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INTERMEDIATE REPORT ON DISSEMINATION, COMMERCIAL EXPLOITATION AND SUSTAINABILITY

D7.1

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EXECUTIVE SUMMARY

The Work package 7, led by the startup cloudSME, is - together with all the project partners - responsible for the communication, dissemination and exploitation of the project and its outcome. The collaboration between CloudiFacturing and the European CSA I4MS-Go is in the responsibility of the coordinator (T7.6) and will be reported in separate deliverables (D7.5, D7.6, and D7.8, respectively).

This deliverable will give an overview of the objectives, tasks, CloudiFacturing's dissemination strategy and how they are executed in the past period, including the communication channels (internal and external) used, marketing material produced, its outcome and how the Open Call was disseminated. Additionally, it provides an overview of the training activities and the first commercial exploitation of the marketplace. The first forecast of the impact of CloudiFacturing and its first wave of experiments is described. Furthermore, the CloudiFacturing's sustainability and IPR (intellectual property right) management is highlighted in this deliverable.

All targeted communication goals have been successfully reached. Common indicators for this fact are the number of independent sessions and the number of users on the website www.cloudifacturing.eu. During the first year the website registered about 3.500 different users and provided more than 7000 unique sessions.

Another indicator may be the participation in the Webinar, which took place on June 28th for the First Open Call, 42 people took part from all over Europe and from all kinds of enterprises. Interesting questions were asked, and many companies showed interest in applying for the Open Call. Also, the Q&A sessions after the webinar raised significant interest.

The training activities in the first period focused on two parts, the experiment partners of the first wave and the DIHs. The experiment partners received training to better understand the use cases and the technology used. DIHs were trained to present CloudiFacturing and to gain deeper understanding of the technology and its benefits to support and clearly state out the additional value of CloudiFacturing to potential experiment partners and other stakeholders.

CloudiFacturing reached a recognisable broad range of stakeholders in the first period, all-in-all 37 proposals were submitted in the Open Call as well as that the experiments of the first wave stated a promising forecast for the next 5 years.

The sustainability is a crucial point of CloudiFacturing, to defuse this the symbiosis of the experiment and the Digital Marketplace is decisive. In other words, to have a successful and sustainable Digital Marketplace there is the need for successful experiments as well as the other way around.

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1 INTRODUCTION

This deliverable reports on the dissemination strategies, activities and results; including Dissemination Channels and Media, Commercial exploitation, Sustainability, Impact, Training Activities, Work Plan Assessment and IPR Management Plans planned and carried out during the first 12 months of the project (M1-M12).

1.1 Objectives of Work Package WP7

The main objectives of work package 7 (WP7) of the CloudiFacturing project discussed within this deliverable are the following:

- Create a business-oriented image of the project and manage the dissemination of project results towards multiple target audiences (including manufacturing end-users, Independent Software Vendors (ISVs), technology consultants, and resource providers).
- Monitor, foster and maximize business impact coming from application experiments and generated by the project.
- Establish sustainable commercial models and credible roadmaps to boost the commercialization of the holistic solution and ease the integration with additional service providers via the CloudiFacturing Digital Marketplace.
- Organize training courses for both internal and external audiences concentrating on the technical platform and the conceptual/business benefits provided by Cloud/HPC-based simulation.
- Collect community feedback from different stakeholders of the project (manufacturing end-users, ISVs, technology consultants, resource providers, etc.) regarding both technical solutions and business benefits.
- Monitor and manage IPR and research data generated by the project.

1.2 Tasks of Work Package WP7

- **T7.1 Implement dissemination activities. Task Leader: CloudSME; participants: all project partners.** This task will prepare a detailed dissemination plan at the beginning of the project and will assure that this plan is efficiently executed and revised if necessary. The task will define the project's business-oriented image and brand identity. Press releases will be issued at regular intervals, major communication channels (web, the newsletter, and social media etc.) will be set-up and operated, dissemination events will be organized and attended, and collaboration with multiplier organizations will be pursued to maximise efficiency. Specific emphasis will be put onto promoting and disseminating the Open Calls, and the technical and business impact of the project.

- **T7.2 Monitor, foster and maximize business impact. Task leader: UoW; Participants: all project partners.** This task will implement objective 7.2 by monitoring, fostering and maximizing the business impact generated both at the level of individual experiments and by the project as a whole. In cooperation with WP100, the individual impact of each experiment will be analysed and required dissemination activities to support achieving this impact will be planned and executed. The overall impact of the project mainly generated by the Digital Marketplace and the commercialisation activities of the two companies operating this marketplace (clesgo GmbH and CloudSME UG) will also be monitored and fostered.

- **T7.4 T7.4 Organise training courses. Task Leader: CloudSME and the Participants are IT4I, Innomine, STAM, Insonmina, DFKI, All other partners.** This task will implement objective 7.4 to organise internal and external training courses and events. Training events will take place at the beginning of each experiment wave targeting third parties participating in experiments with both technical and business impact related content. External focused training events will also be organised during the second half of the project to raise further awareness and train potential new customers about utilising the marketplace and its technology platform.

CloudiFacturing forms part of the initiative I4MS for which value-added collaboration between projects is coordinated by ongoing I4MS Coordination Actions (I4MS-Go) and will be detailed in the D7.6.

1.3 Deliverable D7.1 Description

- **D7.1: Intermediate dissemination, commercial exploitation, and sustainability report (month12)**
  This deliverable reports on the project website and social media profiles. The report will describe the methodology and schedule for dissemination during the first project period (channels to be used, target audiences, activities, etc.). The deliverable will describe all dissemination activities conducted so far. It will also describe IPR management plans. This deliverable will report on all the commercial exploitation, impact and sustainability activities during the first year of the project. The report will include detailed analysis of the impact planned by experiments and the project and will describe commercial exploitation and sustainability plans of experiments and the Digital Marketplace.

- **D7.5: Plan for collaboration with other I4MS projects and DIHs on the activities done and the plans for the next period (month 12)**
  D7.5 is a dedicated deliverable on the collaboration with other I4MS projects and DIHs and submitted separately.

1.4 Milestones

The Milestone (MS) number 13 of the project, named MS7.1, having as beneficiary lead cloudSME, was successfully achieved in time. The MS 13 had a due date of three months and dealt with the setup of the public project website and its accessibility for the community. The outcome of MS 13 is shown in section 3.2. Webpage.

1.5 Approach

The approach of CloudiFacturing's marketing is a composed approach out of the "economic approach", "societal approach" and the "product or commodity approach". Due to the wide range of stakeholders from scientific up to industrials there is the need to have a universal approach to increase the sphere of influence in the European economy.

The economic approach confronts the problems of supply, demand and price, which have a high importance from the economic point of view – unsupported, this approach fails to provide a clear direction. In combination with the commodity approach, dealing with the flow and movement of commodities from the original producer towards its customer, including the standardization of it; and the societal approach, means that society is enabled to meet their own consumption needs, attention is paid on ecological factors (sociological, cultural, legal…) and the opportunity to impact society's well-being.

Broken down on the innovation-power, industry 4.0 and the digitalisation of European SMEs, CloudiFacturing is tackling this as described in table 1.

Approach	**Why is it important to communicate towards the wide range of stakeholder**
Economic approach	**The Digital Market Place – Platform for Innovation & Digitalisation** Innovation faces always the issues of low resources, demand and high prices and risks harming the velocity of the digitalisation processes, thus can be solved by providing centralized resources, e.g. on a digital marketplace, providing the power to use resources on demand with low effort, low costs in a supportive environment.
Commodity approach	**Standardization of Software, Hardware, Knowledge** Standardized commodities, in this case cloud- and HPC-resources as well as needed software and flows from the producer to the potential customer are crucial to increase the usage of innovative solutions, including highly automated workflows, in the daily business. It is very important to increase the trustworthiness of those solutions in industries.
Societal approach	**Awareness of digitalisation and its benefits for EUs economy** All in all, digitalisation is seen as beneficial but only in a broad perspective – this perspective needs to be shifted towards personal benefits that come along with digitalisation and innovation. The feeling of security and satisfaction of every single stakeholder need to be embraced and supplemented by the thought that supporting the growth of the European economy with innovation and digitalisation will lead to an increased overall well-being in Europe.

TABLE 1 - MARKETING APPROACH OF CLOUDIFACTURING

2 DISSEMINATION STRATEGY

The dissemination strategy of CloudiFacturing aims the universal communication in external and internal channels to maximise the project impact – CloudiFacturing is focusing on several stakeholder groups, which are addressed through the composed strategy approach, described above in section 1.5. The aim of the dissemination activities is to promote the results of the project, as well as the project itself through potential users. Therefore, the dissemination plan of CloudiFacturing is focusing a broad range of activities to reach all these diverse stakeholder groups and communities

2.1 Dissemination Timeline

The general timeline for dissemination and communication is divided in three phases:

- **M1-M3:** Setup of branding, webpage, social channels and newsletter, creation of detailed dissemination plan.
- **M4-M8:** Communication activities and PR work towards multipliers, target groups and magazines to raise first awareness.
- **M9-M42**: Communication activities and PR work towards multipliers, target groups and magazines with success stories and best practise examples to raise interest and maximise impact. This phase will support promoting the results of a three waves of application experiments and raising attention to the open calls (starting at M10 and M22, respectively).

Major tasks within dissemination include the following:

- creation of a dissemination plan;
- brand management (design of a corporate identity, logo and templates);
- general dissemination activities including the publishing of press material and the provision of information to the target groups through all available channels;
- supporting the open calls with targeted marketing campaigns to raise awareness within manufacturing SMEs and ISVs, organization of training and business events;
- collection of community feedback.

2.2 Dissemination Plan

The goal of this dissemination plan is to make the results and deliverables of CloudiFacturing available to relevant stakeholder groups and, in addition, to a wider audience.

To ensure that the project results will be taken into consideration and embraced by the community, this dissemination plan explains how the outcomes of the project will be shared with the stakeholders, relevant institutions, organizations and individuals.

2.3 Dissemination Channels and Media

To successfully address the dissemination goals and to reach the above identified stakeholders it is required to set-up and organise the following dissemination channels:

- Website: The main tool for showing the information about the project and indispensable to have is a website which will continuously be updated regarding project results, application experiments, events, and downloads. A continuously updated website will also improve the visibility of the project, as search engine results reward “living websites” (and a wealth of relevant keywords).

- Social media: Blogging and tweeting in social networks are the best showroom for the general public and an easy way to communicate with people already interested in the project. The established Social Media Channels are listed below in section 3.4.

- Newsletter / contributions to external newsletters: CloudiFacturing setup a newsletter and will continuously contribute to newsletters of umbrella organizations (e.g. I4MS) or business associations to inform the relevant target groups about the progress of the project.

- Due to the fact that it is a joint work between Fraunhofer and I4MS, they will collaborate to a great extent in developing and promoting the CloudiFacturing project within their own channels and contacts to achieve the desired objectives.

- Press releases: Several press releases will be launched every year to disseminate the project results towards the general public and the specialised and generic media and the wider society. Press releases will be associated to project milestones such as launching open calls. Additionally, press releases will be issued for success stories of the project, e.g. results and achievements of experiments as well as of Digital Innovation Hubs (DIHs) and participating partner, to communicate the additional value of CloudiFacturing, especially focusing on wider impact.

- Market analysis: To refine the CloudiFacturing business profile towards manufacturing SMEs and mid-caps, the project will spend considerable effort on a detailed market analysis. Information will be collected via carefully designed questionnaires and the results will be thoroughly analysed. This information will support business model development and the long-term provisioning of project results on the market.

- Public dissemination material: Brochures, leaflets, posters, white papers, etc.

- Demos and visual media: Live and/or pre-recorded demonstrations will be created to show the use and applicability of CloudiFacturing outcomes and applying successfully to the Open Calls, especially to showcase the results of successful application experiments.

- Conference presentations: Presentations in specific conferences and events targeting manufacturing end users of the technology.

2.4 Dissemination Events

Our dissemination event activities can be structured in three major categories:

- **Targeted dissemination events:** Those events include internal events, like the launch event of CloudiFacturing project, as well as external events, like exhibitions and workshops. Additionally, correlating to MS 2, MS 5 and MS 7, which are dealing with the successful completion of the three waves of experiments, there are major dissemination events planned to maximise the dissemination and impact of CloudiFacturing.
- **Training events:** Training Events are targeting internal and external project partner. On the one hand there will be training events in the beginning of each experiment wave for the participating experiment partners to embrace the knowledge of the platform and technologies used, on the other hand there are advanced trainings planned for CloudiFacturings developer, those will be increasingly opened and promoted for external stakeholder groups to maximise the reach and impact of the project and its results. Supplementary to this, the participating DIHs receive Train-the-Trainer trainings, which enable them to clearly point out the benefits of participating in the CloudiFacturing project.
- **Business workshops:** Those workshops are targeting internal and external (commercial) stakeholder groups, it focuses on the commercialisation of CloudiFacturings outcome, the Digital Marketplace and provided products and services. It aims to lower the barriers of entry and to support the uptake of the further developed technology.

Besides events organised by the project, dissemination activities will also target project presence on several high-profile events, such as RSA conferences, OASIS Workshops and Conferences, IEEE Cloud Computing conferences, and manufacturing and simulation workshops and conferences.

Table 2 shows an overview of the CloudiFacturing related dissemination events.

2.5 Dissemination KPIs

The project has carefully created the following key-performance indicators (KPIs) to plan, implement, monitor and validate its dissemination activities, KPIs are given in table 3.

Communication activities are intensified during the progression of the project, with more results becoming available gradually.

Objective	Communication Channels	Actions & Milestones	KPI's	Achievements
Create a business-oriented image of the project and raise awareness of the benefits of the CloudiFacturing project within the	Corporate Identity	Logo design with templates and usage instructions	Logo, website and social media profiles created	The logo and templates were done in the first quarter, as well as the usage instructions.
	Web Page	Purchase of domains and web design		Page was developed and set.

target communities and the general public.	Social Media	LinkedIn, Facebook and Twitter material		Profiles were set and in addition, we developed a You Tube channel.
	Public Dissemination materials	To create: • brochures • posters • banners • videos, webinars • press releases	For M1-M42: • 3 Brochures • 5 Posters or roll-ups • 2 white papers • 2 project videos	M1 – M12: • 1 Brochure • 1 Leaflet • 2 roll-ups
	Press Material	Creation of first templates for press releases, writing press releases & articles	Press releases: 10 Articles in Magazines: up to 5	First Press release was made in 3 languages: German, English, Spanish. Reached 35 web magazines.
	Events	Dissemination events: Institutional (EU Headquarters...) Society in general (local political institutions, entrepreneurs...) Technical (ICT)	Self-organised: at least 4 large dissemination events, including a launch event Attended: up to 20 relevant events (conferences / workshops)	Launch event was made and 4 more were organized for the first period of the project.
To disseminate and promote project's activities among SME's / mid-caps and the general public	Online Marketing	Search engine optimization of the website, continuously displaying the success of the project and community building, use of web analytics	Continuous work, at least 1 social media post per week	Achieved (under reserve of all accounts)
	Newsletter(s)	Regular publishing of an own newsletter and contributions to external newsletters	Newsletters: once a month	Achieved
	Press campaigns	PR with media (print, radio, press, TV)	At least 10 press releases	In the first period of the project, there were 3 Press Releases done.
	Presentations	Specific conferences to be attended	At least 8 conferences (twice a year)	Achieved in the first part of the project (1st. year). We attended a total of 7 dissemination events in this first period of the project.
Train application developers and potential end users	Training events and training material	User guides and manuals	To be published on the website and continuously updated	Will be published when the first are available – due to the early stage of the project.
		Demos/Tutorials: live and/or pre-recorded demonstrations	Frequently: whenever possible/necessary to have them	We published in YouTube two videos on how to apply to the First Open Call.
		Organisations of webinars to provide a flexible and quick information tool and increasing attention by having a freemium offer	Up to 8 webinars	One Webinar for the First Open Call was made and uploaded to YouTube.

		Measure the use of the platform and marketplace with web analytics tool	At least once a week	Achieved through Google Analytics.
Collecting user feedback for knowledge exploitation	Use digital tools	Measure the reputation of the project using relevant tools, such as Klout	At least once a quarter	Klout is out of date, will be substituted by extended web analytics.
		Carrying out dedicated surveys with an online survey tool	Run three surveys during the project	First survey will be started after the first Open Call.

TABLE 2 - KPI'S OF CLOUDIFACTURING DISSEMINATION ACTIVITIES

3 DISSEMINATION ACTIVITIES AND RESULTS

This section will give a detailed overview of the dissemination activities and its results, including the creation of the corporate identity, communication channels established and their scope of influence. Dissemination activities of the Open Call are additionally listed below, including the executed activities by the DIH's and consortium partners.

3.1 Logo and Claim Creation

The logo and claim of a project can be seen like a business card, if it is not catchy and impressive it cannot get the attention of people. cloudSME created a temporary logo, in this time there were several logos presented to the whole consortium of the CloudiFacturing project, as shown below in figures 1 to 3. The logo and claim creation process took approximately 2 months, the final version was published on the 11th December 2017.

3.1.1 CI – Corporate Identity of CloudiFacturing

The Corporate Identity was developed out of the two core technologies of CloudiFacturing, given by Cloudflow and cloudSME, and its project leader Fraunhofer IGD. The colours are blue (CloudFlow), orange (cloudSME) and green (Fraunhofer IGD), the lettering is grey to create a harmonized logo without hard contrasts. The colour codes are given in table 4.

New Helvetica, or "Neue Helvetica", is the opposite of all the kitschy, fancy, decorative typography of the past decades. The lines of it broadcast gracefulness and sensitivity, it is more refined than Arial – in comparison to Arial, primarily vertical or horizontal strokes. The negative space around the font is more important than the letters itself – New Helvetica remains legible in motions and the letters remain on the same height.

