and mitigation actions”, and then in D1.3, section 4, “Risk management”.

As detailed in D1.5, “Interim internal quality assurance report”, to the table of identified risks and mitigation measures one more row (R7) was added, for taking the newly identified risk “Object of analysis more immature than supposed” into account.

The table in section D3, “Critical risks”, below contains the complete list of identified risks, together with the description of the proposed risk-mitigation measures and the analysis of the related situation so far.

**B2.1.6 Project meetings**

According to Decision 3, made at the kick-off meeting, along the Project time span the SB and the TB will meet together face-to-face at intervals of six months to review the work performed in the meantime (in the GA, section 2.3.2, “Management structures and procedures”, the minimum period of meeting was set to ten months). The schedule of the meetings, reviews, and milestones is then as follows:

Year	2015												2016												2017						
Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
Month#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	first reporting period												second reporting period																		
	kickoff																														final conference
TB meetings	1					2							3						4					5						6	
SB meetings	1					2							3						4					5						6	
EC reviews																	1													2	
Milestones					1										2												3			4	

The list of the SB/TB meetings held in the first 15 months of the Project is as follows:



Meeting	Month	Venue	Date
Kickoff / 1 <sup>st</sup> meeting	M1	Università Cattaneo - LIUC, C.so Matteotti, 22, Castellanza (VA), Italy	22 - 23 Jan 2015
2 <sup>nd</sup> SB/TB meeting	M7	Politecnico di Milano, Via Durando, 10, Milano, Italy	13 - 14 Jul 2015
3 <sup>rd</sup> SB/TB meeting	M14	Anatolia College/ACT, New Building, Thessaloniki, Greece	4 - 5 Feb 2016

The PC, following the procedures stated in the CA [6.3.2, Preparation and organisation of meetings], sent a written original agenda before each meeting to each member.

According to the GA, section 2.3.2, “Management structures and procedures”, “additional meetings [of the SB] can be arranged if necessary as well as contacts through electronic media (i.e., video or phone conferencing or email)”. The list of the SB online meetings in the first 15 months of the Project is as follows:

Meeting	Date
1 <sup>st</sup> meeting	7 Mar 2016
2 <sup>nd</sup> meeting	21 Mar 2016
3 <sup>rd</sup> meeting	30 Mar 2016

### B2.1.7 SB decisions

All decisions taken by the SB have been recorded in the related Project meeting minutes and are listed here.

<b>1st meeting</b>	
Decision 1	In the next months all partners will contribute to the definition of the knowledge framework through an online discussion, based on software tools to be identified.
Decision 2	As soon as possible, FKI will set up a test system for both the Project website and the internal collaboration, and all partners will contribute to the testing activities, also providing the materials to be uploaded in the stable system, as soon as ready.
Decision 3	The meetings of the Steering Board will be held each six months together with the meetings of the Technical Board.
Decision 4	Tasks T5.5 and T6.4 will be concluded at M26.
Decision 5	Deliverables D7.2, D7.3, and D7.4 are assigned to UOW, ABACUS, and FKI respectively.
Decision 6	WP7 and T7.1 will start at M9.
Decision 7	WP6 and T6.3 will start at M2.
Decision 8	POLIMI explores the opportunity to organize the July 2015 meeting in Milano, possibly with some joint event with Expo 2015.
<b>2nd meeting</b>	



Decision 9	Milestone MS1 has been achieved.
Decision 10	T2.4 will start at M9.
Decision 11	WP Leaders are invited to produce clear communication about what and how Project members are expected to contribute, including checkpoints for the development of deliverables.
Decision 12	At the moment for the development of deliverables WP Leaders are invited to adopt the tools that they think are the best ones to achieve excellent outcomes. In this choice WP Leaders are invited to use open source tools and to avoid unneeded changes that only would generate inefficiencies.
Decision 13	FKI will coordinate the development of a Project brochure and a video to promote the Project. All partners, but in particular LIUC and POLIMI, and of UOW for the video production, will cooperate.
Decision 14	Next meetings will be held as follows (preliminary, revisable plan): third meeting, in January 2016, hosted in Thessaloniki (Greece) by AC; fourth meeting, in July 2016, hosted in Barcelona (Spain) by FKI; fifth meeting, in January 2017, hosted in London (UK), by UoW. In the case of problems to have the third meeting in Greece, MMU will host it in Manchester.
<b>3rd meeting</b>	
Decision 15	The fourth meeting will be held on 4 and 5 July 2016 in Barcelona (Spain), hosted by FKI. These dates will be definitely confirmed by FKI by 10 March.
Decision 16	The achievement of the second milestone, MS2, will be decided in an online meeting of the SB, to be held by the end of March 2016.
Decision 17	The coordinator will ask the Project Officer if it is possible to defer the submission of deliverable D1.4, by proposing the following timeline: 15 April, submission of deliverable D1.4; 30 April: submission of periodic report; week 9-13 May or week 16-20 May, first review meeting in Brussels.
Decision 18	A Task Group is appointed to propose possible improvements to the current dissemination policy and activities of our Project. The Task Group is requested to produce its recommendations by the end of February 2016. The Task Group is coordinated by the WP8 Leader, Marco Fioretti, and includes Marita Canina, Enrico D'Amico (or an ABACUS delegate), David Gauntlett, Paola Negrin.
<b>3rd online meeting</b>	
Decision 19	Milestone MS2 has been achieved.
Decision 20	Tasks T3.1 and T3.2 will be concluded at M28.

### B2.1.8 Milestones

The Milestones to be achieved in the first 15 months of the Project are listed elsewhere in this Report. The following decisions of the SB meetings are related to the achievement of these Milestones:

- Decision 9. Milestone MS1 has been achieved.
- Decision 16. The achievement of the second milestone, MS2, will be decided in an online meeting of the SB, to be held by the end of March 2016.
- Decision 19. Milestone MS2 has been achieved.

The table in section D2, “Milestones”, below lists the milestones achieved so far.