CFG-colours	R	G	B		C	M	Y	K
Blue	84	132	196		71	42	0	0
Green	154	199	104		47	0	73	0
Orange	233	83	34		0	80	90	0
Lettering	100	100	98		0	0	0	70

TABLE 3 - COLOUR CODE OF CLOUDIFACTUIRNG'S LOGO

3.1.2 Logo and Claim creation process

The logo and claim creation process can be separated into two parts, version 1 "temporary logo" (Figure 4) and version 2 "final logo" (Figure 5).

The temporary logo was a letter-logo, including the colours of CloudFlow and cloudSME, without graphics and the claim "The next dimension of cloudification". The claim stated the ongoing process of developing a more digital and sustainable economy in Europe using "cloudification". "Cloudification" means to extend and improve services and products using benefits of cloud solutions, e.g. fast resources, available on demand, flexibility, and much more.

This logo was used for the first leaflets and the first version of the webpage.

FIGURE 1 - LOGO CLOUDIFACTURING DRAFT 1

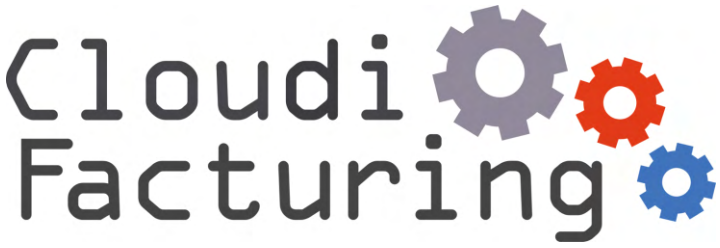

FIGURE 2 - LOGO CLOUDIFACTURING DRAFT 2

FIGURE 3 - LOGO CLOUDIFACTURING DRAFT 3

FIGURE 4 - TEMPORARY LOGO

The final logo was created with the intention to include a unique characteristic to support the recognition value of the logo – to meet these criteria there were three gears added, two small and one larger. The large gear is green coloured, the two small ones are coloured in blue and orange – they represent the two core technologies of Cloudflow, blue gear, and cloudSME, orange gear, that are goaded by the green gear, representing the green colour of the project leader Fraunhofer IGD.

FIGURE 5 - FINAL LOGO OF CLOUDIFACTURING

The claim changed from "The next dimension of cloudification" to "**Cloudification of Production Engineering for Predictive Digital Manufacturing**" – it still states the focus "cloudification", additionally it encourages the deeper understanding for stakeholder that are not familiar with the specific cloud term.

3.2 Webpage

The main tool for showing key information about the project and indispensable to have is a website which will continuously be updated regarding project results, application experiments, events, and downloads. This website responsive and is developed based on the news tendencies regarding accessibility.

A continuously updated website will also improve the visibility of the project, as search engine results reward "living websites" (and a wealth of relevant keywords).

FIGURE 6 - WEBSITE (WWW.CLOUDIFACTURING.EU)

3.2.1 Structure of the webpage

The structure of the webpage was designed to offer all relevant information for the stakeholders interested in the project's activities. Although the content will be constantly updated, and the structure will evolve, the following list shows the main pages of the website:

- Home page including:
  - Social Media links and contact information
  - Project Overview and Mission
  - Project News
  - Project Description
  - Project Partners
  - Project Experiments
  - Project Open Calls
  - Project Events
  - Project Newsletter
  - Legal Information

- Project News
  - Upcoming Events
  - Past Events
  - Important information about the Project

- Project
  - Description of the project and core partners involved

- Project Partner
  - Partners involved in the Project

- Experiments
  - Experiments Overview
  - Description of Experiment 1
  - Description of Experiment 2
  - Description of Experiment 3
  - Description of Experiment 4
  - Description of Experiment 5
  - Description of Experiment 6
  - Description of Experiment 7

- Open Calls
  - Open Call 2018
  - General Information about the Open Calls
  - Proposal Submission
  - Evaluation
  - Webinar Videos
  - FAQ

- Events
  - Upcoming Events
  - Past Events

- Newsletter
  - General information about the Newsletter
  - Subscription link
  - Data Protection information

- Legal
  - Contact Information
  - Publishing and Printing information

3.2.2 Website analysis

IMPORTANT: All mentioned data in this analysis refers to the period between 01.01.2018 to 17.08.2018.

Analysis of the users:

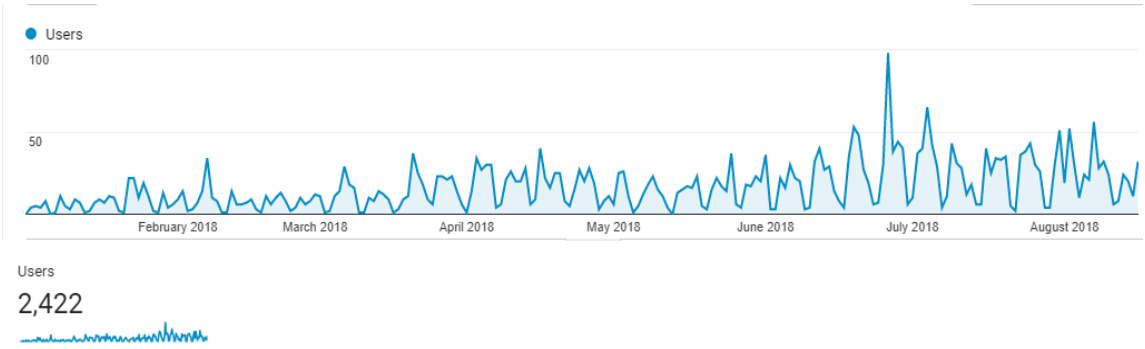

FIGURE 7 - NUMBER OF GENERATED USERS IN 2018

In total, 2422 users were generated in 2018 (Figure 7).

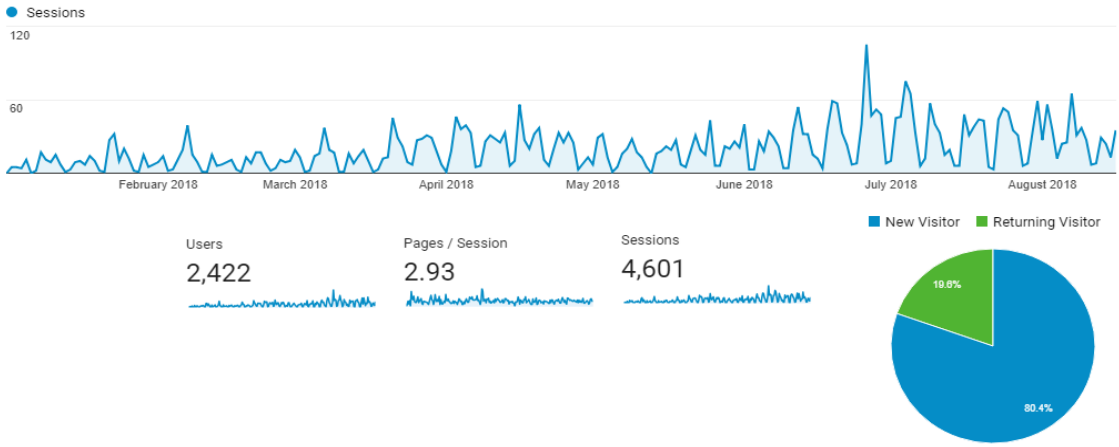

FIGURE 8 – NUMBER OF SESSIONS AND PERCENTAGE OF NEW AND OLD USERS IN 2018

The 2422 users made a total of 4601 session. These accesses consist of 80,4% new users and 19,6% recurring users (Figure 8).

	Country	Sessions	Pages / Session	Users	Avg. Session Duration
		4,601 % of Total: 100.00% (4,601)	2.93 Avg for View: 2.93 (0.00%)	2,422 % of Total: 100.00% (2,422)	00:03:20 Avg for View: 00:03:20 (0.00%)
1.	Germany	949 (20.63%)	3.45	366 (14.80%)	00:04:35
2.	Spain	860 (18.69%)	3.37	404 (16.34%)	00:03:55
3.	Italy	507 (11.02%)	3.04	227 (9.18%)	00:03:29
4.	France	356 (7.74%)	1.85	307 (12.41%)	00:01:46
5.	Hungary	241 (5.24%)	2.73	109 (4.41%)	00:02:45
6.	Greece	195 (4.24%)	3.08	98 (3.96%)	00:04:02
7.	United Kingdom	182 (3.96%)	3.27	104 (4.21%)	00:04:27
8.	Portugal	127 (2.76%)	2.87	46 (1.86%)	00:02:29
9.	United States	117 (2.54%)	1.33	106 (4.29%)	00:00:30
10.	Belgium	85 (1.85%)	3.09	60 (2.43%)	00:03:20

FIGURE 9 - ORIGIN OF THE SESSIONS

Most sessions were started from Germany (949 sessions) followed by Spain (860 sessions) & Italy (507 sessions) (Figure 9).

From a total of 13471 pageviews, visitors were most interested in the Open Calls (1584 pageviews) and the list of ongoing experiments (1274 pageviews) (Figure 10). The application-system generated about 897 pageviews. The video-tutorials generated 105 pageviews in total.

	Page	Pageviews	Pageviews
		13,471 % of Total: 100.00% (13,471)	13,471 % of Total: 100.00% (13,471)
1.	/	3,762	27.93%
2.	/open-calls/	1,584	11.76%
3.	/our-first-experiments/	1,274	9.46%
4.	/open-call-application-system/	897	6.66%
5.	/project/	758	5.63%
6.	/project-partner/	724	5.37%
7.	/news2/	392	2.91%
8.	/events/	308	2.29%
9.	/exp-1-optimizing-design-and-production-of-electric-drives/	273	2.03%
10.	/exp-3-improving-quality-control-and-maintenance-at-manufacturing-smes-using-big-data-analytics/	239	1.77%

Show rows: 10 Go to: 1 1 - 10 of 256

This report was generated on 8/17/18 at 2:50:18 PM - Refresh Report

FIGURE 10 - DISTRIBUTION OF PAGEVIEWS

Most users visited the site via a direct call, followed by a Google search result and links via the website of European Commission and I4MS (Figure 11).

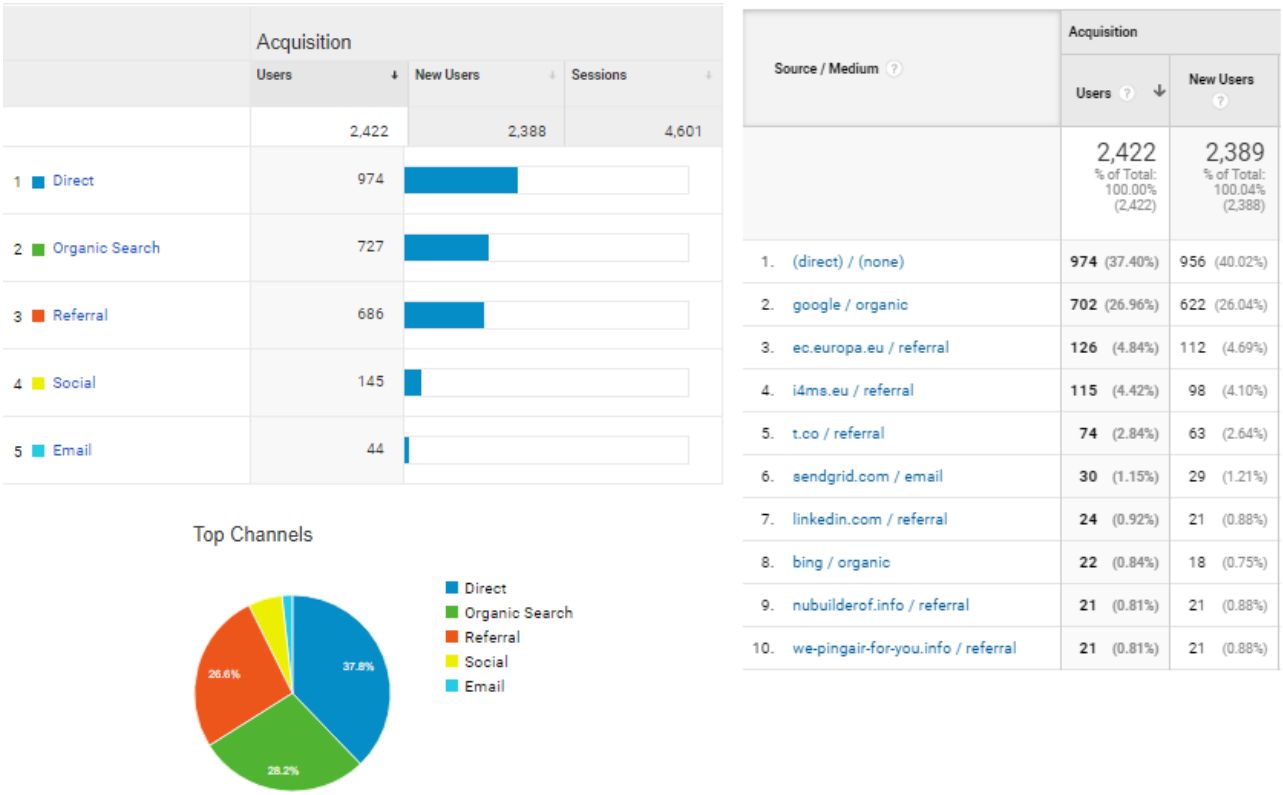

FIGURE 11 - DISTRIBUTION OF THE PAGE ACCESS ORIGINS

3.3 Newsletter

The newsletter is used to spread news and information regarding the CloudiFacturing project in the form of a bulletin issued on demand to the members of single persons, companies and other organisations. Nowadays, there are plenty of newsletters you can subscribe to and people do not see any benefit in them; to overcome this barrier and to provide more benefits, like high variety of information, and to reach the maximum audience, the "Cloud Computing Newsletter" by cloudSME is used – it contains next to CloudiFacturing also news and information about the H2020 project "Cloud Orchestration at the level of Application", called "COLA", and general information about Cloud Computing, and other initiatives e.g. I4MS and cloudSME. The e-mail marketing tool for the newsletter is called CleverReach is GDPR compliant, the company is located in Rastede, Germany.

The given benchmark for newsletter, across all industries, for UK SME email marketing campaigns were: Open rate: 24.79% (2016: 24.88%); Click-through rate: 4.19% (3.42%). [2]

[2] Source: www.smartinsights.com

3.3.1 CloudComputing Newsletter #1

The first newsletter was sent out to 519 recipients, including 16 bounces, the opening rate was 27,24% (137 unique opens / 272 total opens) and the click rate was 10,22% (14 unique clicks / 51 total clicks); CloudiFacturing links generated 61,63% click amount (15 clicks) in total.

Weblinks	Clicks
https://www.cloudifacturing.eu/newsletter/	10
http://www.cloudifacturing.eu	3
http://www.cloudsme-apps.com/ruhrhub-experience-day-2018/	2

TABLE 4 - CLOUDCOMPUTING NEWSLETTER #1

3.3.2 CloudComputing Newsletter #2

The second newsletter was sent out to 564 recipients, including 19 bounces, the opening rate was 29,17% (159 unique opens / 460 total opens) and the click rate was 11,32% (18 unique clicks / 24 total clicks); CloudiFacturing link generated 40% click amount (8 clicks) in total.

Weblinks	Clicks
https://www.cloudifacturing.eu/open-calls/	8

TABLE 5 - CLOUDCOMPUTING NEWSLETTER #2

3.3.3 CloudComputing Newsletter #3

The third newsletter was sent out to 543 recipients, including 6 bounces, the opening rate was 23,09% (124 unique opens / 228 total opens) and the click rate was 8,87% (11 unique clicks / 14 total clicks); CloudiFacturing link generated 92,86% click amount (13 clicks) in total.

Weblinks	Clicks
https://medium.com/@i4ms_eu/cloudifacturing-open-call-all-what-you-need-to-know-1529977ee986	7
https://www.cloudifacturing.eu/open-calls/	3
https://www.eventbrite.es/e/ask-dr-tamas-kiss-all-your-doubts-about-cloudifacturing-open-call-...	3

TABLE 6 - CLOUDCOMPUTING NEWSLETTER #3

In comparison to the given benchmark of 4.19%, as mentioned above, the click rate for the newsletter is above the benchmark with percentages of 10,22%; 11,32% & 8,87%.

Newsletter are attached in Appendix 1 to 6.

3.4 Social Media

Social Media is the collective term for online communication channels focusing on communities, it enables collaboration, interaction, content sharing and online marketing. The collective term includes websites and applications focusing on forums, blogs, social networking, social bookmarking, social curation, wikis and much more.

The Social Media channels used for CloudiFacturing are Twitter, Facebook, YouTube and LinkedIn – the following sections 3.4.1 to 3.4.4 provide an overview of the channels, their activities and analysis of it.

3.4.1 Twitter

IMPORTANT: All mentioned data of the Twitter analysis refers to the period between October 2017 to 06th August 2018.

Twitter is a social networking website, it enables user to publish "Tweets" (short messages) with a maximum length of 140 characters. The Tweets are visible for other Twitter user.

FIGURE 12 - TWITTER PROFILE OF CLOUDIFACTURING

General information of the Twitter profile:

Follower: 85 / Tweets in total (incl. retweets): 40 Tweets

From October 2017 until August 2018 there were **28 tweets and 12 retweets** made by the CloudiFacturing Twitter profile, in average the KPI of 4 tweets a month is achieved. It needs to be mentioned that the KPI of 1 tweet a week is a good point of reference but to spread valuable information with the right hashtags is more crucial than the ongoing communication of low-value information.

Month	Tweets (excl. retweets)	Tweet Impressions	Profile visits	New Follower	Mentions
October 2017	2	533	34	3	3
November 2017	0	202	34	3	3
December 2017	0	152	18	4	0
January 2018	3	6.342	71	10	4
February 2018	0	1.364	20	4	0
March 2018	1	1.616	24	6	4
April 2018	8	13.300	177	15	26
May 2018	2	6.869	106	7	8
June 2018	7	53.700	162	13	40
July 2018	4	18.000	98	14	22
6t August 2018	1	3.617	6	1	1

TABLE 7 - CLOUDIFACTURING'S OVERALL PERFORMANCE (TWITTER)

Tweet impression: A potential impression means a tweet has been delivered to a Twitter account's timeline.