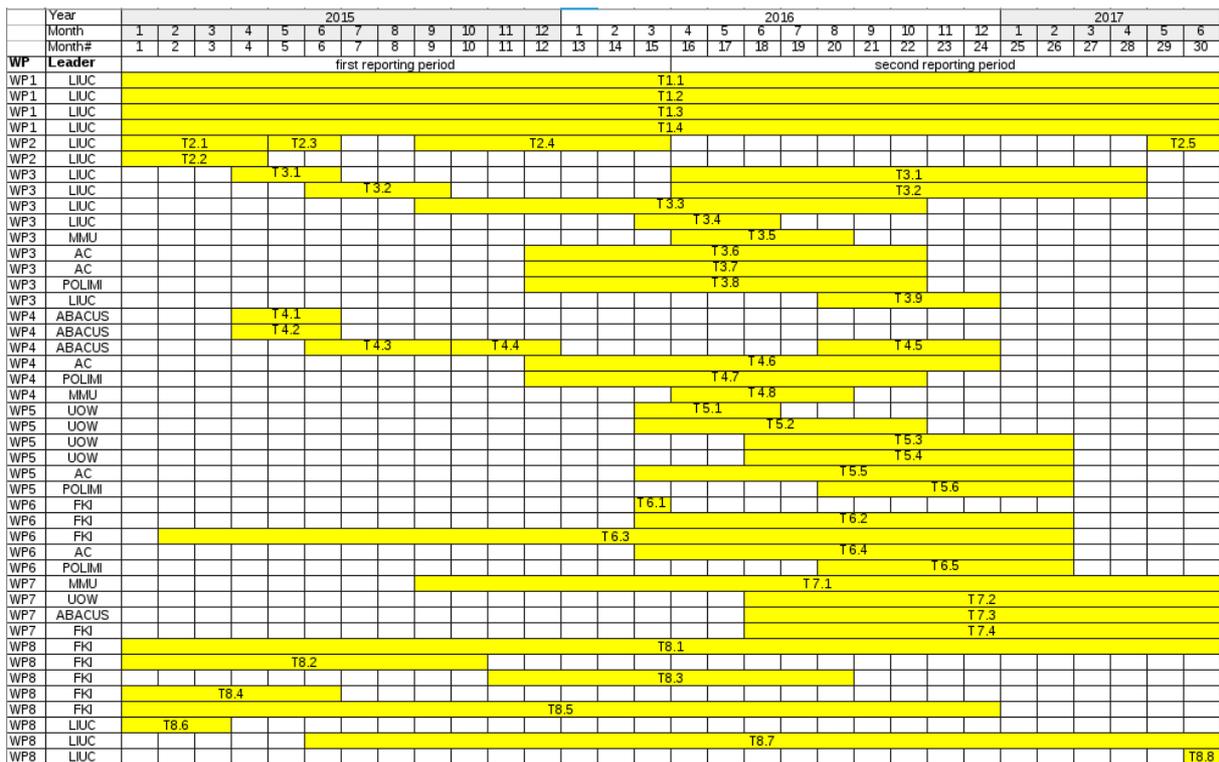


**B2.1.9 Time span of Project Tasks**

Some changes were introduced in the time structure of some Tasks of the Project, as recorded in the Gantt chart, with respect to the version included in the GA, either to fix clerical mistakes or to improve the schedule of such Tasks in the specific conditions of WP development in relation to the acquired information and the developed knowledge. Each of these changes was proposed by the relevant WP Leaders, approved by the SB, and documented in the minutes of a SB meeting. The related decisions are:

- Decision 4. Tasks T5.5 and T6.4 will be concluded at M26.
- Decision 6. WP7 and T7.1 will start at M9.
- Decision 7. WP6 and T6.3 will start at M2.
- Decision 10. T2.4 will start at M9.
- Decision 20. Tasks T3.1 and T3.2 will be concluded at M28.

According to these changes the current Gantt chart of the Project is as follows:



**B2.1.10 Deliverables and deliverable submission process**

All deliverables were developed according to the agreed quality indicators, as specified in D1.1, section 3.2.4, “Document review and delivery”. The PC evaluated the final draft of each deliverable according to the following quality indicators:

- the deliverable is in accordance with the objectives stated in the GA – Project description;



- the deliverable offers appropriate documentation on the work done in the corresponding WP;
- the deliverable is compliant with the templates and editing guidelines as outlined within D1.1, “Project management plan”;
- the deliverable is clear and well readable;
- the deliverable is complete;
- the deliverable is useful for the target reader/audience;
- version history is clear and well documented.

All deliverables expected in the first 15 months of the Project were submitted by the PC to the EC within the due date, with two exceptions explained below.

The first exception relates to D1.4, “Interim financial and technical report”, due by M15 according to the GA. Since the contents of D1.4 are expected to refer to all first 15 months of the Project, the submission date set to M15, thus making impossible to include the data about the last month, was considered a clerical mistake. According to Decision 17 and later communications between PC and PO, the new due date for D1.4 is postponed to 30 April 2016.

The second exception relates to D1.9, “First ethical report”, due by M15 according to the GA.

According to an automatic email received by the PC on 1 February 2016, a brand new Work Package, WP9, was created related to the ethics requirements of the Project. Starting from Table 1.4, Ethics Requirements, of Annex I of the GA, 12 deliverables were created, each referring to an ethics requirement in the Table. All these new deliverables are attributed to the newly created WP9, and according to the Participant Portal online system have the Dissemination Level “Confidential, only for members of the consortium (including the Commission Services)” (differently from D1.9, which is Public), have LIUC as Lead Beneficiary, and are oddly stated to be delivered by 1 April 2015.

Despite the redundancy, the PC agreed with the PO that both D1.9 and the new D9.\* will be delivered, basically with redundant contents, all of them by 30 April 2016.

Moreover, a clerical mistake was found in the GA at the beginning of the activities, and was fixed by the following decision of the SB:

Decision 5. Deliverables D7.2, D7.3, and D7.4 are assigned to UOW, ABACUS, and FKI respectively.

The table in section D1, “Deliverables”, below lists the deliverables submitted so far.

## **B2.2 Work Package 2: Creating and maintaining a shared knowledge framework on DiDIY**

*WP2 began on January 2015 (M1 of the Project) and has been active in 13 of the first 15 months of the Project. WP2 Leader is Luca Mari, LIUC. All partners contributed to the activities of the WP.*

### B2.2.1 Main activities and outcomes

The main goal of WP2 is to develop a Knowledge Framework on DiDIY that can provide a common conceptual and lexical ground to the activities performed in the Project by integrating the different competencies of the interdisciplinary Project team, in particular by harmonizing languages, approaches and research methodologies.



The preliminary exploration on the multiple aspects of the phenomenon of DiDIY, as documented in the deliverables D2.1, “Options for the knowledge framework”, and D2.2, “Foundational interpretation of DiDIY”, revealed its greater variability in space and time, resulting in a greater complexity, than initially supposed. The first version of the Knowledge Framework, released as deliverable D2.3 “Knowledge framework, initial version”, on June 2015 as the results of the collaborative work of all partners, has been then only weakly structured, in terms of “pillars”, that provide the fundamental shared interpretation of what DiDIY is, and “dimensions”, that offer views in specific aspects of what DiDIY may be.

On the basis of this first version, subsequent extensive analyses and the work done in the meantime in all other WPs, the second version of the Knowledge Framework has been released as deliverable D2.4, “Knowledge framework, revised version”, on March 2016, including a more structured presentation and interpretation of DiDIY, more clearly and explicitly emphasising the human-centric nature of the phenomenon, metaphorically presented as a building under construction made of:

- pillars, i.e., the yes/no condition of existence of the phenomenon: pillars are central to the building, that cannot stand without them;
- load-bearing walls, i.e., the more/less interpretations common to two or more WPs: the load-bearing walls carry the weight of the building and are common to all storeys;
- storeys e internal walls, i.e., what is specific to each WP / TT and the related interpretations: each WP corresponds to a storey, that includes some internal walls.

This structure reflects the underlying strategy driving the development of the Knowledge Framework and possibly the whole Project, as progressively formulated so far: DiDIY is a too complex and dynamic phenomenon for admitting an effective sharp definition, that would enable to unambiguously discriminate what is DiDIY and what is not. Rather, we chose to adopt a flexible interpretation, admitting, for the several dimensions identified, a potentially continuous range of positions, from a “DiDIY in a narrow sense”, epitomised by what we are proposing to call the “Atoms-Bits Convergence” (ABC), to a “DiDIY in a broad sense”, that includes also more consolidated cases. This standpoint is strategic because it allows us to maintain an open minded approach to the phenomenon and to study its development in both a synchronic and diachronic perspective.

The Knowledge Framework also reports and analyses some data on DiDIY-related online communities, and presents the first draft of an ontology on DiDIY, developed from the initial work on Integrative modelling in WP7, together with the first results obtained by the simulation package “A Model of Making”, under development on the basis of the ontology.

As planned, the Knowledge Framework is performing the twofold function of proposing a structured, content-rich introduction to DiDIY for anyone outside the Project team and of providing a shared context for all activities of the Project team.

#### B2.2.2 Lessons learned, relevance of the research, and plausible next steps

While surely not new, and potentially of great importance to drive changes that might improve not only individuals but also communities, schools, companies, organisations, and our society as a whole, the phenomenon of DIY has been relatively neglected in social studies so far. In this context the diffusion of widely affordable digital tools is rapidly changing some traditional features of DIY,



for example by introducing a much greater emphasis on collaboration and open sharing of knowledge, with the consequence that from the point of view of scientific research DiDIY appears an almost still unexplored phenomenon. Hence what generally the Project team is producing appears to be significantly innovative, and the main outcomes are going to be presented in academic papers.