FIGURE 13 - CLOUDIFACTURING'S TWEETS EARNED 15.0K IMPRESSIONS (LAST 28 DAYS 07/18 – 08/18)

Interest of the reached audience

The interest of the reached audience provides insights of the target group – the tweets of CloudiFacturing get the most attention from users with interest in technology, science, politics, education and business. The topics of interest clearly state that decision maker and educated persons have a high interest in CloudiFacturing's development and services.

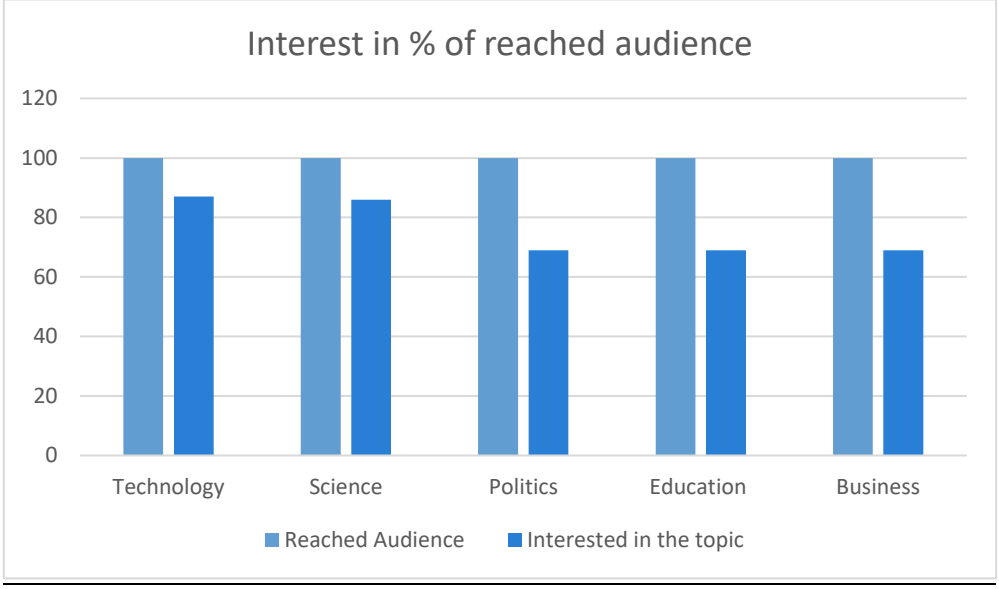

FIGURE 14 - INTEREST IN TOPICS OF CLOUDIFACTURING'S REACHED AUDIENCE

TWITTER HASHTAGS

Tweets are spread by using hashtags, the pound sign (or hash) turns any word or group of words that directly follow it into a searchable link. This allows to organize content and track discussion topics based on those keywords. The hashtags were researched on various online platforms, e.g. ritetag.com, sproutsocial.com.

The following trending hashtags were used to increase the impact of the CloudiFacturing's tweets:

#industry40	#HPC	#trend / #trends
#datascience	#CloudComputing	#security
#digitaltransformation	#Cloud	#data
#development	#platform	#bigsmalldata
#opendata	#computing	#iot / #internetofthings
#usedata	#software	#solutions

TABLE 8 - HASHTAGS USED BY CLOUDIFACTURING'S TWITTER ACCOUNT TO INCREASE THE REACHED AUDIENCE

The hashtags vary over time and are constantly updated to use trending hashtags to increase the reached audience at Twitter.

The tweets, "top mention", "top media tweet" and "top tweet", of the first period are attached in the Appendix 7 to 14.

3.4.2 Facebook

Facebook is a popular free social network website that supports people to keep connections to friends, acquaintances and others as well as interests can be followed; companies also use Facebook, but the importance of this is dubious - due to the page name, called “CloudiFacturing.eu”, there is another trigger set for the website, www.cloudifacturing.eu.

FIGURE 15 - SCREENSHOT OF THE CLOUDIFACTURING FACEBOOK PAGE

IMPORTANT: All mentioned data of the Facebook analysis refers to the period between January 2017 to 06th August 2018.

Insights of January 2018:

- Page Views: 5 views
- Page Likes: 8 likes
- Page Follower: 7 followers

Insights of August 2018:

- Page Views: 61 views
- Page Likes: 47 likes
- Page Follower: 46 followers

Increase in % in the last seven months:

- Page Views: + 1220 %
- Page Likes: + 587,5 %
- Page Follower: + 657,13 %

The first bar chart shows the development of CloudiFacturing’s performance. On the one hand, CloudiFacturing’s overall performance has a positive upward trend in the three categories “Page

Views", "Page Likes" and "Page Follower", on the other hand, the raised interest is, compared to Twitter, lower than expected. This issue could be traced back on the ongoing downward trend of Facebook and the users decreasing trust in it.

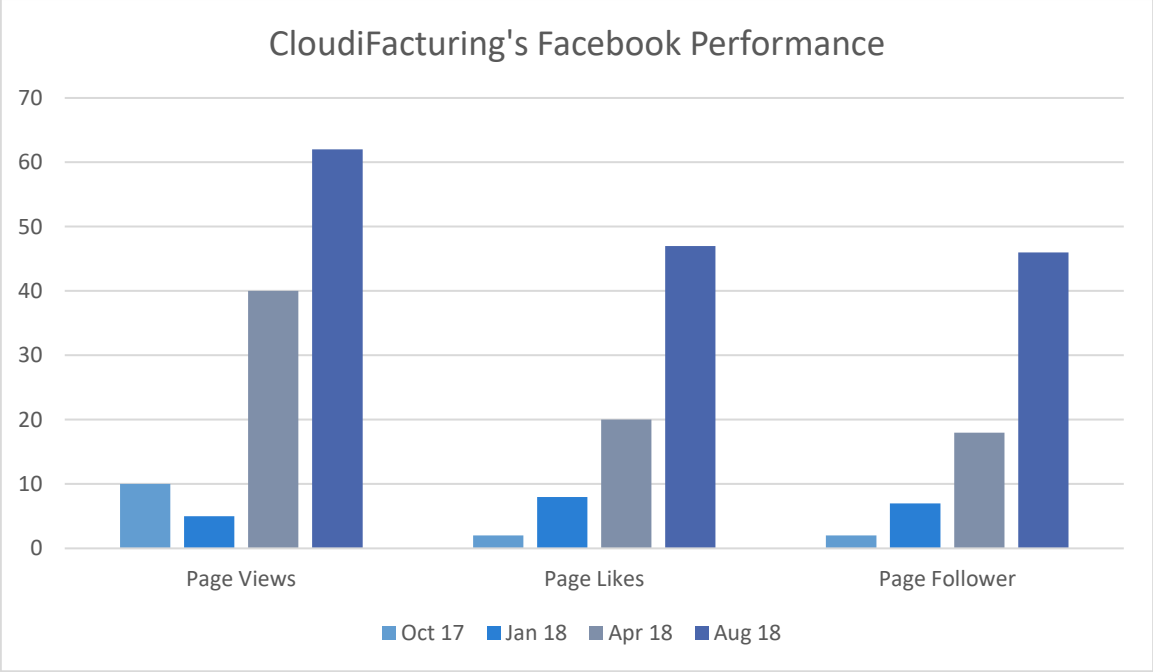

FIGURE 16 - CLOUDIFACTURINGS PERFORMANCE ON FACEBOOK

Facebook Posts

The Facebook Post Overview includes the published date and the posts topic, as well as a screenshot of the posts. Additionally, information is given about the post type, e.g. if it is a link-post, image-post, event-post; the post reach, how much timelines of users were hit and the engagement of the post, accumulating the clicks, likes and interactions of the user with the single post.

Published &Topic	Post	Post Type	Reach	Engagement
07.08.2018 Trigger Open Call	CloudiFacturing.eu August 7 at 4:33 PM · Less than 25% of #manufacturing #companies in #Europe #profit from #ICT-enabled #solutions. What about you? Apply until 30th September! https://www.cloudifacturing.eu/open-call-application-system/ How to apply? https://www.youtube.com/watch?v=5fEubxap1p8 CLOUDIFACTURING.EU Open Call 2018 - CloudiFacturing View all experimentsView all experimentsOpen Call 2018General InfoProposal SubmissionEvaluationWebinar VideosFAQ First Open Call running from 1st July till 30th	Link	258	8

04.07.2018 Q&A session registration		Link	32	3
28.06.2018 More information about Open Call		Image	260	4
27.06.2018 Webinar - funding box		Link	220	5

04.04.2018 Open Call Pre-Announcement		Image	703	30
15.11.2017 Kick Off Event		Link	50	2

TABLE 9 - POSTS OF CLOUDIFACTURING AT FACEBOOK

3.4.3 YouTube

YouTube is a video-sharing website it allows users to watch videos posted by other users and upload videos of their own.

Content published on the YouTube channel

Video Title	Published on (Date)	Views
First CloudiFacturing Open Call Webinar 2018 (1st Part)	Jul 3, 2018	73
Dr. Tamas Kiss Open Call Webinar (2nd Part)	Jul 3, 2018	32
		TOTAL VIEWS: 105

TABLE 10 - VIDEOS ON YOUTUBE

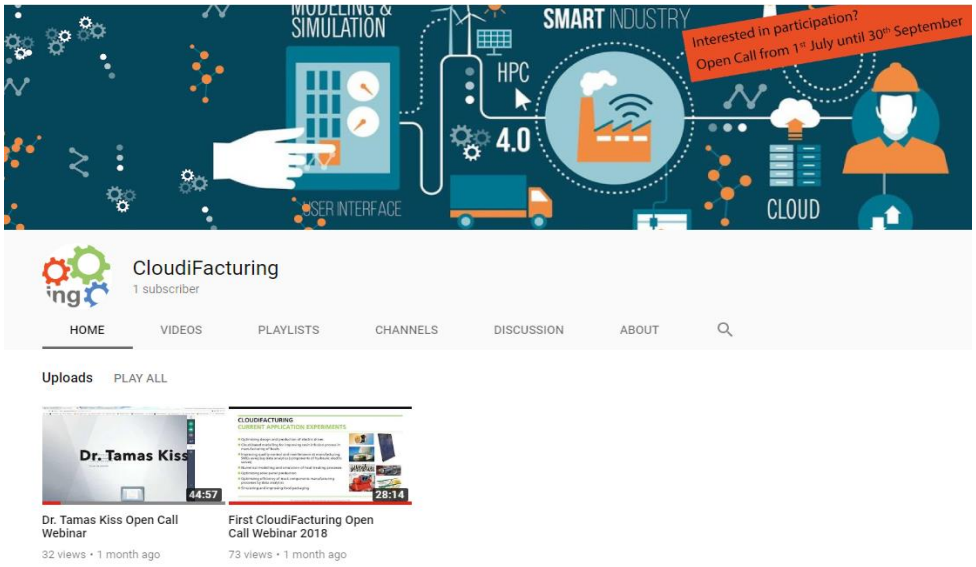

FIGURE 17 - CLOUDIFACTURINGS YOUTUBE PROFILE

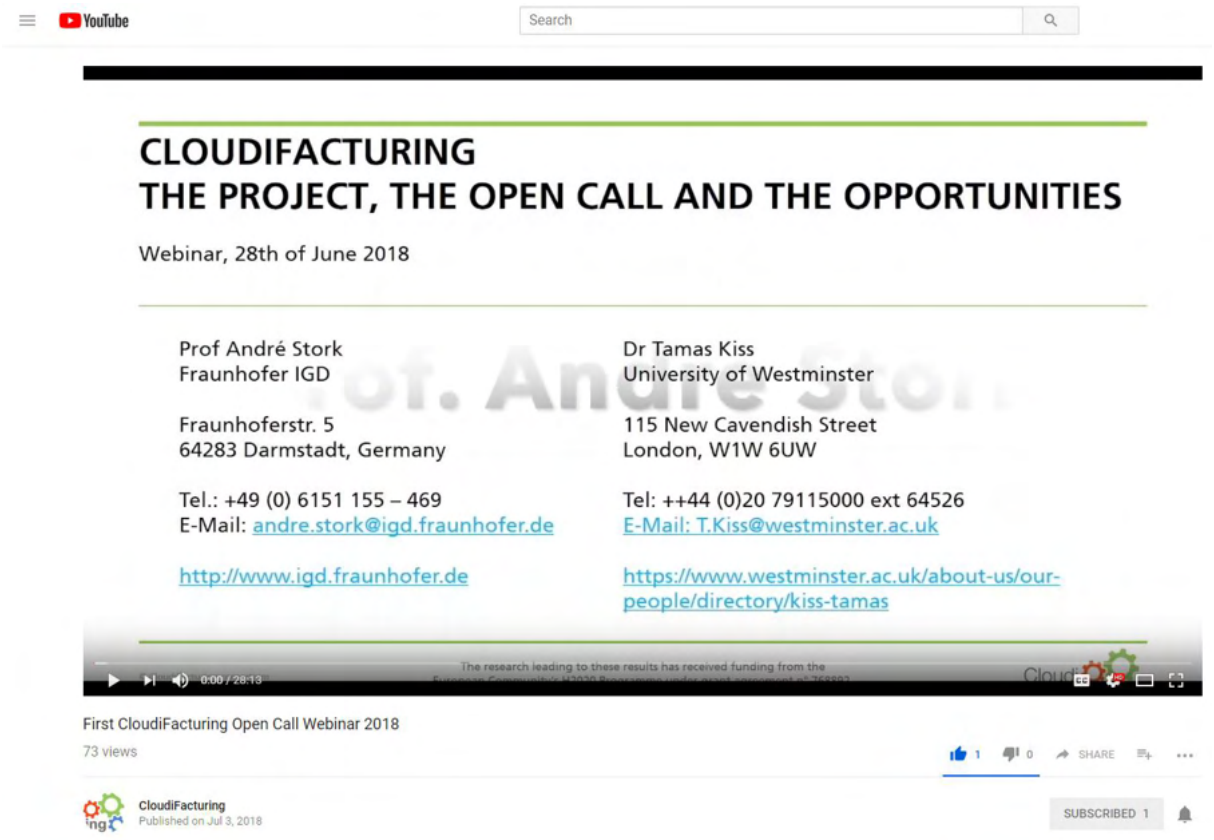

FIGURE 18 - SCREENSHOT OF THE 1ST PART OF THE OPEN CALL WEBINAR

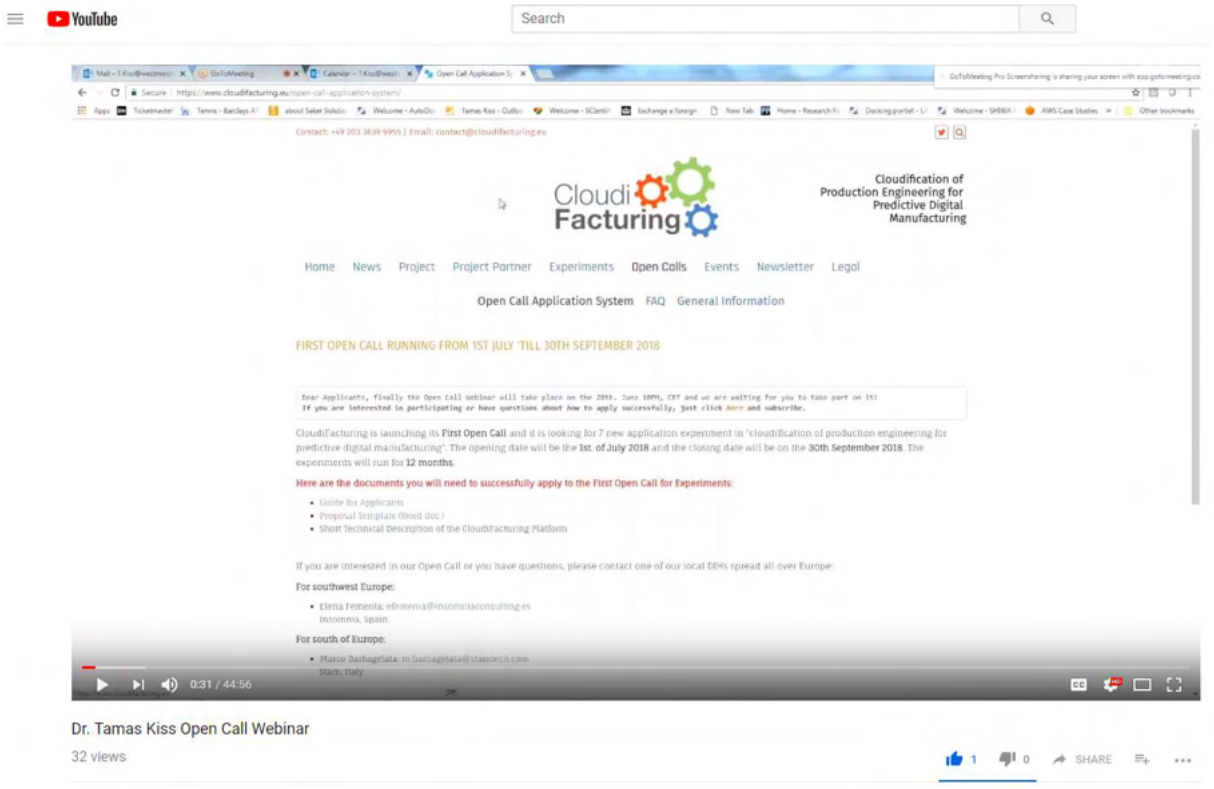

FIGURE 19 - SCREENSHOT 2ND PART OPEN CALL WEBINAR VIDEO

3.4.4 LinkedIn

LinkedIn is a social network website focused on business communities, it aims to support registered members to create and document networks of people they know and trust professionally.

CloudiFacturing is present with a “LinkedIn Group” to support the community establishment and to provide a platform for stakeholder and members of the project for direct exchange. Due to the group name, called “CloudiFacturing.eu”, there is another trigger set for the website, cloudifacturing.eu.

LinkedIn is also used by CloudiFacturing to publish news of the project – these are spread individually by members of the project and posted in groups dealing with ICT, manufacturing and engineering.

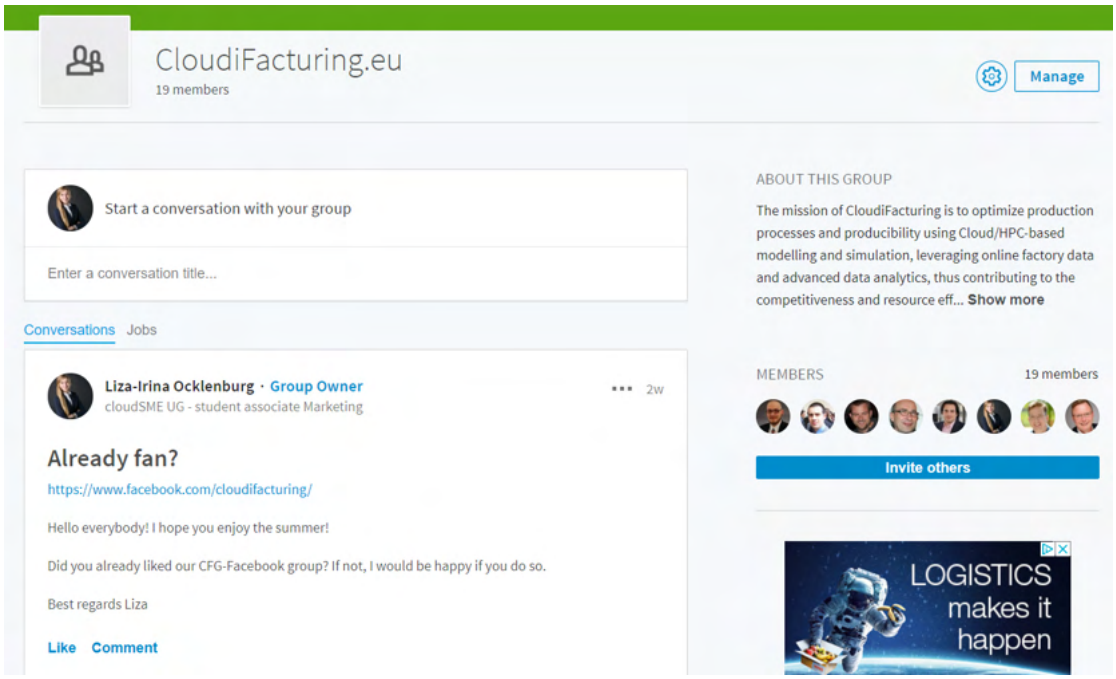

FIGURE 20 - SCREENSHOT OF THE CLOUDIFACTUING GROUP ON LINKEDIN

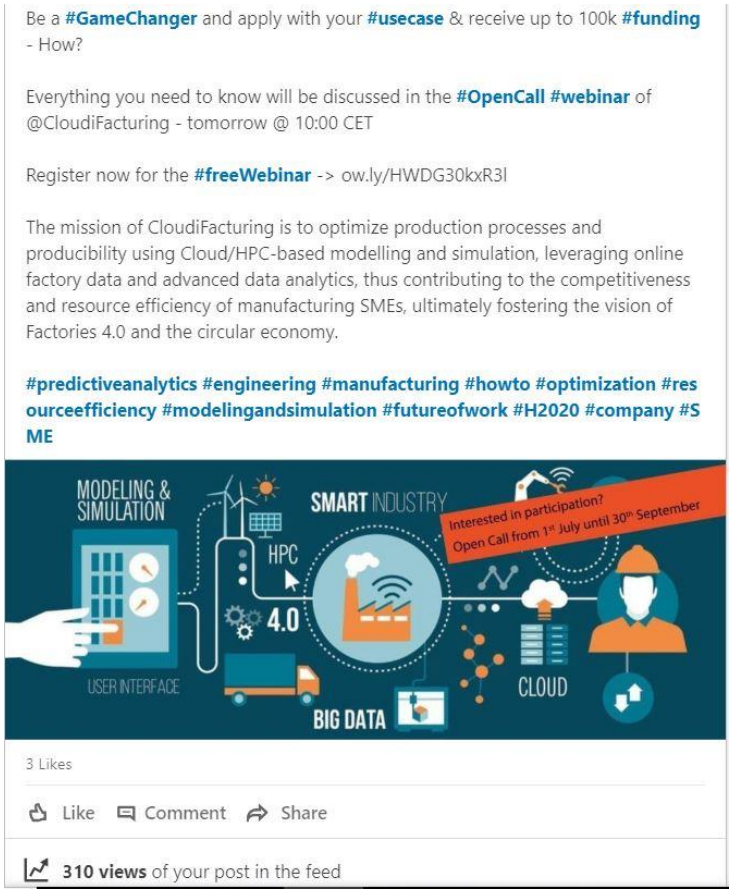

FIGURE 21 - POST ON LINKEDIN

3.5 Press Releases

CloudiFacturing has published several press releases within the first 12 months, targeting both National and European audiences and stakeholders.

Please, for further images see Appendix 15.

CloudiFacturing – Hochtechnologie aus der Cloud

share share share tweet share print

Darmstadt. Die Zielsetzung des EU-Projekts CloudiFacturing ist, Produktionsprozesse über einen digitalen Marktplatz zu optimieren. Das Projekt richtet sich an kleine und mittelständische Unternehmen (KMUs). Diesen wird hochmoderne und komplexe Modellierungs- und Simulationssoftware über die »Cloud« zur Verfügung gestellt.

»Angesichts der Tatsache, dass weniger als 25 Prozent der KMUs in Europa moderne Informations- und Kommunikationstechnologie einsetzen, hat das aktuelle Projekt ein klares politisches Ziel. ›Cloudification Dienste‹ werden zum Wegbereiter für die Digitalisierung der Fertigungsindustrie«, so Prof. Dr.-Ing. André

FIGURE 22 - GERMAN PRESSRELEASE OF CLOUDIFACTURING

SOURCE: HTTPS://WWW.WIRTSCHAFT-REGIONAL.NET/UNTERNEHMEN-MAERKTE/CLOUDIFACTURING-HOCHTECHNOLOGIE-AUS-DER-CLOUD/

DIH's are also using their own organisation's communication channels (incl. websites, blogs, social media) to promote project outcomes throughout the duration of the project. This is especially important for commercial partners as the project results can be exposed to existing and even potential customers, greatly increasing the opportunity for commercial exploitation past the end of the project.

Please, for further images see Appendix 16 to 18.

CloudiFacturing

Cloudification of Production Engineering for Predictive Digital Manufacturing

The mission of the project is to contribute to efficient use of high performance computing by European small and medium-sized production companies and thus increase their competitiveness. This projects aims at optimization of production processes and productivity of companies using HPC-based modelling and simulation, as well as cloud services.

www.cloudifacturing.eu

FIGURE 23 - NEWS POST ON IT4I (SOURCE: IT4I, INNOVATIONS NATIONAL SUPERCOMPUTING CENTER)

3.6 Media Coverage

CloudiFacturing has received media coverage in newspapers and (online) magazines in Germany, Spain, Italy, France and the UK – also with European visibility.

Please, for further images, see Appendix 19 to 21.

Proyecto: CLOUDIFACTURING[061]

Convocatoria: Innovación en pymes Manufactureras. **CASCADE FUNDING**
Descripción: Cloudificación de la ingeniería de producción para la fabricación digital predictiva.
Beneficiarios españoles:
- Insomnia Consulting S.L.U (Valencia).
- NABLADOT S.L. (Zaragoza).
- ENDEF S.L. (Zaragoza).

Presupuesto total (UE): 8,7 M€.

En España, la aceleradora valenciana, Insomnia, a través del proyecto cloudifacturing, distribuirá ayudas directas a empresas para su digitalización en Industria 4.0. Las empresas pueden optar a las ayudas a través del Digital Innovation Hub coordinado por Insomnia.

FIGURE 24 - PRESSRELEASE BY INSOMNIA

SOURCE:HTTPS://WWW.BANKIA.COM/RECURSOS/DOC/CORPORATIVO/20120924/COMUNICACION/LIBRO-VERDE-DE-LA-FINANCIACION.PDF

3.7 CloudiFacturing Brochures and Advertising Material

CloudiFacturing has produced a range of printed materials that have been used to present the project at events, trade fairs, conferences and other occasions.

Among the dissemination materials produced are brochures and flyers, posters, as well as roll-up banners.

The CloudiFacturing flyer featured the main project partners, intended target groups as well as service benefits for stakeholders.

FIGURE 25 - LEAFLET OF CLOUDIFACTURING

For further images, please see Appendix 22 and 23.

3.8 First Open Call Dissemination

To disseminate the First Open Call for experiments (2nd wave), a Press Release was written exclusively for this matter. A Press Kit with all the general information regarding the Open Call, as well as logos and information about the Open Call process was also made and distributed to major computing and cloud-computing media all over Europe.

A general Timeline was created to organise the advertising and public relations process:

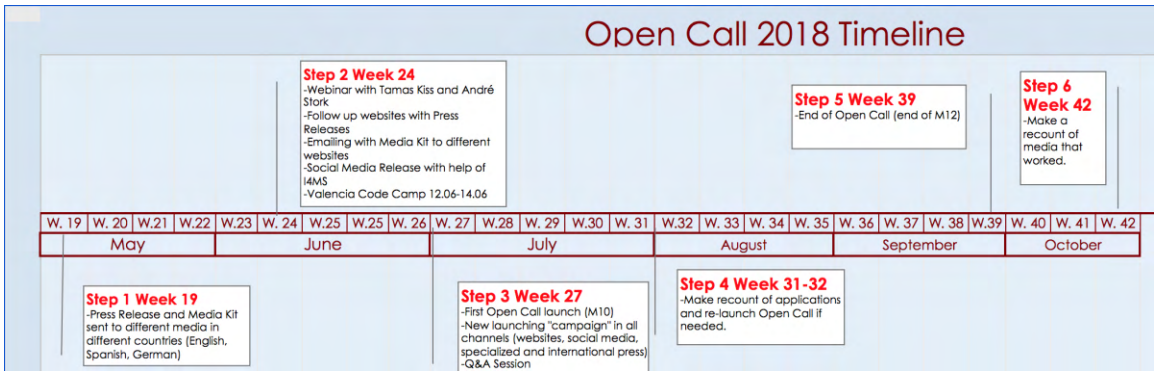

FIGURE 26 - TIMELINE OF OPEN CALL DISSEMINATION

With the help of I4MS, three events were organised: one Webinar and two Q&A sessions. The Webinar was presented by Prof. Dr. Ing. Andre Stork and Dr. Tamas Kiss and the two Q&A sessions were presented by Dr. Tamas Kiss. These three events played a very distinctive role in the Open Call dissemination because they were done few weeks before the kick off, helping the target to:

- Listen to academics who have experience in projects like these
- Founders and researchers of the project be able either to listen to questions people could have and to answer these questions "live"
- In the webinar, get to know face to face to Prof. Dr. Ing. André Stork and Dr. Tamas Kiss

The response for the three events was very satisfactory:

- Webinar attendees: 42 at the beginning and it reached later to 56 persons
- First Q&A Session: 26 participants
- Second Q&A Session: 33 participants

The webinar was done through an application called GoToMeeting and it was recorded and later uploaded in the CloudiFacturing website, as well as in the CloudiFacturing YouTube account so people interested could be able to consult it and take a look at the presentation in case they missed it. The link for the Webinar is here https://www.cloudifacturing.eu/video-tutorials/. Is divided in two parts: the first one a board a general overview for successfully applying to the Open Call presented by Prof. Dr. Andre Stork and the second part is about the proposal documents, headed by Dr. Tamas Kiss.

Also, the Q&A sessions were done through the community room chat from I4MS webpage and most of the questions, which were rather interesting were uploaded in the CloudiFacturing website, in the Open Call section. Here the link to them: https://www.cloudifacturing.eu/faq/

For further images, please see Appendix 25 to 41.

For promoting the Open Call in different websites, the press release was distributed to different web pages, which are of the same branch of our interest and coincide to the profile of the project.

Additionally, the Open Call was distributed on social media channels that are mentioned above in section “3.3 Social Media” – it enabled the Open Call to be forwarded by followers and stakeholder to their audiences.

On the other hand, our DIH partners; Innomine, Insomnia, STAM, DFKI and IT4Innovation have done different dissemination actions which have promoted the project´s diffusion.

By using different ways to promote the CFG project, along with social media and events, it is mentioned in their official webpages the highlights and explanations about their role in the project.

Also, they have reached potential partners and interested parties by contacting them personally via phone or e-mail.

In the following table we show the role of each of the DIH´s and their achievements in the public relations and advertising area.

DIH	Dissemination Actions	Description / References
Innomine (HU)	CFG published on website (ENG&HU)	http://innomine.com/projects/cloudifacturing
	Blogpost published	http://innomine.com/blog/cloudifacturing-open-call-2018-for-manufacturing-smes
	communication campaign (July)	own posts and posts in different Industry40 and entrepreneurial groups social media twitter Facebook LinkedIn event at ICT association of Hungary, reached approx. 30 multipliers from the region etc.
	communication campaign (August) (due to low response, run again at end of August)	direct outreach included players like Industry40 platforms in the region (for example Czech Rep, Hungary) Digital Innovation Hubs from the PWC/Oxentia initiative clusters, associations of manufacturers etc. reached out to approx. 50 potential applicants
	1st period of project (until Sep2018)	regularly retweeted CFG central accounts and had approx. 2 posts/week
	Calendar number 37	presentation at the Industry40 platform in Hungary reached approx. 30 participants and all members will be alerted by mail, approx. 100 key members
	Conclusion slow progress in July/August (due to holiday season) now plenty of interested stakeholders (not all have been included into our table) they started to accelerate during September 2018	
Insomnia (ES)	Printing of CFG and I4MS leaflet	distribution among Spanish SMEs
	Printing of CFG project roll-out in Spanish	identification of the CFG physical corner at Insomnia's headquarters

	CFG virtual corner at Insomnia's website	website informing about the project, the open call and the selection of independent experts http://www.innsomnia.es/insomnia-digital-innovation-hub
	Presentation of the Open Call during the events	local and regional level
	Dissemination event for the launch of the Open Call (Valencia - June 13th, 2018)	participation of 20 Spanish SMEs and all project DIHs and core Partners driven by Fraunhofer and Insomnia
	Promotion of the open call Webinar June 28th, 2018	Reached potential interested SMEs
	Promotion of the call through different channels	national level National Contact Point (CDTI ICT Division) EU financing platforms (www.tufinanziacion.com; +10,000 registered users) mailing to own databases of Business Associations, Chambers of Commerce all over Spain dissemination among EEN Network members in Spain.
	In-person meetings	with interested SMEs on the call to analyse the potential of their ideas
	PR	Publication of 2 Press notes in digital media
	Project and open call dissemination	social networks (twitter, Facebook, etc.)
	Organisation of Regionals event in Valladolid, region of Castilla León	2 events
	Hannover Messe April 23th -27th, 2018	Participation in cooperation with other DIHs and under the coordination of Fraunhofer and the European Commission
STAM	B2B presentation of the open call	
	Hannover Messe April 23th -27th, 2018	Attendance with dedicated stand presentation of CFG open call at I4MS workshop
	Open Call dissemination	email call

		bilateral meetings within our network of SMEs and RTOs
	pitching CFG open call	H2020 project NanoLEAP workshop Forum Tematico Trasformazione Digitale
	dissemination of the open call	to SIIT members (Distretto Tecnologico Ligure sui Sistemi Intelligenti Integrati) and through its channels
	release and publication of interview about STAM and the CFG open call	I4MS website social media
	Support of stakeholder via teleconferences and emails	questions regarding the open call, proposal preparation and experiment idea
DFKI	Publishing information of Open Call via	DFKI's PR department IDW Social Media (Twitter, Facebook) SmartFactory-KL newsletter Newsletter of Mittelstand 4.0 Kompetenzzentrum Kaiserslautern
	Personal contact	contacting potentially interested parties via phone and/or e-mail
	Support	guiding (potential) applicants via phone & e-mail matching partners & helping with proposal process
IT4Innovations	Social media	Twitter re-tweets https://twitter.com/IT4Innovations/status/981856760842645504
	Newsletter Q4/2017 January 5th, 2018	article ESPRESO FEM Heat Transfer Module) on page 19 859 e-mail addresses http://www.it4i.cz/wp-content/uploads/2018/01/Newsletter-Q4-2017-CZ.pdf http://www.it4i.cz/wp-content/uploads/2018/01/Newsletter-Q4-2017-EN.pdf

	Website announcement	**CZ** http://www.it4i.cz/2018/04/vyhlaseni-1-verejne-vyzvy-k-zapojeni-do-projektu-cloudifacturing/ **EN** http://www.it4i.cz/2018/04/announcement-of-1st-open-call-for-cloudifacturing/?lang=en
	Website (cloudifacturing.eu) announcement Re-published 4. 9. 2018	Twitter https://twitter.com/IT4Innovations/status/1036962089468866561 LinkedIn https://www.linkedin.com/feed/update/urn:li:activity:6442735522367574017
	Published by Moravian-Silesian Innovation Center https://www.ms-ic.cz/en/	https://www.ms-ic.cz/vyhlaseni-1-verejne-vyzvy-k-zapojeni-do-projektu-cloudifacturing/
	Promotion	Promoted to SMEs at SVSFEM ANSYS Users' Group Meeting and Conference 2018 among IT4Innovations network of SMEs among IT4Innovations network of InnoHPC project

TABLE 11 - DIH'S DISSEMINATION ACTIVITIES

3.9 Dissemination Activities executed by the Consortium Partners

The Consortium Partners have done their own dissemination activities by having presence in Conferences, Fair Trades and workshops. Either for promoting the project and talk about it or to disseminate the investigations revolving around it. Indeed, the motivation is to reach the key target: SME end users.

In the following table, we show the events on which the partners have taken part in and will take part in.