In particular, the Knowledge Framework, developed in WP2, emphasises that DiDIY is a primarily human-centric phenomenon, rapidly evolving thanks to the widespread social availability of affordable technological tools and the growing number of DiDIYers operating in communities. The impressive quantitative growth of individuals connected through these communities further lowers the technological and psychological barriers to new entries and thus makes DiDIY increasingly attractive.

The Knowledge Framework might become the first tool able to systematically analyse and interpret digitally-enabled DIY phenomena, being built around a rich conceptual structure grounded on:

- the fundamental dimensions in which human beings can be involved in DiDIY (DiDIY as cognitive process, individual practice, and group processes and the wider societal context);
- the components of such involvement (DiDIY as an activity and a mindset, and DiDIYers as doers, adapters, makers, and creators).

On this basis the Knowledge Framework presents:

- the necessary conditions of what DiDIY is;
- the multiple interpretations of what DiDIY may be, particularly analysed in view of the four “core” Work Packages of the Project (DiDIY in organisation and work, in education and research, in creative society, and in laws, rights and responsibilities).

This structure will support the expected further development of the contents of the Knowledge Framework in the second half of the Project.

### **B2.3 Work Package 3: Analysing how DiDIY is reshaping organization and work**

*WP3 began on April 2015 (M4 of the Project) and since then it has been active. WP3 Leader is Aurelio Ravarini, LIUC. All partners contributed to the activities of the WP.*

#### B2.3.1 Main activities and outcomes

WP3 carried out two main activities so far:

- literature review;
- development of a preliminary research framework.

The literature review was set up as a multidisciplinary task. Instead of focusing on a pre-defined array of specialized research topics, we searched the scientific literature using keywords identified within the Knowledge Framework, developed in WP2, such as “democratization”, or “makers”, and general concepts such as creativity, organization, digital technology. This approach led to the identification of more than 70 recent publications dealing with the impact of DiDIY on work and organization from a very heterogeneous set of academic disciplines, ranging from sociology to software engineering, from innovation management to design.



The review confirmed the complexity of the tasks of WP3 and the need of a number of different research perspectives to guarantee a sufficiently complete representation of the organizational implications of the DiDIY phenomenon. Such results were presented in the deliverable D3.1, “Research model”, released on January 2016.

On the basis of the literature review we identified a set of research assumptions and a general architecture of the research framework: the WP3 research activities will be carried out in reference to several Research Topics (RT), each of them characterized by research questions, methodology and empirical domain. The first 3 RTs identified are:

- RT1. the impact of DiDIY on workmen in manufacturing companies;
- RT2. the development of entrepreneurial activities in makers environments;
- RT3. the impact of DiDIY on managerial roles formally entitled to deal with investments in digital technologies.

In parallel with the development of the activities in each RT, WP3 will develop a general set of principles (descriptive lenses) and guidelines (prescriptive approach) to deal with the subject of the research.

#### B2.3.2 Lessons learned, relevance of the research, and plausible next steps

The activities carried out so far within WP3 contributed to define the characteristics of the DiDIY phenomenon by drawing an up to date and sufficiently complete picture of the research about the concepts related to DiDIY. By searching the scientific literature for “digital crafts”, makers, IoT, 3D-printing, “peer production”, “open innovation”, we identified a broad range of academic disciplines that has already explored one or more aspects of DiDIY, and precisely: Software Engineering, Human computer interaction, Information Systems, Innovation Management, Organizational Science, Sociology, Entrepreneurship / Strategic Management, Design, CSCW (the detailed literature review is reported in deliverable D3.1).

This outcome represents a contribution to academic research because:

- it clearly supports one of the main hypothesis of the Project: the need of a multidisciplinary approach to understand the DiDIY phenomenon, and it shows which are the academic fields that shall be included in our study;
- it highlights the immaturity of the phenomenon from a scientific point of view, suggesting that the methodology for the empirical investigation should follow an exploratory approach.

WP3 activities, both the literature review and the preliminary empirical investigations, led to raise the issue of the opportunity to overcome the popular, although academically not defined, concept ‘Maker’ and to introduce the term “DiDIYer” to denote those individuals representative of the DiDIY phenomenon. Such a new term, “DiDIYer”, allows to describe more broadly the impact of DiDIY on work and organization, beyond the domain of Fablabs and startup accelerators, where typically makers are recognized. Within WP3 we introduce a conceptual framework that identifies a DiDIYer by merging the “DiDIY as a mindset” and the “DiDIY as an activity” perspectives. DiDIY impact on work and organization occurs when a certain organizational role carries out – on her own – certain activities previously carried out by experts (Do-It-Yourself), by exploiting certain digital technologies, possibly exploiting the knowledge sharing within a certain community (Do-It-Together).



This operative characterisation of DiDIY, as reported in D3.1, will enable identifying new streams of study and maintaining the coherence of the future steps of research within WP3.

## **B2.4 Work Package 4: Analysing how DiDIY is reshaping education and research**

*WP4 began on April 2015 (M4 of the Project) and since then it has been active. WP4 Leader is Enrico D'Amico, ABACUS. All partners contributed to the activities of the WP.*

### B2.4.1 Main activities and outcomes

WP4 defined the research framework and the methodology to investigate the DiDIY phenomenon in the field of education and research. This framework was defined within September 2015 and it is well described by the first three deliverables of the WP, namely D4.1, “Research space and agents”, D4.2, “Integration of background knowledge”, and D4.3, “Methodological plan”.

The overall result of these three documents is a map of relevant stakeholders – we already started contacting them – together with a selection of suitable tools to carry on a deeper and wider investigation on the phenomenon. Indeed, it is well known that DiDIY is becoming more and more widespread in formal and informal educational and research environments, supporting strong modifications in teaching and research methodologies taking place at different levels. The preliminary data collected so far seem to confirm this initial hypothesis. To better understand the current status of the phenomenon, field work has started by following two converging routes:

- contacting and interviewing the identified relevant stakeholders at national and international level by means of ad-hoc in-person or remote interviews, as well as organizing joint workshop to meet and engage with active DiDIYers;
- implementing a bottom up approach intercepting spontaneous activities growing up in different countries and educational and research environments.

### B2.4.2 Lessons learned, relevance of the research, and plausible next steps

The WP4 activities aim at describing the current use of DiDIY in education and research. The identification of methodological tools and potential investigation routes – identification of stakeholders at European level, as well as educational/research environments – has set the research framework that will enable the Project to get a comprehensive view of the phenomenon, not yet available at national and international level.

Indeed, education, mainly in informal environments, is a bottom up phenomenon, still very difficult to assess and classify. Our investigation will aim both at identifying best practices (at different education levels) and at assessing the expectations of the citizens (namely students and their families, teachers and informal educators). Our current investigation work, based on the two lines above mentioned, will lead us to two main results, of a strong potential impact on societal issues:

- the development of a clear map of the current situation at EU level with regard to educational and research environments (both in traditional settings, in particular, universities, and outside) involved in the DiDIY movement. We expect to use the collected data to develop a structured and innovative approach for a wider and better use of DiDIY in European schools and research facilities;
- the development of a clear understanding of expectations of the citizens and of the concrete educational and research potential of DiDIY-related tools. Indeed, a clear understanding of



the matching between the potentialities of the new tools and the expectations of students, teachers, and researchers may have a strong societal impact in terms of training, learning, and research paths in Europe.

### **B2.5 Work Package 5: Exploring the impact of DiDIY on creative society**

*WP5 began on March 2016 (M15 of the Project) and hence it has been active just one month. No deliverables were released so far. WP5 Leader is David Gauntlett, UOW. The research fellow for this Project, Isabelle Risner, joined the Project in January 2016 (M13).*

#### B2.5.1 Main activities and outcomes

Since WP5 began only very recently, there has been little research time to date, although preparatory work has been carried out by the WP Leader. This has included:

- research into potential case study and workshop scenarios, which has underpinned the development of a research plan and schedule;
- developing contacts and making preparatory research visits, and attendance and engagement at events;
- developing a written framework for the Creative Society WP5 research and contributing this to Project dissemination;
- writing documentation to underpin WP5 research methodologies, including participant information and consent forms for case study participant and workshop outline methodology.