Event-Name	Date	Place, Country	Additional Information	Audience	Partner involved
2017					
Workshop: Industrial Digitalization - Talks: Industrial Computing; Agile Engineering; Industrie 4.0 / Factories of the Future"	20th – 22nd September	Medellín, Colombia	NA	20	Clesgo Sebastian Pena Serna (speaker)
Cyber-physical Systems in Engineering: Talk: Boosting Engineering and Production Processes with ICT-enabled Solutions	21st - 22nd September	Medellín, Colombia	NA	450	clesgo
Indigo Industry 4.0 Day	10th October	Budapest, Hungary	https://indigonap.hu/	150	Sztaki (Robert Lovas, speaker)
CloudiFacturing Kick Off Event	18th – 20th October	Darmstadt, Germany	www.cloudifacturing.eu	50	All partners
Digital Immersion Program "Artificial Intelligence, challenges and limits"	25th October	Valencia, Spain	Event organized by Insomnia as DIH https://feiraenerxiagalicia.com/es/	150 companies	Innsomnia
Vision4Tech	8th November	Budapest, Hungary	http://vision4tech.hu/	>500 participants directly talked to 20	Innomine, Gábor Vicze, visitor
ICT Proposer's' Day	9th - 10th November	Budapest, Hungary	https://ec.europa.eu/digital-single-market/en/events/ict-proposers-day-2017	3000 participants directly talked to 50	Innomine, cloudSME
	10th November		Workshop Cascading Grants in Horizon 2020 https://ec.europa.eu/digital-single-market/events/cf/ict-proposers-day-2017/item-display.cfm?id=19984	50	Sztaki (Robert Lovas, panellist)

High-tech Summit	13th November	Rust, Germany	Talk: Cloud Computing support for future 3D printing	60	clesgo (Sebastian Pena Serna, speaker)
Digital Immersion Program "Retail"	15th November	Valencia, Spain	Event organized by Insomnia as DIH	150 companies	Insomnia
Workshop: Die digitale Transformation mithilfe neuer Technologien meistern - Talk: Verbesserte Prozesse durch Cloud Computing	16th November	Insel Mainau, Germany	NA	50	clesgo (Sebastian Pena Serna, speaker)
Formnext	14th – 17th November	Frankfurt am Main, Germany	https://www.mesago.de/en/727altfon/For_visitors/Exhibitors_products/index.htm	>500	Fraunhofer, Exhibitor
Italian Innovation Hub Genova	24th November	Genova, Italy	https://www.fondazioneri.it/it/habitat	15	Stam (Marco Barbagelata, visitor)
Alliance Cluster conference	29th November	Budapest, Hungary	http://alliance.hu/lang/en//	30 participants, speaker slot	Innomine, Gábor Vicze, speaker
Digital Immersion Program "Financing opportunities for digitisation"	13th December	Valencia, Spain	Event organized by Insomnia as DIH	150 companies	Insomnia
2018					
IEEE Future IoT Conference	18th – 19th January	Budapest, Hungary	https://futureiot.uni-eszterhazy.hu	40	Sztaki (Robert Lovas, speaker)
Digital Innovation HUBs 1st. Working Group Meeting	22nd January	Brussels, Belgium	https://ec.europa.eu/futurium/en/implementing-digitising-european-industry-actions/digital-innovation-hubs-1st-working-group-0	100 participants in place + online streaming	Innomine (Gábor Vicze, speaker)
1st Technical Meeting	23rd -25th January	Budapest, Hungary	https://www.cloudifacturing.eu/codecamp-budapest-meeting/	20	SZTAKI, clesgo, cloudSME, SINTEF, UNOTT, UNIBO,

					SUPSI, ULUND
Digital Immersion Program "The Bio Era"	1st February	Valencia, Spain	Event organized by Insomnia as DIH	150 companies	Insomnia
Digital Innovation Hubs coaching program by PWC/Oxentia	19th -20th February	online	https://www.smartfactories.eu/news/6	50 + online	Innomine
Digital Innovation Hubs Working 2nd Working Group meeting	21st February	Brussels, Belgium	https://ec.europa.eu/futurium/en/implementing-digitising-european-industry-actions/digital-innovation-hubs-2nd-working-group-meeting	100 + online	Innomine
Digital Immersion Program "Closure"	22nd February	Valencia, Spain	http://www.innsomnia.es/programa-inmersion-digital-empresarial	150 companies	Innsomnia
EFFRA Assembly	1st March	Brussels, Belgium	https://www.effra.eu/	60	Fraunhofer
FORINVEST 2018	7th – 8th March	Valencia, Spain	www.foinvest.feriavalencia.com	1000	Innsomnia
Cloud Computing Experience Day	13th March	Duisburg, Germany	https://www.cloudifacturing.eu/event/experience-day-2018/	35	cloudSME
Dissemination Event for SME's at the Valencia CODECAMP	13th June	Valencia, Spain	NA	20	Innsomnia
CloudFest	12th – 16th March	Rust, Germany	https://www.cloudfest.com/	>400	cloudSME
Digitisation for SMEs	13th March 2018	Valladolid, Spain	https://www.camaravalladolid.com/noticias-camara/la-camara-valladolid-presenta-mas-30-empresas-la-digitalizadora-de-castilla-y-leon/	30 companies	Innsomnia
CLOSER 2018 Conference	19th – 21st March	Funchal, Madeira, Portugal	http://closer.scitevents.org/KeynoteSpeakers.aspx#3	100	Sztaki (Peter Kacsuk, Keynote speaker)
Experten Roundtable -	20th March	Düsseldorf, Germany	NA	20	clesgo

Visual Computing and Analytics in Engineering and Manufacturing					
SSV Conference – Talk: How to Improve the Efficiency of your AM Process with Cloud Solutions	21st March	Oslo, Norway	NA	25	clesgo
HPC Driving Innovation	22nd March	Zagreb, Croatia	https://watify-hpc.b2match.io/	24	SINTEF (Key note + panel)
Manufacturing trade fair	22nd March	Bologna, Italy	NA	NA	Zannini & Nissatech
MECSPE 2018	22nd – 24th March	Parma, Italy	www.mecspe.com/en/	50.000	CETMA
Digitising European Industry	27th – 28th March	Paris, France	https://ec.europa.eu/digital-single-market/en/news/digitising-european-industry-stakeholder-forum-2018	NA	Innomine (Gábor Vicze, visitor)
Workshop: Információmenedzsment Innovációs Klaszter	9th April	Budapest, Hungary	NA	100	DSS Consulting
Smart Factory/DFKI Lab: Fair Summit of Relevant Partners	12th April	Germany	NA	28	DFKI
Feria de Energía en Galicia	22nd - 24th April	Galicia, Spain	www.feriaenerxiagalicia.com	25-50	nablaDot
Hannover Messe Industrie 4.0	23rd - 27th April	Hannover, Germany	https://www.cloudifacturing.eu/event/hannover-messe-leading-trade-fair-industrial-technology/	> 500	Clesgo, CloudBroker, cloudSME, ScaleTools, LCM, Hanning, STAM, Fraunhofer, Innsomnia
Internationale Luft & Raumfahrt Ausstelung (ILA Berlin Air Show)	25th – 29th April	Berlin, Germany	www.ila-berlin.de	> 500	Fraunhofer
2nd. Technical Meeting	8th - 9th May	Oslo, Norway	https://www.cloudifacturing.eu/cloudifacturing-2nd-technical-meeting/	18	SZTAKI, clesgo, cloudSME, SINTEF, UNOTT, UNIBO, SUPSI, ULUND

1st meeting of Task 60 PVT	May 16th – 18th	Freiburg, Germany	NA	60	EndeF
Digital Immersion Program Valladolid	17th May	Valladolid, Spain	Event organized by Insomnia as DIH https://www.camaravalladolid.com/noticias-camara/la-camara-de-comercio-de-valladolid-y-bankia-inician-un-programa-de-digitalizacion-para-empresarios/	30	Insomnia
MIPRO 2018	21st - 25th May	Croatia	www.MIPRO.hr	100	UoW (Tamas Kiss, Speaker)
European HPC Summit Week 2018	28th May - 1st June	Ljubljana, Slovenia	https://exdci.eu/events/european-hpc-summit-week-2018	100	IT4I, Nissatech
Workshop: Cloud Solutions for AM	29th May	NA	NA	50	Clesgo (Sebastian Pena Serna, speaker)
Oresund Security Day	4th June	Oresund, Sweden	https://www.eventbrite.com/e/oresund-security-day-spring-2018-registration-45473542590#	40	ULUND
3D Print	5th – 7th June	Lyon, France	clesgo	500	http://www.3dprint-exhibition.com/
Valencia Code Camp	12th - 14th June	Valencia, Spain	https://www.cloudifacturing.eu/valencia-code-camp	80	All partners
	13th June		Dissemination event for SMEs "Presentation of 1st CloudiFacturing Open Call" https://www.tufinanziacion.com/uploads/Programa%20Ayudas%20P%C3%BAblicas%20Europeas%20para%20	20 companies	Insomnia

			la%20Industria.pdf		
Genera Energy Fair Trade	13th – 15thJune	Madrid, Spain	www.ifema.es/genera_06/	300	EndeF
Chamber of Commerce and Industry of Valladolid	20th June	Valladolid, Spain	NA	40	Innsomnia (Speaker)
ISC 2018	24th - 28th June	Frankfurt, Germany	www.isc-hpc.com	>200	Fraunhofer, clesgo (speaker), IT4I, Nissatech
Digital Assembly 2018	25th June	Sofia, Bulgaria	https://www.cloudifacturing.eu/digital-assembly-2018/	150	cloudSME, Innomine
PLM Conference	1st – 4th July	Turin, Italy	http://www.plm-conference.org/	30	Clesgo (speaker)
SIGGRAPH conference	10th -19th August	Vancouver, Canada	https://s2018.siggraph.org/	>500	Fraunhofer
CAxMAN road tour Workshop	28th August	Darmstadt, Germany	https://www.igd.fraunhofer.de/veranstaltungen/caxman-roadtour-workshop	30	Fraunhofer
KI MAP Network	10th September	Solingen, Germany	NA	30	cloudSME
EuroSun 2018 12th International Conference on Solar Energy for Buildings and Industry	10th – 13th September	Rapperswil, Switzerland	www.eurosun2018.org	>100	EndeF
Go-Visual: Visuelle Analyse con Smart Data	28th September	Berlin, Germany	https://www.igd.fraunhofer.de/veranstaltungen/go-visual-visuelle-assistenz-der-produktion-0	70	clesgo

TABLE 12 - CLOUDIFACTURING RELATED DISSEMINATION EVENTS IN 2017/18 (PART OF THE 1ST PERIOD)

Event-Name	Date	Place, Country	Additional Information	Audience	Partner involved
2018					
HPC optimization of solar panel production - Our CloudiFacturing experience	TBD (probably October - November 2018)	NA	To be confirmed	NA	nablaDot (speaker)
Technical Seminar	TBD (probably October - November 2018)	NA	To be confirmed (Organized by Innsomnia)	NA	nablaDot (speaker)

Indigo Industry 4.0 Day	10th October	Budapest, Hungary	https://indigonap.hu/	150	Sztaki
NAFEMS European Conference Multiphysics Simulation 2018	11th – 12th October	Budapest, Hungary	https://www.nafems.org/mp2018/	30	LCM, cloudSME
Fabbrica Futuro	23rd October	Bari, Italy	https://www.este.it/eventi-per-data/565-fabbrica-futuro-bari-2018.html	200	CETMA
6th OpenFOAM User Conference 2018	23rd - 25th October	Hamburg, Germany	https://www.esi-group.com/it/lazienda/eventi/2018/6th-openfoam-user-conference-2018	200	Cetma (Speaker (to be submitted and accepted))
Digital FUTUREcongress	8th November	Essen, Germany	https://essen.digital-futurecongress.de/	NA	cloudSME
Formnext	13th - 16th November	Frankfurt, Germany	https://www.mesago.de/en/formnext/For_visitors/Welcome/index.htm	>300	Fraunhofer, Exhibitor
SPS IPC Drives	27th - 29th November	Frankfurt, Germany	https://www.mesago.de/en/SPS/	300	Machineering
Stam Annual Workshop	1st December	NA	NA	>50	Stam
EDPC	4-5 December	Schweinfurt, Germany	https://www.edpc.eu/	<300	LCM, Hanning
ICT 2018	4th – 6th December	Vienna, Austria	https://ec.europa.eu/digital-single-market/en/events/ict-2018-imagine-digital-connect-europe	500	cloudSME, clesgo
2019					
Digitisation for SMEs	13th March	Valladolid, Spain	https://www.camaravalladolid.com/noticias-camara/la-camara-valladolid-presenta-mas-30-empresas-la-digitalizadora-de-castilla-y-leon/	30 companies	Insomnia
Hannover Messe 2019	1st – 5th April	Hannover, Germany	(2 presentations at the CAE Forum booth booked)	< 500	cloudSME

TABLE 13 - CLOUDIFACTURING RELATED DISSEMINATION EVENTS IN 2018/19 (PART OF THE 2ND PERIOD)

4 TRAINING ACTIVITIES

As stated in the task description of T7.4, training activities are an important tool to promote and demonstrate the benefits of using the technology provided by the CloudiFacturing project, and we distinguish between internal and external training.

Training activities have started at the beginning of the project (beginning of the first wave of experiments) by explaining to the experiment partners and the DIHs what the two technology stacks brought into CloudiFacturing are able to provide.

Training was pursued in the Code Camps that took place in the first year of the project, where training was again bi-directional, not only the experiment partners learned more about how to use the technology, its interface, how to programme with it, etc., also the core partners learned more about the requirements being posed by the experiments which influenced the development and priorities of the CloudiFacturing solution.

Training also happened internally to the experiments, meaning experiment partners trained participants in the experiment to a) better understand the use case and b) use the prototype implementation of the experiment. The extent of this type of training varies between the experiments.

For CloudBroker Platform a Train the Trainer presentation has been prepared for the five DIHs. This presentation enables the DIHs to demonstrate and promote the advantages using such a MultiCloudPlatform.

Additionally, DIHs have been trained to present CloudiFacturing and selected technologies at events, especially at Hannover Messe Industrie (HMI) 2018. The training has been supported by documented instructions and hands-on (also remote) sessions where DIHs have been introduced to demonstrate some of the technology.

The training activities will continue with the results of the first wave experiments directed towards the DIHs to enable them to show the impact of CloudiFacturing to the end users and ISVs and value-added resellers of the experiment components as well as to the wave 2 third parties that will be contracted, starting their experiments in January 2019.

5 COMMERCIAL EXPLOITATION

The commercial exploitation of the results of the CloudiFacturing project will happen at two major levels. The project executes at least 21 application experiments in three waves. Each of these experiments will provide detailed commercial exploitation plans and expected to generate significant socio-economic impact. On the other hand, core partners of the project develop and will operate the CFG Digital Marketplace. The second level of commercial exploitation will happen via this Digital Marketplace. This section provides an overview of commercial exploitation plans at both above described levels after the first year of the project.

5.1 Commercial Exploitation at the level of individual experiments

The CloudiFacturing project conducts at least 21 application experiments to validate its technology, achieve a critical mass, and generate significant socio-economic impact. These experiments will be executed in three waves. The first wave of experiments was included in the original project proposal and currently these are under way, while the second and third wave will be facilitated via open calls. Each experiment is expected to provide a clear roadmap and plausible evidence regarding long term commercial exploitation of its results.

As the first wave is already on its way, commercial exploitation data has already been collected from each experiment. The details of these commercial exploitation plan and quantifiable targets are presented in deliverable D1.1 Intermediate Report on the First Wave of Experiments and First Open Call Process. Here we only provide a short summary of the data collection process and the presented information. For more details please refer to Section 2 of D1.1.

During the implementation of the experiments specific emphasis has been placed on collecting and analysing business requirements, providing clear business plans for the commercial exploitation and sustainability of the solutions, and supporting the experiments with detailed breakeven point calculations. The activities were led, coordinated and consulted by a specialist CloudiFacturing Competence Centre, SUPSI that is an expert in business modelling and planning. Each experiment worked in strong collaboration with SUPSI and analysed business and commercial exploitation aspects of the solution under their guidance. The results of this analysis are parts of the experiment reports included in D1.1.

Regarding business plans and commercial exploitation, each experiment collected and summarised the following information:

- A summary of the business planning process including motivation behind the experiment, an analysis of the current and the cloud-based processes and expected impact.
- A market analysis and marketing strategy definition that includes an analysis regarding the size of the potential market and the main competitors.
- A business model for commercial exploitation using the Lean Canvas approach.
- A SWOT analysis.
- A calculation of financial considerations that include a definition of the commercial model, costs and expected revenues from the new CFG solution, and a breakeven point calculation that estimates when the cloud-based investments will start generating revenues for the companies.

- Detailed KPI metrics regarding the generated impact that includes commercial exploitation related KPIs, such as increase in turnover and profit.
- Detailed exploitation plan that summarises how exactly the results of the experiment will be realised and exploited commercially.

D1.1 includes all the above described data for every CFG experiment of the first wave. This business centric approach assures that besides technological excellence experiments start planning future commercial exploitation at a very early stage.

5.2 Commercial Exploitation and Business Sustainability of the Digital Marketplace

The Digital Marketplace will be the central channel to commercialise the CloudiFacturing results; in other words, the Digital Marketplace is the default entry point to the CloudiFacturing solution. This means that the Digital Marketplace will directly interact with the CloudiFacturing platform components and it will therefore enable the execution of artefacts available within the execution engines (as a result of the three waves of experiments and the services from WP4 and WP5).

The Digital Marketplace aims to become the single point of access in Europe and beyond to manufacturing SMEs for ICT-enabled solutions, including cloudified Computer-aided tools (CAx), simulation and visual analytics software for big factory data running on flexible Cloud and HPC resources, as well as training and consultancy services to facilitate the adoption of the advanced technology.