#### B2.5.2 Lessons learned, relevance of the research, and plausible next steps

WP5, focused on the role of DiDIY in fostering a creative society, will engage with, and collect evidence from, a substantial number of emerging and diverse DiDIY makers, projects, organisations and companies, with regard to the creative impact of their work. In addition, a number of workshops will explore the creative impact of DiDIY engagement among groups such as self-employed entrepreneurs, crafters, hobbyists, designers, children and members of the public. Research will be carried out among both online and physical communities.

This research will provide a new and substantial body of evidence, gathered via video recorded and transcribed interviews, and creative DiDIY workshops, that explore the creative aspects of this phenomenon. This will be used to consider the important research questions laid out in the Grant Agreement. Research will focus on two broad areas of creative impact not previously documented in detail:

- the impact on the creative agency of individuals. The research will assess the creative potential of DiDIY for a range of makers, including whether DiDIY can influence, alter, or empower the dynamics of an individual maker's relationship to digital technologies. It will investigate and offer an interpretation of what human-centred, low-cost and low-key DiDIY creativity can, and cannot, achieve. The research will therefore have a bearing on policy making regarding the value of future development of grass roots engagement with digital technologies;



- the impact on creative society, including examples of the ability of DiDIY projects to enable DiDIY communities, online or offline, to meet the challenge of local, social and environmental problems. In this regard the research is expected to give a view as to the potential for DiDIY to provide the creative resources for communities to tackle problems locally and therefore impact policy making regarding support for DiDIY initiatives.

## **B2.6 Work Package 6: Exploring the impact of DiDIY on laws, rights and responsibilities**

*WP6 began on February 2015 (M2 of the Project) and since then it has been active. No deliverables were released so far. WP6 Leader is Wouter Tebbens, FKI. All partners contributed to the activities of the WP.*

### B2.6.1 Main activities and outcomes

WP6' main goals are:

- to investigate the ethical implications of DiDIY on rights and responsibilities;
- to investigate the creative design implications of DiDIY on rights and responsibilities;
- to assure the dissemination of the Project results under free licenses and open standard formats, and its raw data as Open Data;
- to investigate and provide a permanent reference about the main legal issues associated with the social diffusion of DiDIY.

WP6 has worked to identify the legal challenges and put them in context, drawing lessons from the history of the Internet and global transitions taking place, also through a co-design workshop, resulting in a list of main topics to be studied for WP6 ([www.didiy.eu/didiy-rights-and-obligations-legal](http://www.didiy.eu/didiy-rights-and-obligations-legal)): liability; ownership of DiDIY resources; exclusive rights (IPR); licensing and exemptions; 3D printing of exclusively protected products; IoT and privacy & anonymity; pathogens and 3D printed guns; ethics; blockchain technologies for distributed applications; DIY drones.

An overview of open hardware licenses and of online platforms for sharing 3D designs was made. Several potential cases for potential further study have been registered at the DiDIY repository.

A draft policy on the sharing of Project results was produced, which was approved by the SB and presented as preliminary versions of deliverables D6.4, "Legal aspects of dissemination of project results", and D6.5, "Use of open standards and collaboration tools". These policies were implemented in the disclaimer page ([www.didiy.eu/disclaimer](http://www.didiy.eu/disclaimer)) of the Project website.

An initial list of bibliography on ethics-related perspectives is published ([www.didiy.eu/ethics-literature](http://www.didiy.eu/ethics-literature)).

All outcomes have been published on the Project website and have been checked with the Legal Advisory Board (LAB), activated in March 2016 and constituted of very reputed legal scholars and lawyers active in various fields directly related to Digital DIY: Malcolm Bain, Primavera de Filippi, Angela Daly, Carlo Piana, Melanie DuLong de Rosnay, Andrew Katz. Apart from their reputation and willingness to participate, we are also very happy with the gender parity of this Board, three men and three women.

A particularly noteworthy effort for WP6 was made in March 2016 when the Project co-organised the Commons Collaborative Economies conference (<http://procomuns.net>) together with the Barcelona City Hall and various EU projects (P2Pvalue, D-Cent, DiDIY) and local civil society



groups. More than three hundred people participated in the 3 day encounter, including several European Commission representatives. The Project coordinated and actively participated in 4 sessions that are directly related to DiDIY, IoT, industrial commons, legal and policy questions related to DiDIY, open source circular economy.

#### B2.6.2 Lessons learned, relevance of the research, and plausible next steps

From the initial research activities in WP6 a long list of topics has emerged, where the old legal system seems to be challenged by and provide challenges to the emerging culture of DiDIY. The main topics have been listed at [www.didiy.eu/didiy-rights-and-obligations-legal](http://www.didiy.eu/didiy-rights-and-obligations-legal).

One preliminary conclusion is that (most of) the current legal system has been designed for business logic and practices that developed during the first and second industrial revolutions, needing big, centralised manufacturing infrastructures for mass production. However the currently emerging new culture and practices, as pointed out by the Project, have a very different logic that fits in many cases only partially with the old legal structures. As the economic and social production system is in serious transition, we should ask ourselves whether these legal systems need and can be brought in balance with current needs or that certain well defined moratoria might be more suitable to let the new culture prosper instead of stifling it in its infancy, and once matured come up with more suitable legal changes. Consider the “right to repair”, which is socially much needed in order to bring the economy in line with a more sustainable way of production. Here we might need to go beyond the current limitations of IP laws in order to foster a thriving repair economy.

These and other topics will be explored in more detail in the second half of the Project activities.

### **B2.7 Work Package 7: Integrative modelling, guidelines and tools for the transferability of results**

*WP7 began on September 2015 (M9 of the Project) and since then it has been active. No deliverables were released so far. WP7 Leader is Bruce Edmonds, MMU. All partners contributed to the activities of the WP.*

#### B2.7.1 Main activities and outcomes

The following steps have been done in WP7:

- researched the relevant issues and facts about DiDIY in conversation with the other Project partners;
- designed, implemented and tested a flexible modelling framework, which will allow these issues to be explored in a variety of models in response to feedback from domain experts;
- created an illustrative model to show what this could do – “a model of making”;
- presented this model at the third Project meeting to gain feedback and suggestions as to what future models/versions should concentrate upon and what these models may miss out;
- collected and analysed the comments and now developing a plan for the next stages of model development.

This resulted in some positive suggestions for scenarios to be explored using simulations within the Project (how the structure of communication changes things, the impact of Maker Spaces, and the impact of licensing options and IP laws) and some basic extensions to the simulation framework



(multi-dimensional motivations, skills, and communication of plans). The main results achieved include:

- a computer-programming library to facilitate the development these models, released to the public on December 2015 (<http://cfpm.org/discussionpapers/154/factbase-a-netlogo-extension>). In order to make the, relatively complex, simulation framework easier whilst still retaining a relative level of code transparency we developed an extension to the NetLogo language which will provide some features similar to those in declarative programming languages or SQL queries. This was programmed in Java and made public on the NetLogo extensions website so it will also be useful to others. Although this extension does a complex computational job, what it is doing is transparent because a high-level analogy is sufficient to understand its operation. The prototype simulation model uses this extension in the core of its agents memory and learning abilities;
- a prototype Integrative Model, “A model of making”, released to the public on February 2016 ([www.openabm.org/model/4871](http://www.openabm.org/model/4871)). The purpose of this model is to provide the simulation infrastructure needed in order to model the activity of making, i.e., individuals using resources they can find in their environment plus other things that other individuals might sell or give them, to design, construct and deconstruct items, some of which will be of direct use to themselves, some of which they might sell or give to others and some of which might be used as a tool to help in these activities. It explicitly represents plans and complex objects as separate entities in the model, embedding the “Atoms – Bits” distinction highlighted within the Project. This allows plans to be shared between agents, which give the steps of how to make objects of use, either on a commercial or a free basis. The framework is intended as a basis upon which many, more specific, models could be constructed, allowing the exploration of a variety of “what if” or counterfactual possibilities and thus give a concrete but dynamic and complex instantiation of the issues and situations discussed within the Project;
- an Annex to the Knowledge Framework, developed in WP2, to start the process of relating the modelling to it.