The Digital Marketplace is inspired by the concept of agora, aiming to gather assemblies and markets within the same space; in our case, the community and the marketplace of ICT-enabled solutions for manufacturing SMEs. The Digital Marketplace aims to foster and support the cultivation of a community around ICT technologies for the manufacturing industry. The purpose of the Digital Marketplace is to be recognized as an online space, where manufacturing SMEs can learn and experience technology trends and solutions for their own businesses. However, and from the point of view of the manufacturing SMEs, it is not only about gathering information, but also about having the opportunity to interact and communicate with other members of the community, who could look for similar information or who could already have solved similar challenges.

By building and cultivating this community, we want to facilitate the engagement with the technology offered by the Digital Marketplace. Manufacturing SMEs should in the first line perceive the Digital Marketplace as a neutral source of know-how for them, regardless of their intention to use or purchase any of the executable artefacts being offered. Notwithstanding, we believe that a positive engagement with the community and a positive endorsement of other members will lead to an increment in the number of adopters and users of the technology offered by the Digital Marketplace and its partners.

For a successful joint commercial exploitation of the CloudiFacturing results, we would need to define the commercial model and the legal framework that facilitate a feasible commercialisation, accounting for the granting of rights and the provision of support. For a long-term sustainability of the CloudiFacturing results, we would need to establish a suitable commercial operation that ensures the professional development of the customers, considering the availability of the solution and the provision of services.

5.2.1 Commercial Exploitation at the level of the Digital Marketplace

We foresee that all the services offered in the CloudiFacturing Digital Marketplace will be based on a pay-per-use business model with a unified billing process, in order to streamline the adoption of the orchestrated technology without jeopardizing the liquidity of the manufacturing SMEs. The Digital Marketplace will be open, empowering different stakeholders to become members of the community to offer their technology or consultancy services through an additional distribution channel, or to access advanced cloud-based services and expert knowledge to boost the competitiveness.

The community members will be able to influence and accompany the evolution of the CloudiFacturing Digital Marketplace, suggesting additional features and participating as stakeholders in agile-driven iterative development cycles. The openness of the Digital Marketplace will allow any end user in the context of the product development or production processes, any technology provider (ISVs, VARs, RTOs, computing resources providers), and any consultancy company to join the Digital Marketplace and to exploit the large network of purpose-affined members; thus, building and generating sophisticated added value.

The Section 2 of Deliverable D6.1 outlines the current understanding within the consortium about the Digital Marketplace. These conceptual analyses focus on the comparison of related solutions available in the market, including the collection of the requirements from the experiment partners of wave 1 toward the Digital Marketplace. Furthermore, the expected customer types, the derived customer stories, and the needed user roles are described in detail, providing a clear idea of how the stakeholders will interact within the Digital Marketplace.

The Digital Marketplace, the CloudiFactuing platform, as well as the experiments and the services of WP4 and WP5 are under development and many technology choices will influence the definition of the commercial model for the commercial exploitation from the level of the Digital Marketplace. Nevertheless, we already studied different commercial models and the corresponding interactions with the stakeholders, in order create a basis for further analyses according to the progress of the development.

Figure 27 shows the flow and the role of the partners involved in the provision of executable artefacts to end users (manufacturing SMEs) in the context of a reseller commercial model. The ISVs, VARs and RTOs would be responsible for the deployment and maintenance of the service. A cloud provider hosts the CloudiFacturing platform and other cloud and HPC providers offer compute and storage resources.

The operators of the Digital Marketplace act as the face to the customer and they are responsible for the marketing and the customer support, as well as the billing and payment management. Furthermore, the Digital Marketplace operators also need to make sure that the operation of the whole system is proper by monitoring all the technical systems.

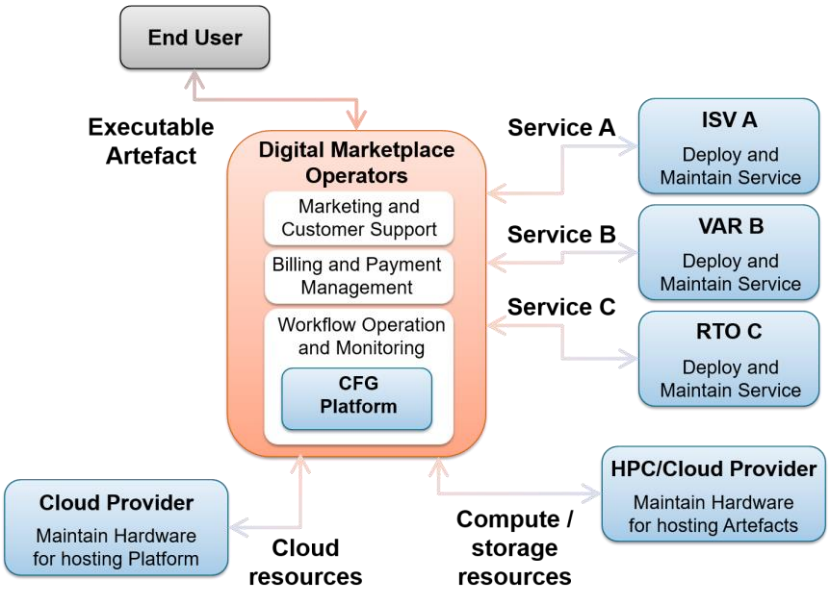

FIGURE 27: RELATIONSHIPS AMONG THE STAKEHOLDERS UNDER A RESELLER COMMERCIAL MODEL

The outlined relationships aim to minimize the risk for every involved stakeholder, while having the opportunity to explore the cloud market and assess how their own customers react to it. Furthermore, it enables all stakeholders to continue cooperating with each other, while still keeping the ownership of the IPRs and the possibility to perform individual exploitations.

In order to build such relationships from a legal point of view, we would need to consider some general aspects. In this context, there are three main actors: a) the end user (the payer of the services), b) the IPR owners (the provider of the technology), and c) the operator of the technology (through the Digital Marketplace). Ideally, the end user would be able to use and pay for any offering under the same legal conditions, facilitating the adoption of the technology. However, to achieve this, the IPR owners would need to grant similar rights and provide similar services, otherwise it would not be possible to homogenise the terms of use for the end user.

From this perspective and in order to implement a reseller commercial model, the IPR owners would be required to license their technology with the following considerations: "proprietary license" (retained copyright) with the right to distribute, demonstrate, disseminate, duplicate, and sublicense the software product.

In other words:

- Software distribution: make the software accessible via the cloud platform.
- Software demonstration: showcase the functionality of the software product.
- Software dissemination: promote and market the software product.
- Software duplication: deploy the software product on different VMs.
- Software sublicensing: grant time-limited license of the software product to end users.

It is also important to note that the IPR owner would also need to provide additional services in terms of: adaptation, installation, integration, and/or maintenance.

In other words:

- Adaptation services: make the software interoperable with the cloud platform.
- Installation services: deploy and configure the adapted software product.
- Integration services: register the software product on the cloud platform.
- Maintenance services: ensure the proper and secure operation of the software product

Although the relationships and licensing considerations outlined above seem to be very suitable for the type of technology that the Digital Marketplace will offer, we studied different alternatives for offering cloud-based software that will also be considered and evaluated along with the evolution of the technology development.

The first case considers and ISV that sells its software tools via an owned PaaS (see Figure 28). In this case, the ISV owns the IPR over the software tools and the PaaS. Thus, the ISV defines the terms and conditions, it has the customer ownership, it is liable for IPR and defects, it offers customer support, and it is responsible for branding and pricing.

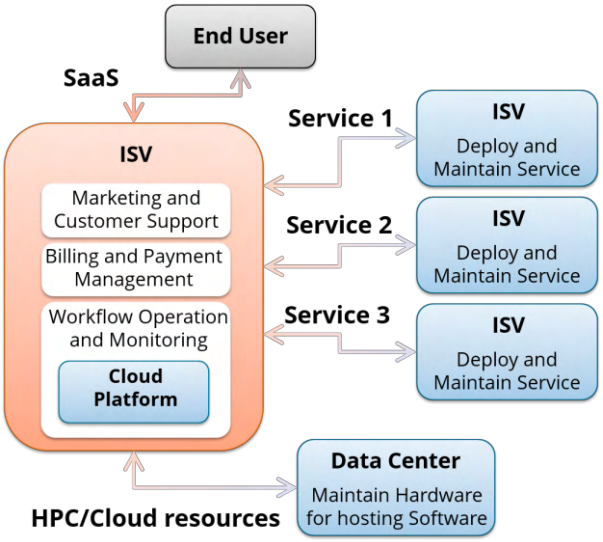

FIGURE 28 - ISV DIRECT SALES OF ITS SOFTWARE TOOLS VIA ITS OWNED PAAS

In the second case, the ISV sells its software tools over a third-party PaaS (refer to Figure 29). The ISV only owns the IPR of the software tools and it has access to HPC / cloud resources over the third-party PaaS. Base on this scenario, the ISV would have a similar behaviour as before, it defines the terms and conditions, it has the customer ownership, it is liable for IPR and defects, it offers customer support, and it is responsible for branding and pricing.

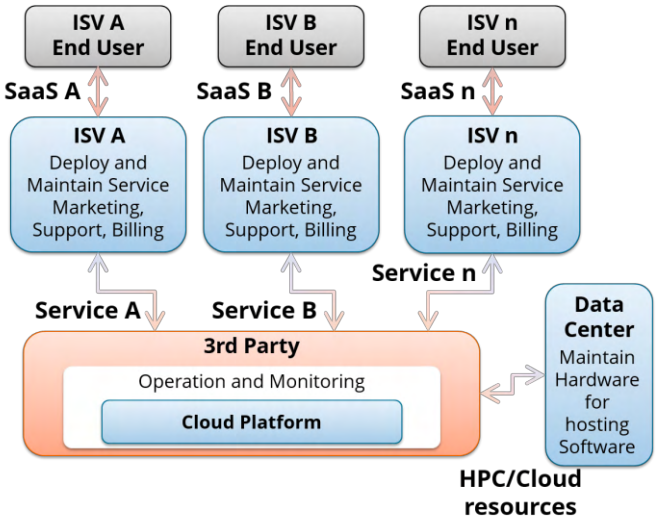

FIGURE 29 - ISV DIRECT SALES OF ITS SOFTWARE TOOLS VIA A THIRD-PARTY PAAS

For the sake of completeness, the third case is similar to the first case (as showed in Figure 30); however, the owner of the software tool is a System Integrator (SI) and not an ISV; in other words, the software tool is based on granted rights from a licensor.

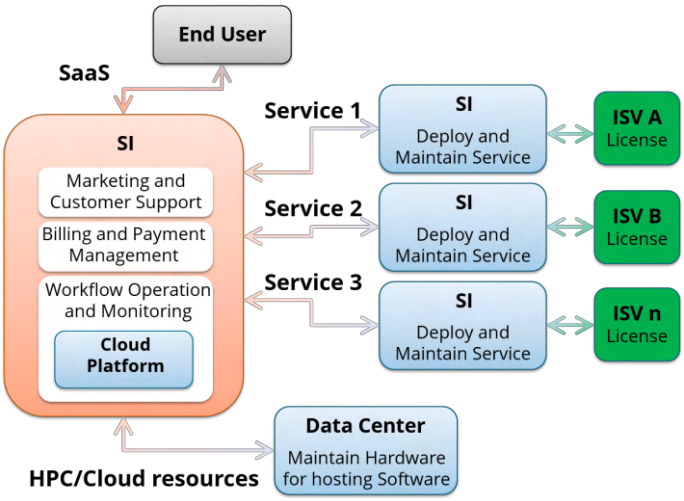

FIGURE 30 - SI INTEGRATES THIRD PARTY SOFTWARE OF A LICENSOR AND SALES THESE VIA ITS OWNED PAAS

There is an additional characteristic, which is relevant according to the technical solution that CloudiFacturing is pursuing: the possibility to build workflows. CloudiFacturing will provide the technical capability to chain different executable artefacts into a workflow. Nevertheless, we also need to establish a suitable legal framework that supports the combination of executable artefacts from different vendors.

In the three cases, it would not be possible to combine executable artefacts from different vendors into workflows. If the ISV or the SI sells its own software tools (regardless of how is was yield, by developing or integrating it), only software of the same ISV / SI will be available, so the combination of executable artefacts is only possible for “in-house” software tools. In the second case, if the ISV is selling software tools via a third-party PaaS, even if there is more software from other vendors

deployed on the same PaaS, it would be difficult to combine the software tools (given that the technical support is available), because each ISV will have its own terms of use and a homogenisation of the terms of use for the end user would legally be very challenging.

The current reseller commercial model (Figure 27) that for the time being seems to be promising, will allow us to build and offers chains of executable artefacts from different vendors. Many established ISV, VARs, and SIs will have no difficulties to adopt such a model, because they have a product that they support and want to resell. Notwithstanding, RTOs might have difficulties with such a reseller commercial model, because some RTOs are not allowed to create products and be liable for a product; hence, they would not be able to resell their technology. In this case, the current option would be to find a partner (internal or external to the project) that license their technology and build a product based on it.

5.2.2 Business Sustainability of the Digital Marketplace

The main objective of the long-term sustainability of the Digital Marketplace is to create a scalable business starting from the value proposition. The main stages in the process are (refer to Figure 31):

- Customer-Problem-Fit: learn as much as possible about the customers, their problems, their wishes, their expectations toward a solution.
- Problem-Solution-Fit: learn as much as possible about how the solution can actually generate added value for the customers.
- Solution-Product-Fit: learn as much as possible about the pricing, the functions, and the scalability of the product.
- Product-Market-Fit: learn as much as possible about the distribution, the dynamics, and the scalability of the business models.

Although this process will be executed several times to improve the results, we can currently assume that we have reached the problem-solution-fit stage; we has a preliminary value proposition, we know the customer (by means of interacting with the end user of the wave 1 application experiments – and from previous projects), and we have an initial idea about the solution (by means of testing concrete use cases with the wave 1 application experiments). Nevertheless, the solution-product-fit and the product-market-fit stages still need to be addressed, in order to establish a scalable business.

To reach the next two stages, an iteration process is needed, where different Minimum Viable Products (MVPs) will be defined and will be tested and validated with early adopters. After different MVPs has been tested and validated, the next step will be to start generating traction, for which we will validate the commercialisation funnel for the product (see Figure 33).

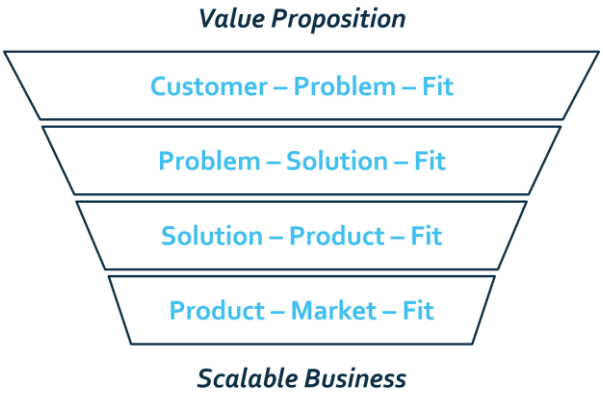

FIGURE 31 - PROCESS TO REACH A SCALABLE BUSINESS FOR THE DIGITAL MARKETPLACE

The process to reach a scalable business will help us to identify the key aspects that we need to optimise in each stage. However, every iteration will result into a better understanding of the business and therefore into an improved description of the business model canvas.

The business sustainability of the Digital Marketplace has different perspectives. A preliminary description of the business models canvas summarises our current understanding of the commercialisation of the Digital Marketplace and its underlying technology (see Figure 32).

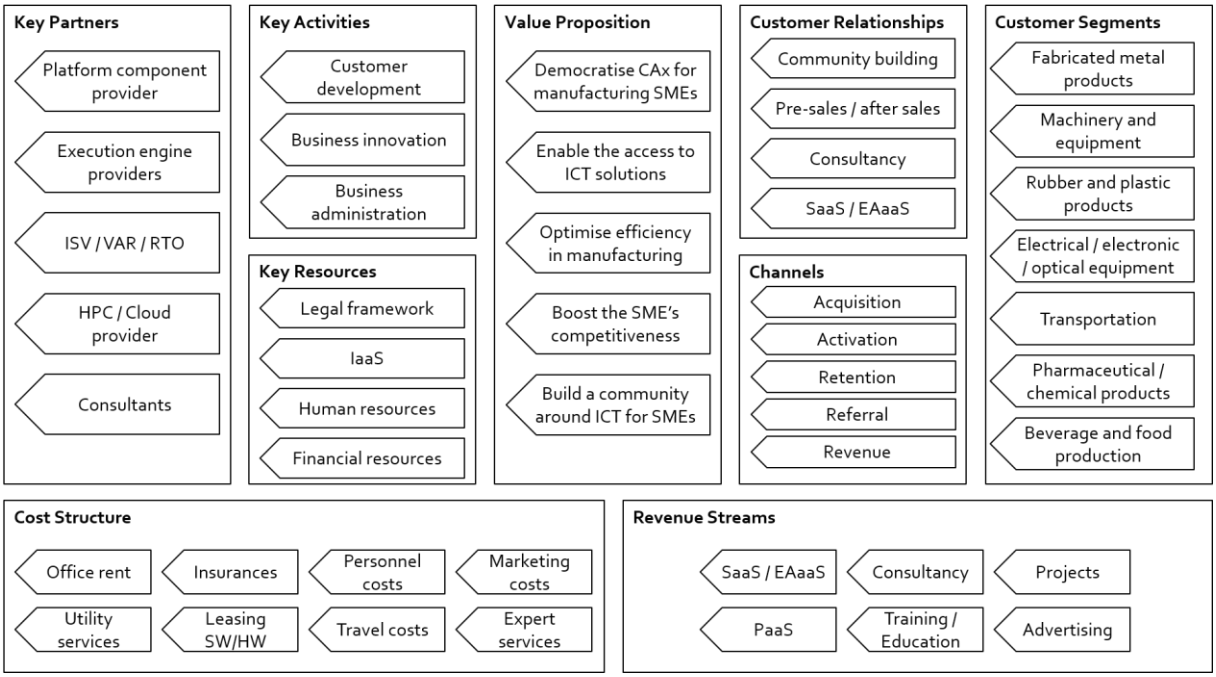

FIGURE 32 - PRELIMINARY BUSINESS MODEL CANVAS FOR THE DIGITAL MARKETPLACE

Although the preliminary business model canvas provides an overview of the different perspectives behind the commercialisation of the Digital Marketplace, given the current state of the project and of the technical development, we still have many aspects to analyse and process in more detail that we cannot formulate at this point in time.

Key Activities:

The strategic decision from the conception of the project was that the two commercial start-ups (clesgo GmbH and cloudSME UG) will take over the operation and the long-term sustainability of the Digital Marketplace and the underlying technology. The first step in this direction aimed to define the scope of the operation and key activities of the Digital Marketplace. The current understanding within the consortium in this regard covers three different activities: a) customer development, b) business innovation, and c) business administration. In more detail, these three perspectives are described below:

Customer Development (aka marketing operation):

- Assess the market, understand the customers' reasoning and needs, and determine strategies to: i) satisfy their desires, ii) attract their interests, and iii) boost the customer's benefits from the provided services.
- Characterize the customers and analyse the competitors from the point of view of the cloud market, in order to design marketing messages, material, and campaigns, by combining multiple channels and strategies such as: try-before-you-buy, social advertising, SEM / SEO, calls-to-action campaigns, contest-driven awareness, etc.
- Develop the market and optimize the marketing funnel (acquisition, activation, retention, referral, and revenue) and the customer journey (familiarize, evaluate, acquire, consume, advocate), by means of iteratively validating the assumptions and improving the customer experience (CX).
- Initiate and cultivate a community around the technology, connecting people, promoting its advantages, guiding prospects in applying it, and providing access to: best practices, how to(s), educational information, specialized links, technology news, etc.
- Design an appealing and scalable commercialization strategy to generate awareness, drive sales, and acquire new customers that enables the commercial integration of the technology providers and that supplies a single point of contact and a first level support to the customers.

Business Innovation (aka technical operation):

- Analyse and comprehend the underlying technology in view of determining strengths and weaknesses, of clarifying dependencies and potential synergies, and of ratifying the individual value propositions.
- Collect and process customer feedback, in order to identify new application fields and to improve, expand, and develop new services in view of co-creating and co-designing new innovative applications.
- Monitor the technological trends and the evolution of the industry, identifying promising endeavours to create innovation roadmaps and to support the future development of the underlying technology and its technological sustainability.
- Validate new services and its corresponding business models from a customer perspective, by means of facilitating the creation of short iteration processes based on minimum viable products (MVPs) and with the direct involvement of external stakeholders.
- Build and maintain an ecosystem with the needed features and support to enable the democratization of the technology and the scalability of the customer base.

Business Administration:

- Identify and manage the technological IPRs of the different technology providers, in order to prepare and set up a viable legal framework toward the commercialization of the integrated solution without affecting any individual exploitation plans.
- Develop a proper commercial model that integrates the different technology providers and that facilitates the sustainability of the technology, while generating added-value to the customers.
- Account for the administrative and financial aspects of the commercial offer, including invoicing, collecting the customer payments, transferring the retained VAT to the corresponding tax offices, and distributing the revenues among the technology providers.
- Inform the technology providers about the customer behaviour with their individual services, in order to develop further strategies and to improve the customer acceptance.
- Determine and monitor metrics and KPIs to streamline the strategic development and execution of the business, while harmonizing these with external business indicators.

Although the legal construct to facilitate the operations of the Digital Marketplace by the two commercial start-ups has not been concretised yet, the agreement between the start-ups is that the operation of the Digital Marketplace will be performed with an equal commitment from both sides and therefore, the revenue generated by the operation of the Digital Marketplace will also be divided in equal parts ("50-50"). Furthermore, given the backgrounds of the two commercial start-ups, it has already been agreed that cloudSME UG will have a focus on the customer development aspects, while clesgo GmbH will have a focus on the business innovation aspects. The business administration aspects are a remaining topic to be discussed in the following months (among many other topics).

Value Proposition:

Our preliminary value proposition is formulated in the following way:

We boost the efficiency of manufacturers, who are challenged by the uncertainty of the resource-intensive Trial & Error process, when manufacturing industrial products. The typical Trial & Error process is caused by the lack of understanding of the interplay between the design of the product, the constraints of the manufacturability, and the efficiency of the manufacturing process itself. We offer you ICT-based solutions to transform your design requirements into an optimal decision-making process that can directly be applied in the production. You will gain a higher confidence in planning and calculating your work, leading to a better innovation and competitiveness for both: you and your customers.

Channels:

When we reached the product-market-fit stage (see Figure 31), a traction framework will be stablished, in order to reach as much customer as possible and scale the business. The different phases in the traction funnel are:

- Acquisition: how can we reach and attract customers? E.g. LinkedIn - Xing - Twitter - Google Ads - SEO - Fairs - Webinars - Video – CTA
- Activation: do the prospects actually use our offer? E.g. Landing Page - Try-before-your-buy - free CPU hours
- Retention: are customers reusing the offer? E.g. Email (lifecycle / status) - Success Stories - Examples - News - Events

- Revenue: do we generate turnover, is the pricing proper? E.g. Email invitation - Like / Share on Social Media - Reviews - Contest-driven awareness
- Referral: do the customers recommend our offer? E.g. Pay-per-use / Pay-as-you-go

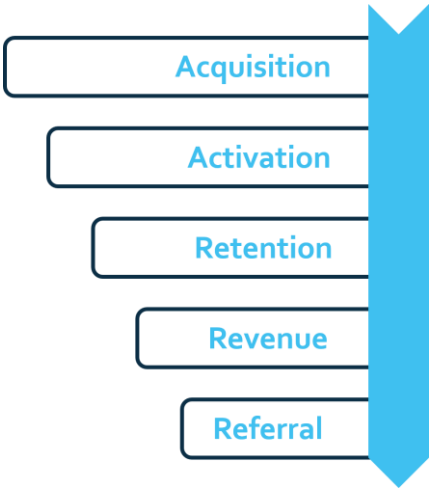

FIGURE 33 - COMMERCIALISATION FUNNEL FOR THE DIGITAL MARKETPLACE.

In order to optimize the traction funnel for our offerings, we will need to run several (marketing) experiments, using different channels and measuring the success rate for each of these. Although there are around 18 different channels, in a business-to-business environment trust is the key to attract prospects and to get recommended.

While we reach the product-market-fit, we will start generating trust by positioning us in the market. To this end, we plan to implement a SEO + Content strategy, where we will regularly publish articles of around 600 words, which will help us to get a better indexing with search engines for keywords and themes that are associated to our technology and offers.

Customer Segments:

The target market for the Digital Marketplace is the manufacturing sector at large and the potential customers are engineering or manufacturing companies that already apply or can apply digital technologies for engineering and production, by means of CAx technologies.

The market for engineering software (CAD, CAM, CAE, AEC, & EDA) is expected to reach USD 50.34 billion in 2022. This fast market growth (from USD 19.98 billion in 2014) is also caused by the increasing use of cloud engineering software, especially by SMEs. North America accounts for about 38% of the global market and Asia Pacific will be one of the fastest growing regions, boosted by the automotive and construction industries. The market share in Europe is 27%, Asia-Pacific 20%, Middle East and Africa 10%, and Latin America (5%). (Transparency Market Research, Nov. 2015: http://www.transparencymarketresearch.com/pressrelease/global-engineering-software-market.htm)

As an example of the increasing use of CAx software, the CAE software CD-adapco provided 2.5 million and 7.3 million computing hours in 2012 and 2013 respectively, i.e. a factor of 3 within one-year time. (Kenneth Wong, Jun. 2014: http://www.deskeng.com/de/map-simulation-cloud/)

The manufacturing sector worldwide accounted for about 16% (USD 12.6 trillion) of the global gross domestic product (GDP) in 2013, being led by China (23.9%), EU (20.9%), USA (16.3%), and Japan (7.6%). (The World Bank, Manufacturing, value added, Oct. 2013: http://data.worldbank.org/indicator/NV.IND.MANF.CD).

In 2012, the European Union (EU) had about 2.1 million companies in the manufacturing sector, employing 30 million people (22.4% of the employment in the EU) and generating about EUR 1.62 trillion of value added (22.6% of the value added in the EU). From the previous figures, 2.08 million companies were manufacturing SMEs, employing 17.7 million people (59%) and generating about EUR 720 billion of value added (44,4%). (eurostat, Manufacturing statistics – NACE Rev. 2, Nov. 2015 http://ec.europa.eu/eurostat/statistics-explained/index.php/Manufacturing_statistics_-_NACE_Rev._2)

The potential customers of the Digital Marketplace will mainly be SMEs (and mid-caps) in the manufacturing sector, since these have limited resources and might have difficulties to afford the expensive software licenses or the hardware to perform high-end computations. Similarly, SMEs might not have the engineering expertise to prepare and execute such computations.

Nonetheless, the customers are not restricted to the above-mentioned ones; we will also aim to serve engineering companies or big manufacturing companies with high engineering expertise, which are also willing to explore new technologies and alternative business models.

The target industries within the manufacturing sector are too large to design go-to-market activities; thus, the 3 major target industries are also segmented into smaller chunks (see **Error! Reference source not found.**). Nevertheless, the initial marketing activities will focus on one segment, in order to optimize the resources and to increase the possibility to dominate one segment. The gained experienced will support the expansion to other segments and industries with proven results.

Segments in Europe	Enterprises
Professional, scientific and technical activities (Oct. 2015)	
Architectural and engineering activities	906500
Technical testing and analysis	62900
Manufacture of fabricated metal products (Apr. 2013)	
Treatment and coating of metal; machining	142100
Structural metal products	122600
Cutlery, tools and general hardware	49600
Manufacture of machinery and equipment (Apr. 2013)	
General-purpose machinery	12000
Metal forming machinery and machine tools	9300
Agricultural and forestry machinery	7500

TABLE 14 - TARGET SEGMENTS IN EUROPE FOR THE DIGITAL MARKETPLACE

(eurostat - Manufacturing statistics - NACE Rev. 2 https://ec.europa.eu/eurostat/statistics-explained/index.php/Manufacturing_statistics_-_NACE_Rev._2)

It is estimated that about 567.000 manufacturing companies (2014) utilize engineering software in Europe and it is expected that about 120.000 manufacturing companies in Europe will adopt cloud engineering software by 2022.

Revenue Streams:

Although we have not quantified nor prioritised the possible revenue streams, we have identified the most promising services:

- Services based computation units
  - Software as a Service / Engineering Apps as a Service: consumed by manufacturing SMEs
  - Platform as a Service: consumed by ISVs with external web portals
- Services based on time units
  - Consultancy
  - Training / Education
  - Projects
- Services based on clicks / impressions
  - Advertising

6 IMPACT

Through the combined dissemination activities and efforts of all partner CloudiFacturing was enabled to reach a broad range of industries, not only manufacturing companies, also out of the pharmaceutical and medical sector. The amount of submitted proposals of the Open Call shows the success of the work and the raised awareness of CloudiFacturing in Europe during the first period.

The CloudiFacturing website received the most responses from Spain, Germany and Italy – the eastern states of Europe, e.g. Hungary and Slovenia, had weaker response rate compared to the countries mentioned above.

A detailed impact analysis will be provided in the next deliverable, due to the fact that there are not enough data for a valid and qualitative analysis in this early stage of CloudiFacturing. The expected impact for the first experiments is stated below.

Expected impact of CloudiFacturing Application Experiments

Significant part of the impact of the CloudiFacturing project is expected to be generated by the application experiments. The project will run at least 21 application experiments in three waves. The partners for the first wave have already been included in the project consortium, while additional experiments will be recruited via open calls. In this section we reflect on the expected impact from the first wave of experiments and also refer to impact as one of the selection criteria when running the first CloudiFacturing Open Call.

Expected impact KPI metrics have been collected individually from Wave 1 experiment partners during the time of writing the CloudiFacturing project proposal and these figures have been included in the DoA. During the first project year experiment partners revised these KPIs and if it was necessary then they modified them. Detailed analysis of these KPIs at the level of individual experiments can be found in Section 2 of D1.1. Here we present a summary table that concentrates on the overall expected impact generated by the first wave.

The table below shows that although most involved companies expect impact almost immediately (one year) after the experiment, much more significant impact is anticipated within a five year period. Cumulatively, the 15 Wave 1 experiment partners that provided data predict 18 enhanced/new products or services to be created as the direct outcome of the CloudiFacturing project within one year after the experiment, and 80 products and services within 5 years. The predicted turnover increase is almost 1.9 million Euros within a year, and close to 8.5 million Euros within 5 years. Most companies predict significant increase in employment (13 within a year, 60 within 5 years), in the number of business partners (at least 51 within a year and 188 within 5 years), and in making business partners in countries that are new to them (at least 17 in a year and 69 within 5 years). Additionally, 85% of the companies anticipate more efficient business processes and 80% of them expect better increased business practices in both short and longer term. Finally, 85% of the partners expect improvement in customer satisfaction (at a rate between 5% to 100% better customer satisfaction), and 73% of them anticipate reduction in time to product/market (at a rate between 10% to 80% time reduction). The project will continue monitoring these KPIs as the experiments are being implemented and rolled out into production and will report updated figures in future WP7 deliverables.

Regarding the second wave of experiments, expected impact is integral part of the proposal template. The impact KPI table and its detailed analysis is part of the Industry Relevance section of the proposals.

This section has a weight of four (all six other sections are with weight one) and a threshold of three. Therefore, it is guaranteed that proposals with high and most likely and well justified impact will only be selected for funding. Additionally, Section 2 of the template assesses dissemination and exploitation strategy that assures a clear plan and way to commercial exploitation, and therefore assists the companies to reach the anticipated impact.

	KPI Metrics									
partner name	**year after experiment**	**enhanced/ new products/ services**	**increase in turnover [K€]**	**increase in employ-ment**	**new contacts / partners**	**more efficient business processes**	**reduction in time to product / market**	**improvement in customer satisfaction**	**increase in business practice**	**partners in new countries**
LCM	1	1	50K	1	4	Yes	0	10%	Yes	1
	5	7	400K	5	15	Yes	0	50%	Yes	5
Hanning	1	1	0	1	0	Yes	80%	0%	Yes	0
	5	15	300K	5	15	Yes	80%	10%	Yes	10
CAT-MARINE	1	2	250	2	5	Yes	50%	10%	Yes	3
	5	10	1000	6	20	Yes	70%	50%	Yes	6
CETMA	1	1	25	1	5	Yes	10%	5%	Yes	1
	5	5	450	2	20	Yes	35%	70%	Yes	4
SKA	1	1	100	1	2	Yes	N/A	15%	Yes	1-2
	5	4	350	4	10	Yes	N/A	35%	Yes	3-5
Nissa	1	1	80	2	2	10	Yes	N/A	15%	Yes
	5	5	500	10	10	50	Yes	N/A	50%	Yes
Zannini	1	1	No	No	0	2-4	Yes	Yes	Yes	Yes
	5	5	No	No	0	4-7	Yes	Yes	Yes	Yes
Ferram	1	1	750	0	5	Yes	Yes	Yes	Yes	3
	5	1	3500	10	10	Yes	Yes	Yes	Yes	7
Hydal	1	5	200	0	2	Yes	Yes	Yes	Yes	1
	5	10	500	2	4	Yes	Yes	Yes	Yes	2
EndeF	1	yes	200	1	yes	N/A	20%	100%	N/A	LatinA
	5	yes	600	3	yes	N/A	30-50%	100%	N/A	Medit.
nablaDot	1	1	20	1	5	N/A	N/A	N/A	N/A	1
	5	5	120	4	15	N/A	N/A	N/A	N/A	3
DSS	1	1	80	1	6-8	1	15%	Yes	1	1
	5	3	200	3	20-25	2	20%	Yes	2	3
BE	1	1	25-30	1	8-10	1	15%	Yes	3	1
	5	5	65-75	3	25-30	2	20%	Yes	6	3
machineering	1	1	100	1	3	10 %	N/A	5 %	Yes	1
	5	3-5	500	3	20	100 %	N/A	20 %	100 %	20
Trevalli	1	No	No	0	3-5	Yes	Yes	Yes	N/A	N/A
	5	No	No	0	3-5	Yes	Yes	Yes	N/A	N/A
Overall	**1**	**18**	**1,885**	**13**	**>51**	**for 85%**	**10-80%**	**5-100%**	**for 80%**	**>17**
	5	**80**	**8,495**	**60**	**>188**	**for 85%**	**20-80%**	**10-100%**	**for 80%**	**>69**

TABLE 15 - EXPECTED IMPACT OF CLOUDIFACTURING APPLICATION EXPERIMENTS

7 SUSTAINABILITY

It is crucial that the results of the CloudiFacturing project sustain after the end of the project and that the developed solutions are operated and exploited on a commercial basis. In order to achieve this, the project started to compile its first sustainability plan.

When considering sustainability, similarly to commercial exploitation, two strongly correlated levels need to be considered: sustainability of the individual experiments, and sustainability of the Digital Marketplace. These two levels strongly depend on each other.

The major vehicle for the commercial exploitation of the experiments is intended to be the Digital Marketplace. Each experiment is expected to offer a commercial solution, following the successful implementation via the Marketplace. Therefore, the existence and success of the Digital Marketplace strongly influences the sustainability of the experiments. On the one hand, the success of the Digital Marketplace also depends on the success of the individual experiments. The aim of these experiments is providing a critical mass for the Digital Marketplace and therefore facilitate its launch and operation, at least during the early phases of its lifetime. It is expected that the first commercial customers of the Digital Marketplace will indeed be generated via the successful experiments of the three waves. Therefore, in order to facilitate sustainability, work has already started within the CloudiFacturing project at both above described levels.

In order to support and facilitate the sustainability of the experiments, a business focused approach, as described in Section 4.1 has been followed. Each experiment was encouraged and supported to think about business and sustainability aspects early (these are documented in D1.1). Experiments were also made aware regarding the development plans of the Digital Marketplace. Therefore, plans for the early integration with the first Digital Marketplace prototypes can be facilitated.