#### B2.7.2 Lessons learned, relevance of the research, and plausible next steps

Although NetLogo is a well-developed language, it lacks some facilities that would make programming cognitive agents easier. We have programmed and publically released a Netlogo Extension to make this much easier, allowing the flexible storage and querying of predicates. This extension will be useful far beyond the Project, bringing cognitive modelling and social simulation closer. In particular, the European Social Simulation Association SIG on cognitive modelling has been involved in beta testing it.

The prototype model is, of itself, a considerable advancement on the current state of the art. Although related complex market models, ecological models and distributed AI models have existed before, this is – to our knowledge – the first ever social simulation model of making. This makes explicit the DiDIY parallel processes of “Atoms” and “Bits” and allows their relationship to be explicitly explored. It will allow different scenarios to be explored and thus enable a better understanding of their consequences. Each of these scenarios, in its own right, could have a significant impact upon our understanding of these and their potential impact upon society.



The prototype model will be presented at international conferences from the summer onwards (e.g., Social Simulation 2016). Each of the three scenarios will be the basis for an academic paper, and its results feed into the other WPs.

Three developments of this work are planned:

- to further develop the simulation framework, in two directions: (i) to include skills, that is an ability to perform sequences of steps at increasing quality learnt over time, and (ii) to include multiple motivations such as novelty and reputation;
- to then develop the 3 scenarios agreed upon: (a) the structure of communication (the impact of the internet and sharing on websites), (b) makerspaces allowing the sharing of tools and expertise, and (c) Intellectual Property laws or Licensing Schemes. These will be developed in conjunction with the expert input by other partners;
- to co-develop the modelling framework and scenarios with the final version of the Knowledge Framework, by (i) providing concrete illustrations of parts of the Knowledge Framework (ii) influencing the thinking about the Knowledge Framework by involving Project members in the modelling and expanding how they think about complex social phenomena.

## **B2.8 Work Package 8: Dissemination, future roadmap and sustainability**

*WP8 began on January 2015 (M1 of the Project) and since then it has been active. WP8 Leader is Marco Fioretti, FKI. All partners contributed to the activities of the WP.*

### B2.8.1 Main activities and outcomes

The two main, interrelated goals of WP8 are:

- coordinating and performing the dissemination and communication activities throughout the whole duration of the Project, in order to make its results known and to establish contact with DiDIY stakeholders who may exchange related information with Project members, or perform some activities with them;
- working to guarantee the long term sustainability of the Project research results and proposals that aim to support the diffusion of DiDIY in European society.

The first task performed in WP8 to accomplish these goals was the design and construction of the Project website, [www.didiy.eu](http://www.didiy.eu), the activation of official social network accounts (@digital\_diy on Twitter and the Facebook page [www.facebook.com/didiyproject](http://www.facebook.com/didiyproject)), and the configuration of several online tools for internal communication and collaborative work among Project members, as documented in deliverable D8.1, “Project website”. Since its initial configuration, the Project website, and especially the blog section, has been used to present the main activities of the Project, and report about interesting DiDIY-related activities from third parties.

The second step was the detailed definition of the communication and dissemination activities to be performed during the Project, as documented in D8.2, “Dissemination and communication plan”. The first main action defined in that plan, whose execution started in spring 2015, was direct contacts with representatives of all the categories of stakeholders, which include, but are not limited to: makers, software hackers, public administrators, students, teachers, lawyers, trade unions and other workers organizations, associations of Small and Medium Enterprises. In May/June 2015 we



started to give interviews or write articles for several printed or online magazines, in order to make the Project known to as many different audiences as possible.

Since spring 2015 all Project members have also started to submit scientific papers, or to present the Project, its goals and already ongoing activities to several conferences or meetings with makers and other stakeholders. The first round of these conferences and meetings was mostly focused on the Open Hardware/Free Software academic and activist communities, but since autumn of 2015 we started to reach much more diverse communities, for example researchers in the farming and sustainable development fields.

In total, in the first 15 months of the Project, we presented DiDIY, or organized events about it, over seventy times in all kinds of events, from private meetings with makers to talks and panels in international conferences in several European countries.

The other main dissemination and communication activities of 2015 have been the execution of some pilot surveys, presented in D8.3, “First online surveys”, and D8.5, “Second online surveys”, the publication of an official Project brochure and, above all:

- a report about the current level of support and awareness in Europe, in D8.4, “Current DiDIY support and awareness in Europe”;
- five factsheets on DiDIY, available online at [www.didiy.eu/project/fact-sheets](http://www.didiy.eu/project/fact-sheets) and documented in D8.6, “Policy Factsheets, first version”. Besides a general one, we have published one factsheet for each main research area of the Project: organization and work, education and research, creativity and legal rights and responsibilities;
- the first version of an online freely accessible course of introduction to DiDIY ([www.didiy.eu/digital-diy-course-introduction](http://www.didiy.eu/digital-diy-course-introduction)), documented in D8.8, “Full courseware of the online courses”.

The rich set of dissemination activities done so far, to which all partners contributed, and their main outcomes are presented in D8.7, “Interim dissemination and communication report”.

#### B2.8.2 Lessons learned, relevance of the research, and plausible next steps

All in all, at the end of the first quarter of 2016 the results of dissemination activity seem to be relatively limited in quantity, if measured in terms of number of already established regular contacts or active partnerships with EU institutions or other stakeholders, or in terms of attention by mainstream media. At the same time, the results seem quite positive in quality, if measured in terms of how many different stakeholders and audience types have been already introduced, and also of the signs of interests received by several of them, in spite of the complexity of the research topic.

The main findings of the “Support and Awareness” report, as well as of many other contacts and activities were the confirmation that, as we also found in other WPs, DiDIY as seen and studied in this Project is a very wide and important phenomenon, but also one that, in many cases, is very little studied and acknowledged today. In addition to this, we have found that the point of view and case studies, as well as the type of final results and documents that we will produce, are much closer to other EU projects and researches in the social innovation field than to those specifically devoted to digital technologies. Some of these findings have been summarized in the mentioned factsheets.

Eventually, all these findings, plus internal discussion and analyses, led to update the Project dissemination plan as explained in section C, “Update of the plan for exploitation and dissemination of result”, below.



## **B2.9 Transversal Task 1: DiDIY and creative design**

*As a Transversal Task, TT1 is constantly active. TT1 Leader is Marita Canina, POLIMI.*

### B2.9.1 Main activities and outcomes

TT1 has laid down the fundamental basis of activities in the next 15 months and contributed to the development of the ongoing activities under WPs 2, 3, 4 and 8.

The main task for TT1 is setting up of two series of co-design workshops to be held at the beginning of the second half of the Project. To this purpose we first identified crucial factors to be investigated as potential features of the current DiDIY phenomenon. The main result is the need for a wider exploration of DiDIY as a phenomenon of social innovation fostering empowerment and the development of key competences. In particular we are focusing on the development of the so called “21st century skills”, which include creativity and critical thinking, collaboration and effective communication. This analysis resulted to be a fundamental basis not only for the development of TT1 activities but also a significant contribution to the structure and development of the Project main themes and the Knowledge Framework in particular.

In order to collect material for the co-design workshops, we are developing a collection of primary data plan for a clearer understanding of if and how such competences emerge in the DiDIY practice. This includes direct observation and research activities in the places where such practice is carried out, in particular makerspaces. We identified and gathered existing tools from different design approaches and toolkits, with particular attention given to creativity processes and creativity elicitation tools. Specific tools will be created or adapted from co-design approach and literature gathered in order to trigger and understand the dynamics, which are often tacit and latent, underpinning the enactment of such skills in DiDIY. The data collected will feed our interpretation of the dynamics fostering the development of the key competences and will be represented through an ad-hoc model. The overall findings from TT1 will feed the other WPs.

TT1 contributed to:

- WP2 by participating to the discussion around the development of the foundational interpretation of DiDIY and the Knowledge Framework, and in particular by reporting reflections on definitions and descriptions of DIY, studies of co-design and Social Practice Theory, debate around related issues such as materials, skills and sustainability;
- WP3 by providing information on the creative process as a dimension of the research framework, so to make it applicable to the design profession case (namely design professional, company design department, or designer in residence). We are also liaising for the development of common areas of investigation, such as the development of collaboration skills to support the role of coordinators as facilitators of employees tasks and engagement in the working environment;
- WP4 by developing specific themes for deliverables D4.1 and D4.3, including a better understanding of making as a learning process and the constructionism learning theories, the potential and categorization of making-based learning activities, and how the teaching/learning flow happens and who are the key players involved in the learning process;
- WP8 by designing the graphic layout for different products to support the dissemination plan, including: the Project website, in collaboration with WP8 Leader, which required the



assessment of (more than 10) Drupal options according to licensing requirements, budget and graphic/functional desirable features (the detailed description of this is in an Annex of deliverable D8.2); the Project logotype, inspired by the flows of knowledge involved in DiDIY (the detailed description of this is in an Annex of deliverable D8.2); the Project brochure, to be released in both printed and digital formats; the Project website banners, to link the different WP description pages; the Project factsheets, to communicate main Project findings; the integration of contents regarding creativity in the online courses task.

### B2.9.2 Lessons learned, relevance of the research, and plausible next steps

The impact generated by the activities of TT1 will be more clearly assessed after the completion of the co-design workshops planned for the second half of the Project. They will reveal how the hypotheses of investigation and created tools proved to be. We expect that hypotheses on key competences for the next century which may take place through DiDIY will contribute to a better understanding of the potential which such phenomenon embeds in terms of social innovation and citizen empowerment. This could be of special interest for studies on learning by doing, for education and policy fields in particular.

Co-design is proposed not only as a research model but (just as an hypothesis for now) as a tool to enhance DiDIY practices. The group would like to investigate, as part of the workshops, if co-design could be implemented as working tool for people involved in DiDIY. The tools of investigation that we will create will have an impact on how to elicit and foster people engagement in making activities intended for their improvement of skills and empowerment. They represent the more tangible outcome to be used by research, private and non-profit organizations operating for social innovation.

### **B2.10 Transversal Task 2: DiDIY and ethics**

*As a Transversal Task, TT2 is constantly active. TT2 Leader is Vincent C. Müller, AC. The postdoctoral researcher for this Project, Alexandre Erler, joined the Project in July 2015 (M7).*

#### B2.10.1 Main activities and outcomes

Faced with the task of “ethical issues” we decided that we should not try to work on a holistic analysis of “issues” in each of the relevant WP, but rather identify significant problems, that occur in a significant range of DiDIY activities. Our research identified the main problems of a) safety and risk, b) allocation of responsibility, c) threat to intellectual property rights and d) reshaping work and education. We summarised these findings in short accessible text that provides a brief explanation ([www.didiy.eu/node/2462](http://www.didiy.eu/node/2462)) of the ethical issues. In our context, we generally use the “narrower” notion of DiDIY, i.e., we cover activities where some Atoms-Bits Convergence (ABC) occurs, though we keep an eye on the “broader” notion of digitally enabled DIY.

We decided to tackle these problems issues by example through work that lends itself to academic papers. The research has lead to drafts, at various stages of completion, of papers on:

- state of the art: DiDIY and product liability;
- digital synthetic biology and biohacking;
- 3D bioprinting and human enhancement;
- state of the art: ethics of 3D bioprinting;



- digital and physical risk;
- DiDIY, cyber-weapons, gun control and file control.

Intermediate results have been presented in the Project blog and listed on [www.didiy.eu/ethics](http://www.didiy.eu/ethics), relating to topics such as DiDIY and product liability; the ethics of 3D bioprinting; digitally manufactured weapons and gun control. We also presented draft versions of these papers as invited workshop contributions or as individually invited papers in Munich, [Bielefeld], Leeds, Sheffield, Paris, Copenhagen and Geneva. On the basis of these papers, we are working on Project future deliverables, and in particular D3.3, “Ethical issues and work”, D4.6, “Ethical issues in education/research”, D5.6, “Institutions and creative DiDIY”, D6.2, “Ethical impact for regulation”.

We made a sub-site for our issue of ethics, the central page of which is [www.didiy.eu/ethics](http://www.didiy.eu/ethics). Here we list the work already performed and in particular together with WP6 we make our bibliography on the issue publicly available: [www.didiy.eu/ethics-literature](http://www.didiy.eu/ethics-literature). This bibliography is a major contribution to an area with next to no extant academic structure to draw upon.

Of course, we also contributed to the overall activities of the Project, in particular to the Knowledge Framework and the Policy Factsheets. We are planning to hold at least one workshop on ethical issues in DiDIY.

#### B2.10.2 Lessons learned, relevance of the research, and plausible next steps

The area of TT2 is almost totally undiscovered in the academic discussion. So, in this case, the progress beyond the state of the art consists in structuring the problems, identifying the major issues and the possible approaches, including links to extant research in related areas, such as intellectual property rights, product safety, medium-term risk, etc, as outlined above.

The impact of this work beyond a clearer image of the problems and a better awareness in the community is mainly on policy: we can still catch this development early and decide whether extant control mechanisms need to be refined in order to avoid significant risk, such as the inability of allocating responsibility, or further erosion of intellectual property rights, and the threats from uncontrolled DiDIY.

The areas of research in which we have made the most progress so far include what follows.

First, the impact of DiDIY on product liability. The blog entry mentioned above represented a first step in our reflection on this issue. It has since been further developed into a full section for one of our reports, which could either be D3.3 or D6.2 (still to be determined). After reviewing the challenges posed by the rise of DiDIY for current European laws on product liability, as well as the few solutions that have been proposed in the existing academic literature, we suggest that while these challenges do need to be taken seriously, an aggressive response at the legal level is not called for. For example, there are strong links between the practice of DiDIY and the free, open-source movement (whether at the level of the software, hardware, and digital blueprints used to make a DiDIY product). Introducing measures that would increase the liability of the creators of such open-source products would almost certainly stifle innovation in this field and might well, if sufficiently stringent, spell the end of the movement and of the various benefits it provides to society. As a result, we suggest that less radical solutions – sometimes generated by the participants themselves – are more likely to strike the right balance between the value of promoting such innovation and respecting everyone’s autonomy, on the one hand, and on the other hand the need to protect



consumers from defective products and to ensure that they know the level of risk they might be taking when deciding to use an open-source tool to make a DiDIY product.

Second, the general threats from DiDIY. There is a substantial amount of discussion about the impact of the digital revolution on intellectual property (IP) rights and the need to revise extant legal systems. There are also known fundamental socio-economic changes for entire industries that are traditionally based on intellectual property, especially the music and video industry, advertising and publishing – largely due to the inability to control violation of IP rights because digital files allow multiple realisation and perfect replication, as well as enabling anonymity. The digital realm also has a strong cultural preference for a “state of nature” and “free information”, being opposed to “control”. It is thus assumed that these changes affect “the media” – but not design and production of artefacts. We argue that this assumption is false because the digital revolution is now supplemented by a revolution in digital systems that automatically transform bits-to-atoms (prominent examples are 3D printers and industrial robots) and atoms-to-bits (as in sensor systems and 3D scanning). Even though there are practical limits to these technologies, digital making will undermine IP rights on 3-dimensional design, just as digital media technologies did for 2D design and arts. Furthermore, it will remove the distinction between threats in the digital realm (“cyberspace”) and the physical realm so that cybersecurity and physical security will really be a single problem: 3D printed guns, killer-robots and biohacking are cyberthreats, just like the hacking of digital systems of some opponent. Whatever moves into the digital realm moves into a “state of nature”: we may well get the worst of both worlds, with the uncontrollability of the digital but the impacts of the physical.

### ***B3. Impact***

After 15 month from the Project’s inception, the impacts outlined in the DoA are worth reconfirmation. As planned, the multidisciplinary competencies of the consortium have been proven useful to approach the multifaceted issues related to DiDIY. In particular, the Knowledge Framework of the socio-technological phenomenon of DiDIY, as defined by this consortium, will constitute the cornerstone of the future development of the Project. Within this shared and collaboratively developed Framework, the Project will further investigate the ways by which individuals and communities work, learn, create, and behave in a new hyper-connected environment, where new ABC technologies are pivotal. Moreover, aspects such as how these new developments affect behavioural, social, and ethical aspects will be tested against the provided Knowledge Framework. This Framework is being continuously updated, so as to offer maximum transferability of the results in terms of integrative models and guidelines. At the end of the Project, it will provide a well-founded transferable innovative concept and proven functional model, which policy makers and stakeholders could exploit in future research, policy and regulatory agendas.

The initial fieldwork and contacts with people involved in the different sides of the DiDIY movement (FabLabs, Makerspaces, Hackerspaces, etc) have confirmed the initial hypothesis: such an ongoing phenomenon in which technological, economic, social, and even ideological components overlap was in need of a systematic study. More importantly, the Project has been proven timely: appropriate policies could still support and orient its progress towards making it an enabler of social and economic development in a human-centric society; furthermore, the



identification of strategies of promotion and governance of a liquid society – in which expertise and competences are spread among different actors – is still possible.

To maximise the impact of the Project, a series of actions has been already devised and implemented, among which educational materials, technical reports and scientific publications (see the following section for further details).



## C. Update of the plan for exploitation and dissemination of result

The findings and experiences from the first 15 months of Project activities have shown that, while the basic assumptions in the Project proposal and original dissemination plan remain valid, some of their components needed to be either updated, or implemented in slightly different ways in the second half of the Project.

An action plan to improve the Project website, [www.didiy.eu](http://www.didiy.eu), was defined in February/March 2016, and implemented throughout April 2016. The plan consisted of (i) changing its visual look and feel, (ii) changing structure and content of the home page, and (iii) generally making some of its content easier to find, and more accessible to the general public.

In parallel, it has been decided to intensify communication through the website, taking into account the experience of the first months, and exploiting other dissemination deliverables like the Project brochure, factsheets, online courses, and some videos. Blogging shall become much more frequent, publishing not only original content, but also excerpts of relevant online content, in order to establish direct contacts with DiDIY stakeholders and practitioners all over Europe. This approach, started in February 2016, has already yield positive results in terms of online visibility, and interaction with other DiDIY stakeholders.

Other online dissemination activities, in addition to the online courses implemented as planned in the Project proposal, will include online contest and other challenges carried on on social networks, as described in D8.7, “Interim dissemination and communication report”.

On another, even more important, level, and again using the results and deliverables of the first stage, the Project has started to actively pursue direct partnerships with other institutions and projects. Such partnerships range from contributions to an e-book on “Women Empowerment in STEM” to evaluations on if/how to work together with several European Universities, NGOs and other organizations.

We also intend to replicate in the future the experience of “DiDIY Mini Tours” like the ones held respectively in Thessaloniki in February and Venice in April 2016. These tours consist of full days in which we meet, in several meetings, independent DiDIY stakeholders in the same city or province/county.



## D. Tables

### D1. Deliverables

#### D1.1 Deliverables submitted in M1-M15

*This table lists the deliverables submitted during the first reporting period of the Project.*

ID	Title	WP	Lead beneficiary	Type	Dissemination level	Due month	Submission date
D1.1	Project management plan	WP1	LIUC	report	Confidential	2	28.2.2015
D1.2	Consortium Agreement	WP1	LIUC	report	Confidential	2	28.2.2015
D1.3	Internal quality assurance plan	WP1	LIUC	report	Confidential	3	31.3.2015
D1.8	Informed consent procedures and recruitment criteria	WP1	LIUC	report	Public	3	31.3.2015
D8.1	Project website	WP8	FKI	website	Public	3	31.3.2015
D8.2	Dissemination and communication plan	WP8	FKI	report	Public	3	31.3.2015
D2.1	Options for the knowledge framework	WP2	LIUC	report	Public	4	30.4.2015
D2.2	Foundational interpretation of DiDIY	WP2	LIUC	report	Public	4	30.4.2015
D8.3	First online surveys	WP8	FKI	website	Public	5	31.5.2015
D2.3	Knowledge framework, initial version	WP2	LIUC	report	Public	6	30.6.2015
D4.1	Research space and agents	WP4	ABACUS	report	Public	6	30.6.2015
D4.2	Integration of background knowledge	WP4	ABACUS	report	Public	6	30.6.2015
D4.3	Methodological plan	WP4	ABACUS	report	Public	9	30.9.2015
D8.4	Current DiDIY support and awareness in Europe	WP8	FKI	report	Public	10	31.10.2015
D8.5	Second online surveys	WP8	FKI	website	Public	10	31.10.2015
D8.6	Policy Factsheets, first version	WP8	FKI	report	Public	12	26.12.2015
D3.1	Research model	WP3	LIUC	report	Public	13	31.1.2016
D1.5	Interim internal quality assurance	WP1	LIUC	report	Confidential	15	31.3.2016



	report ( <i>this document</i> )						
D2.4	Knowledge framework, revised version	WP2	LIUC	report	Public	15	31.3.2016
D8.7	Interim dissemination and communication report	WP8	FKI	report	Public	15	31.3.2016
D8.8	Full courseware of the online courses	WP8	FKI	website	Public	15	31.3.2016

### D1.2 Deliverables submitted in M16

*This table lists the deliverables due in the first reporting period of the Project, and instead submitted in M16 for the reasons presented in section B2.1.10, “Deliverables and deliverable submission process”.*

ID	Title	WP	Lead beneficiary	Type	Dissemination level	Due month	Submission date
D1.4	Interim financial and technical report ( <i>this document</i> )	WP1	LIUC	report	Confidential	15	30.4.2016
D1.9	First ethical report	WP1	LIUC	report	Public	15	30.4.2016
D9.1	POPD - Requirements No. 06	WP9	LIUC	report	Confidential	...	30.4.2016
D9.2	POPD - Requirements No. 08	WP9	LIUC	report	Confidential	...	30.4.2016
D9.3	OEI - Requirements No. 12	WP9	LIUC	report	Confidential	...	30.4.2016
D9.4	OEI - Requirements No. 09	WP9	LIUC	report	Confidential	...	30.4.2016
D9.5	OEI - Requirements No. 10	WP9	LIUC	report	Confidential	...	30.4.2016
D9.6	OEI - Requirements No. 11	WP9	LIUC	report	Confidential	...	30.4.2016
D9.7	POPD - Requirements No. 04	WP9	LIUC	report	Confidential	...	30.4.2016
D9.8	POPD - Requirements No. 05	WP9	LIUC	report	Confidential	...	30.4.2016
D9.9	H - Requirements No. 01	WP9	LIUC	report	Confidential	...	30.4.2016
D9.10	H - Requirements No. 02	WP9	LIUC	report	Confidential	...	30.4.2016
D9.11	POPD - Requirements No. 07	WP9	LIUC	report	Confidential	...	30.4.2016
D9.12	H - Requirements No. 03	WP9	LIUC	report	Confidential	...	30.4.2016



## D2. Milestones

This table lists the milestones expected and achieved in the first reporting period of the Project.

Milestone number	Milestone title	WP number	Lead beneficiary	Due date (month)	Means of verification
MS1	Project startup	WP1, WP2, WP3, WP4, WP8	LIUC	6	This milestone will be verified in terms of Project coordination setup (WP1); knowledge framework completed (WP2); background knowledge for analysis acquired (WP3 and WP4); basic dissemination infrastructure setup (WP8)
MS2	Knowledge framework revision	WP2, WP3, WP4, WP8	LIUC	15	This milestone will be verified in terms of first revision of knowledge framework completed (WP2); analytical research setup completed (WP3 and WP4); dissemination infrastructure fully operative (WP8)

## D3. Critical Risks

This table lists the identified risks for the Project.

Risk n.	Description of risk	Proposed risk-mitigation measures	Analysis of the situation so far
R1	Problems of coordination	Roles for each partner have been clearly identified. Also, the Consortium has been assembled on the basis of its complementarity of skills and fields of actions. This element is a key factor to prevent this risk.	A systematic coordination among all partners has been maintained so far by the PC, and by the WPL for the WP-related activities. Frequent SB online meeting have been introduced to maintain an effective and efficient flow of information and a clear shared to do list of activities.
R2	Low performance of partners / commitment decreasing	The costs and benefits of the proposal have been adequately presented to Project partners and they are strongly committed to the proposed objectives. Nevertheless, commitment problems might arise and will be discussed and solved in the Consortium bodies. All work will be regularly documented and stored.	No issues related to lack of commitment of partners arose so far.
R3	Not to be able to intervene with corrective action	The Quality assurance and risk management plan will be structured to constantly monitor the progress and allow for flexibility.	A new issue emerged (R7), which has been identified and handled as specified below.
R4	Divergence on how to run the Project	The Consortium agreement will cover conflict situations. The first objective to resolve a conflict would be to reach a consensus. However, in case of prolonged divergences, the approval of a two-thirds	All decisions were made unanimously so far.



		majority of the partners will be considered conclusive, in order to avoid deadlock in the Project operational progress.	
R5	Planned budget is not adequate or balanced	The initial budget is in accordance with the planned activities. Continuous monitoring and coordination of project activities are required to avoid problems.	No issues related to budget arose so far.
R6	Delays in report delivery by some partners	All activities and costs incurred are to be regularly documented and reported to the Coordinator in order to comply with the EC rules but also to assure the Project runs on track. The Management Office will take care of identifying the cause, solving with the interested party potential delays and provide due assistance to the less experienced partners.	All deliverables and internal documents were regularly submitted so far.
R7	Object of analysis more immature than supposed	The time structure of the Project activities, as documented in the Gantt chart, has to be systematically monitored, and adapted whenever tasks require more time to be developed.	The schedule of some tasks has been modified to guarantee more time for observation and analysis.

## D4. Publications

### D4.1 Formal publications

*This table lists the publications formally acknowledging the Project and the H2020 programme.*

Type	Authors	Partner	Title	Context of publication	Peer-reviewed
Paper in conference proceedings	A. Ravarini, L. Cremona	LIUC	Digital Platforms as Knowledge Artifacts for clusters of SMEs	Conference Proceedings KITA 2015 workshop, IC3K conference Lisbon, 14 November 2015	Yes
Paper in conference proceedings	C. Bruno, G. Salvia, M. Canina	POLIMI	Digital Making as a Means to Improve Education	INTED 2016 Conference, Valencia (Spain), 7-9 March 2016	Yes
Paper in conference proceedings	G. Salvia, C. Bruno, M. Canina	POLIMI	Digitally making as an opportunity for skilling and empowerment	Cumulus 2016 Conference, School of Art & Design, Nottingham Trent University, 27 April-1 May 2016	Yes
Paper in conference proceedings	G. Salvia, C. Bruno, M. Canina	POLIMI	Skilling and learning through digital Do-It-Yourself: the role of (Co-)Design	DRS 2016 Conference, Brighton, 27-30 June 2016	Yes
Paper in conference proceedings	M. Fioretti, W. Tebbens	FKI	Digital DIY for Sustainability of Rural Areas	SURAP (Sustainability of Rural Areas in Practice) 2015 Conference, Nitra (SK), 4-5 December 2015	No



Article in science journalism magazine	Letizia Gabaglio	ABACUS	Quando l'assistenza è digitale	Le Scienze Giugno 2015, Editoriale L'Espresso, 2015 (in Italian)	No
Description of public archive of prototype simulation model	Bruce Edmonds	MMU	A Model of Making (Version 3)	CoMSES Computational Model Library, 2016	No
Public beta release of computer code	Ruth Meyer	MMU	Factbase -- a Netlogo Extension	CPM Website and Github, 2016	No

## D4.2 Other publications

*This table lists publications on DiDIY subjects that were not written as a direct consequence of the Project. Nevertheless each of them it is a publication on the topic, within the dates, by a Project partner.*

Type	Authors	Partner	Title	Context of publication	Peer-reviewed
Book	D. Gauntlett	UOW	Making Media Studies: The Creativity Turn in Media and Communications Studies	Peter Lang: New York, 2015	Yes
Chapter in book	D. Gauntlett	UOW	Making things is even more vital than you think	in: J. Baichtal (ed.), <i>Maker Pro, Maker Media: San Francisco</i> , 2015	Yes
Chapter in book	D. Gauntlett	UOW	The Internet Is Ancient, Small Steps Are Important, and Four Other Theses About Making Things in a Digital World	in: N. Zagalo, P. Branco (eds.) "Creativity in the Digital Age", Springer Series on Cultural Computing, pp 17-33, Springer-Verlag: London, 2015	Yes
Chapter in book	B. Edmonds, G. Polhill	MMU	Open Modelling for Simulators	in: O. Terán, J. Aguilar (eds.) "Societal Benefits of Freely Accessible Technologies and Knowledge Resources", IGI Publishing, 2015	Yes
Chapter in book	V. C. Müller	AC	Editorial: Risks of artificial intelligence	Vincent C. Müller (ed.), <i>Risks of artificial intelligence</i> (London: CRC Press - Chapman & Hall), 1-8, 2016	Yes



Paper in journal	G. Salvia	POLIMI	The satisfactory and (possibly) sustainable practice of transforming artefacts: the proposal of the catalyst role for design	Journal of Design Research, 14(1), 22-41, 2016	Yes
Paper in journal	V. C. Müller	AC	Gun control: A European perspective	Essays in Philosophy, 16 (2), 247-61, 2015	Yes
Master Thesis	E. Martinelli (supervisor: A. Ravarini)	LIUC	Impact of Digital Technologies on organizational roles: the birth of DiDIY-enabled managerial roles	Università C. Cattaneo LIUC, 2015	No
Master Thesis	I. Malaspina (supervisor: A. Ravarini)	LIUC	Digital transformation and DIY practices: implications on the evolution of the CIO role	Università degli Studi di Pavia, 2016	No
Master Thesis	G. Landoni (supervisor: L. Mari)	LIUC	Do it yourself turns digital: a paradigmatic shift defining a new conceptual framework	Università C. Cattaneo LIUC, 2015	No
Master Thesis	L. Colombo, M. Bellea (supervisor: L. Mari)	LIUC	Un approccio quantitativo alla definizione di un framework concettuale di descrizione del DIY nell'era digitale	Università C. Cattaneo LIUC, 2015 (in Italian)	No
Master Thesis	G. Guidi (supervisor: L. Mari)	LIUC	Strumenti tecnologici a supporto della formazione: analisi da un caso e linee guida	Università C. Cattaneo LIUC, 2016 (in Italian)	No

### ***D5. Gender of R&D participants***

*This table lists the number of active researchers in the Project, split by partner and by gender.*

number	Female	Male	<b>Total</b>
LIUC	8	14	<b>22</b>
UoW	1	1	<b>2</b>
ABACUS	5	3	<b>8</b>
MMU	1	2	<b>3</b>
FKI	1	2	<b>3</b>
AC	0	2	<b>2</b>
POLIMI	3	1	<b>4</b>
<b>Total</b>	<b>19</b>	<b>25</b>	<b>44</b>