From the point of view of the long-term sustainability of the Digital Marketplace, the strategic decision from the beginning of the project was that the two commercial start-ups (clesgo GmbH and cloudSME UG) will be responsible for the operation of the Digital Marketplace. The first step in this direction aimed to define the scope of the operation of the Digital Marketplace. The current understanding within the consortium in this regard covers three different perspectives: a) customer development, b) business innovation, and c) business administration. In more detail, these three perspectives are described below:

Customer Development (aka marketing operation):

- Assess the market, understand the customers' reasoning and needs, and determine strategies to: i) satisfy their desires, ii) attract their interests, and iii) boost the customer's benefits from the provided services.
- Characterize the customers and analyse the competitors from the point of view of the cloud market, in order to design marketing messages, material, and campaigns, by combining multiple channels and strategies such as: try-before-you-buy, social advertising, SEM / SEO, calls-to-action campaigns, contest-driven awareness, etc.
- Develop the market and optimize the marketing funnel (acquisition, activation, retention, referral, and revenue) and the customer journey (familiarize, evaluate, acquire, consume, advocate), by means of iteratively validating the assumptions and improving the customer experience (CX).

- Initiate and cultivate a community around the technology, connecting people, promoting its advantages, guiding prospects in applying it, and providing access to: best practices, how to(s), educational information, specialized links, technology news, etc.
- Design an appealing and scalable commercialization strategy to generate awareness, drive sales, and acquire new customers that enables the commercial integration of the technology providers and that supplies a single point of contact and a first level support to the customers.

Business Innovation (aka technical operation):

- Analyse and comprehend the underlying technology in view of determining strengths and weaknesses, of clarifying dependencies and potential synergies, and of ratifying the individual value propositions.
- Collect and process customer feedback, in order to identify new application fields and to improve, expand, and develop new services in view of co-creating and co-designing new innovative applications.
- Monitor the technological trends and the evolution of the industry, identifying promising endeavours to create innovation roadmaps and to support the future development of the underlying technology and its technological sustainability.
- Validate new services and its corresponding business models from a customer perspective, by means of facilitating the creation of short iteration processes based on minimum viable products (MVPs) and with the direct involvement of external stakeholders.
- Build and maintain an ecosystem with the needed features and support to enable the democratization of the technology and the scalability of the customer base.

Business Administration:

- Identify and manage the technological IPRs of the different technology providers, in order to prepare and set up a viable legal framework toward the commercialization of the integrated solution without affecting any individual exploitation plans.
- Develop a proper commercial model that integrates the different technology providers and that facilitates the sustainability of the technology, while generating added-value to the customers.
- Account for the administrative and financial aspects of the commercial offer, including invoicing, collecting the customer payments, transferring the retained VAT to the corresponding tax offices, and distributing the revenues among the technology providers.
- Inform the technology providers about the customer behaviour with their individual services, in order to develop further strategies and to improve the customer acceptance.
- Determine and monitor metrics and KPIs to streamline the strategic development and execution of the business, while harmonizing these with external business indicators.

Although the legal construct to facilitate the operations of the Digital Marketplace by the two commercial start-ups has not been concretised yet, the agreement between the start-ups is that the operation of the Digital Marketplace will be performed with an equal commitment from both sides and therefore, the revenue generated by the operation of the Digital Marketplace will also be divided in equal parts (“50-50”). Furthermore, given the backgrounds of the two commercial start-ups, it has already been agreed that cloudSME UG will have a focus on the customer development aspects, while clesgo GmbH will have a focus on the business innovation aspects. The business administration aspects are a remaining aspect to be discussed in the following months, among many other topics.

8 IPR MANAGEMENT PLANS

The IPR Management Plans are crucial for the exploitation and development of the project outcome. This includes a protection to the IPR from the project before publication by the applicable means such as patenting, copyrights, corporate and trade secrets, among others.

The current owner of the IP address of the Digital Marketplace module will have a joint ownership by several beneficiaries (as it is governed by the Consortium Agreement Article 8.2). It will be jointly owned in shares according to their share of contribution to the Digital Marketplace by the joint owners concerned.

As for under which license will it provide the module for the project, it hasn't been discussed extensively, but the project has strong interest in commercially exploiting the Digital Marketplace; thus, a proper commercial license will be offered.

The University of Westminster team develops the repository component of CloudiFacturing based on the Nexus Repository OSS Opensource framework. Nexus Repository OSS is powered by Sonatype and covered by the Eclipse Public License (EPL) 1.0. The EPL 1.0 grants the following rights:

- to copy, adapt and distribute the program in source or object code form
- to distribute the code in object code form alone under a different license, provided that license is compatible with the EPL
- patent rights from all contributors to use and make available the code
- to distribute works which contain the code in combination with new code modules, and to license the new code modules in any way the distributor wishes

CloudiFacturing's partner, the University of Westminster plans on using the same EPL 1.0 opensource license as Nexus Repository OSS, during and after the lifetime of the CloudiFacturing project, to develop new modules in order to meet the requirements on CFG. A detailed comparison of EPL 1.0 with other major open source licenses can be found in D3.1 section 6.1.1 - Nexus Repository OSS.

There are no changes in licensing after the project lifetime, because the commercial exploitation is a main objective within the project; hence, no changes in licensing are expected.

Throughout the duration of the project, the Project Management Board is tasked to continuously monitor and identify project results that may qualify for Knowledge Management and IP Protection. When certain IP is determined to be integral for future business opportunities of the involved partner(s), specific strategies and action plans will be agreed and documented as well as the necessary steps to protect that IP.

The status of the project regarding the IPR Management Plans is in an on-going point of the process, considering this is the first year since it has started and there are still two more years to come for the completion of the project and its outcome.

IPR related to CloudiFacturing components				
Name of the component	**Short description of the functionality**	**Owner(s) of the IPR**	**Licensing model for commercial exploitation**	**Features/limitations of the applied license**
Digital Marketplace	The Digital Marketplace is inspired by the concept of agora, aiming to gather assemblies and markets within the same space; in our case, the community and the marketplace of ICT-enabled solutions for manufacturing SMEs. On the one hand, the Digital Marketplace will directly interact with the CloudiFacturing platform components and it will enable the execution of artefacts. On the other hand, the Digital Marketplace aims to foster and support the cultivation of a community around ICT technologies for the manufacturing industry.	The Digital Marketplace will have a joint ownership by several beneficiaries (as it is governed by the Consortium Agreement Article 8.2). The Digital Marketplace will jointly be owned in shares according to their share of contribution to the Digital Marketplace by the joint owners concerned.	This has not extensively been discussed within WP6; nevertheless, the project has a strong interest in commercially exploiting the Digital Marketplace; thus, a proper commercial license will be offered.	No limitations have been identified at this point in time.
Repository of Executable Artefacts (REPO)	The repository is responsible for managing, versioning, and storing artefacts. Metadata describes all artefacts and includes information such as versioning, dependencies, and parameters required for executing the artefact.	University of Westminster	Eclipse Public License (EPL) 1.0, open source	REPO is based on the Nexus Repository OSS open source framework and inherits its EPL license
Central User Management Service (CFGUM)	The central user management provides a single sign on authentication mechanism as well as functions related to the central management of users.	University of Westminster and Lund University	Apache License 2.0, open source	CFGUM is built upon Keycloak under Apache License 2.0 and using python-keycloak under MIT licence. We choose to follow Apache license as CFGUM mainly relies on Keycloak.
Central Billing Component	Central Billing Component (CBC) defines the way a user is going to be charged for the artefacts usage. CBC charges final users correspondingly, tracks changes and provides reports on billing / usage-related information.	CloudBroker GmbH	GNU GPL v.3, open source	No limitations have been identified.
Executor for Workflow and Application Engines (WAM)	The WAM is responsible for executing sequences of Cloudflow and Flowbster workflows, and CloudBroker applications	MTA SZTAKI	Apache 2.0, open source	

Data Transfer and Browsing Service (CFGDT)	This component is responsible for transferring data between various storages where workflow inputs and outputs are stored and provides GUI for the end-users to manage data on these resources.	MTA SZTAKI	Proprietary	CFGDT (a.k.a. Data Avenue) is based on open source libraries (e.g. AWS SDK) used to access storage APIs.
CloudBroker Platform	The CBP is a marketplace where users can register, deploy, charge for and use their own cloud resources and application software or use resources and software provided by others	CloudBroker GmbH	Proprietary	IP of the CloudBroker Platform belongs to CloudBroker and protected by copyright & trade secret by CloudBroker.
CloudFlow Workflow System	These components are responsible to add service descriptions to the system. Moreover, to combine these services to workflows (experiments) and to execute the created workflows.	German research Center for Artificial Intelligence (DFKI)	Individual Licensing Model to discuss with DFKI	
CloudFlow Workflow System: Authentication, HPC and storage services.	Software components in the CloudFlow Infrastructure, interacting with underlying cloud / HPC resources and the upcoming CfGUM	SINTEF	Proprietary	
Flowbster Workflow System	Flowbster is a workflow execution framework, built on top of Occopus, which is used to set up the infrastructure for executing the workflow	MTA SZTAKI	Apache 2.0, open source	
Occopus Cloud Orchestrator	The Occopus Cloud Orchestrator tool can be used to set up autoscaling infrastructures in various cloud environments	MTA SZTAKI	Apache 2.0, open source	
Manufacturing Analytics Components	Visual Analytics Services for Analysis & UI Webservices and Client Code for the Analytical Cockpit and the Visualizations	Fraunhofer	Fraunhofer offers Licenses for Analytics Service Modules and Visualization Clients	Visual Analytics Service are tied to QT commercial licenses. Frontend components are based on Software with MIT or BSD License.
CAD Visualization tool	Toolkit and web application(s) for interacting with CAD models.	SINTEF	Proprietary	
EB-MES (Event-Based Mes plug-in for Industry 4.0)	The plug-in performs stream analysis on data coming from machines. It generates predictive events where real-time data flow matches off-line rules. Events are used for notification on smart devices and for changing sequences on machine activity programs.	UniBo	Not yet defined	Not yet defined

TABLE 16 - IPR RELATED TO CLOUDIFACTURING COMPONENTS

9 WORK PLAN ASSESMENT

For WP7, following the project rhythm, the first year of the project was characterized by

- setting up the first public image of the project
- first branding
- setting up of communication channels
- promotion of the first Open Call

The regular (every two weeks) meetings for the Experiment Task Force as well as for the Core Technical Team as well as for the Technical Working Groups have been organized by cloudSME via WebEx. This kept cloudSME as work package leader up to date and informed about the difficulties and progress of each step. Without this participation it would have been impossible to stay in touch with the project evolution.

9.1 Deviation from the Work Plan

There has been no deviation from the workplan.

9.2 Plans for the next Period

In the next period

M12 – M18 Branding and CI for the new Marketplace
This piece of work includes the creation of a name & logo and all related work

M12 – M18 Creation of success stories with the outcome of the first seven experiments. Will be published on the project website and on the Marketplace.

M18 – M24 Setting up the interactive communication channels for the Marketplace

The dissemination of the First Wave of Experiments and its completion will be published and delivered to the main media in order for them to publish it and let the public know our achievements.

There will be a new Wave of Experiments, so by the beginning of 2019 we will start developing the Experiments descriptions and the Guide for the 2nd Wave of the experiments.

We will start doing the preparation for the second Open Call for Experiments at the beginning of April 2019.

The collaboration with WP6 (Marketplace) will be intensified, icluding MoU between Clesgo and cloudSME regarding the operation of the market place.

10 CONCLUSIONS

The first period of dissemination towards stakeholders of CloudiFacturing can be concluded as very satisfying, the interest raised for the project was all-in-all very high. The communication within the project is challenging but manageable – to keep the high influence on the communication channels for stakeholder it is important to engage project partners to support the general distribution of news, tweets, links. The wide range of partners enables the project to reach more than the already reached audience without high monetary efforts.

As the number of participants in this project is high, it's not easy to keep the overview of the whole. Due the fact that cloudSME is organizing the regular Task Force and Working Group Meetings, cloudSME is enabled to stay in touch with the whole development.

cloudSME as a work package leader is not part of the Executive Board, sometimes this led to minor problems in communication. Decision made by the executive board took some time to get known by cloudSME team. This issue was overcome by the improvement of communication, the coordinator will give a short briefing after relevant Executive Board Meetings to cloudSME.

Over all the work has been delivered successful and provoked significant results. For the next period we can build on and extend this success.

11 APPENDIX

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If this message is not displayed properly, click here please.

cloudSME

Competence Center for Cloud-based HPC simulation

CloudComputing Newsletter #1 - 2018

Less than 25% of the manufacturing companies in Europe profit from ICT-enabled solutions.

In the CloudiFacturing Project, manufacturing SMEs are empowered to compute and solve problems that cannot be tackled without Cloud and HPC technology, making them more competitive by reducing development times for innovative products with better performance.

CloudiFacturing

Interested in participation?
OpenCalls will be announced via the CloudiFacturing newsletter during the next weeks.

Subscribe to CloudiFacturing newsletter

SAVE THE DATE!

23rd - 27th April 2018

HALL 6 - BOOTH G46

Digital Factory

HANNOVER MESSE

ruhr:HUB Experience Day 2018 at Technology Centre Duisburg (13.03.2018)

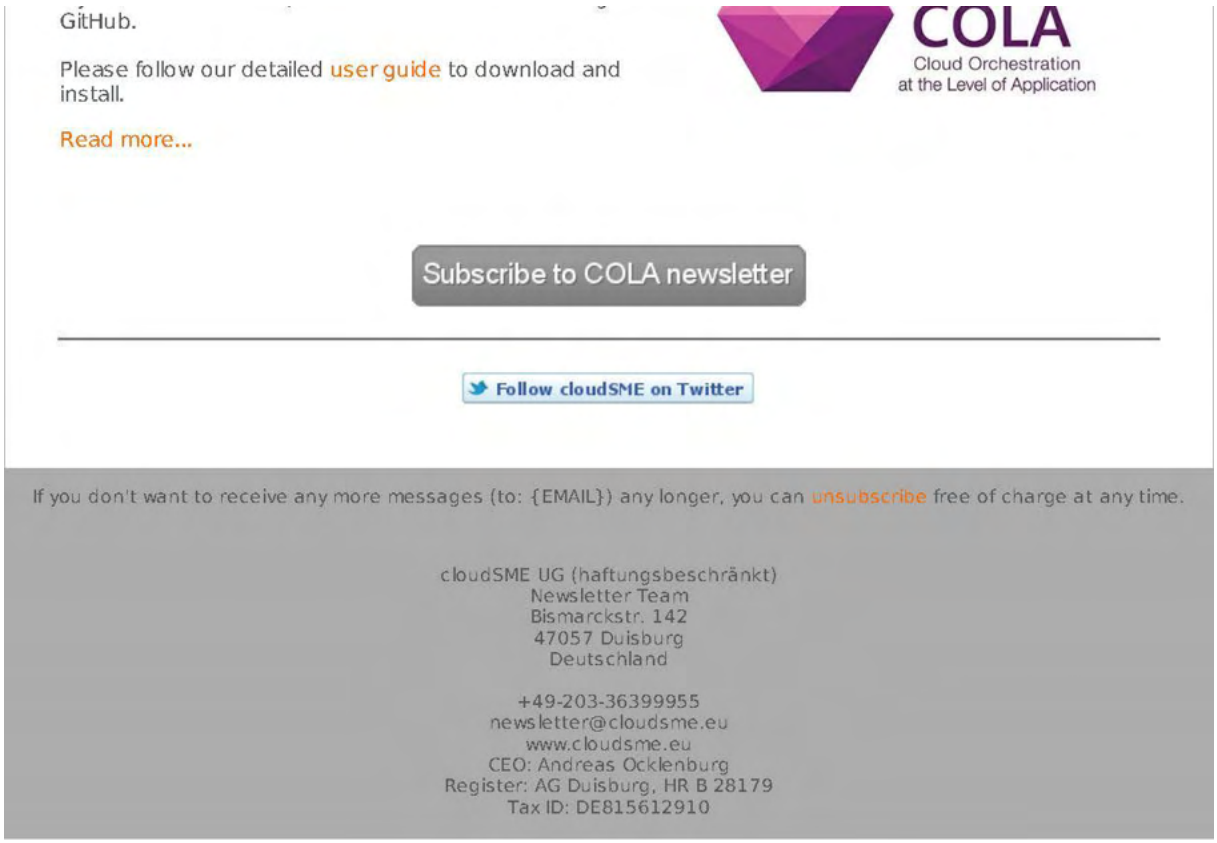
"Cloud-, Edge-, Fog-Computing: What companies and users need to know"

....provides a comprehensive insight of experts into the state of knowledge and the expected future developments in medium-sized companies, international corporations and top-level EU research.

ruhr:HUB Experience Day 2018

MiCADO V 3.1

MiCADO (Microservices-based Cloud Application-level Dynamic Orchestrator) Version 3.1 is available through



APPENDIX 2 - NEWSLETTER NO.1 (2)

If this message is not displayed properly, click here please.

cloudSME **Competence Center for Cloud-based HPC simulation**

CloudComputing Newsletter #2 - 2018

Analyze your factory data and simulate your workflow to dereacse failure rates, capital expenditure and more.

Make the next step in the era of digitalisation and try out cloud-based HPC modelling and simulation to optimize your processes!

Apply now for the Open Call!

Apply with your cross-national team (min. 2 legal entities) in the **next 41 days** for CloudiFacturing's first Open Call!

CloudiFacturing

1st Open Call

Deadline

30th Sepember 2018

APPLY NOW!

Learn more about the Open Call

Looking for tester for our HPC Plugin for WordPress!

We care about your opinion - tell us your impressions and experiences.

If you would like to be a tester, please contact us - we are going to grant you budget for the BETA testing!

Go to the HPC Plugin for WordPress

"COLA" is entering the hot phase

The first phase of developers testings of MiCADO is running and the next step is going to be the Alpha Testing phase.

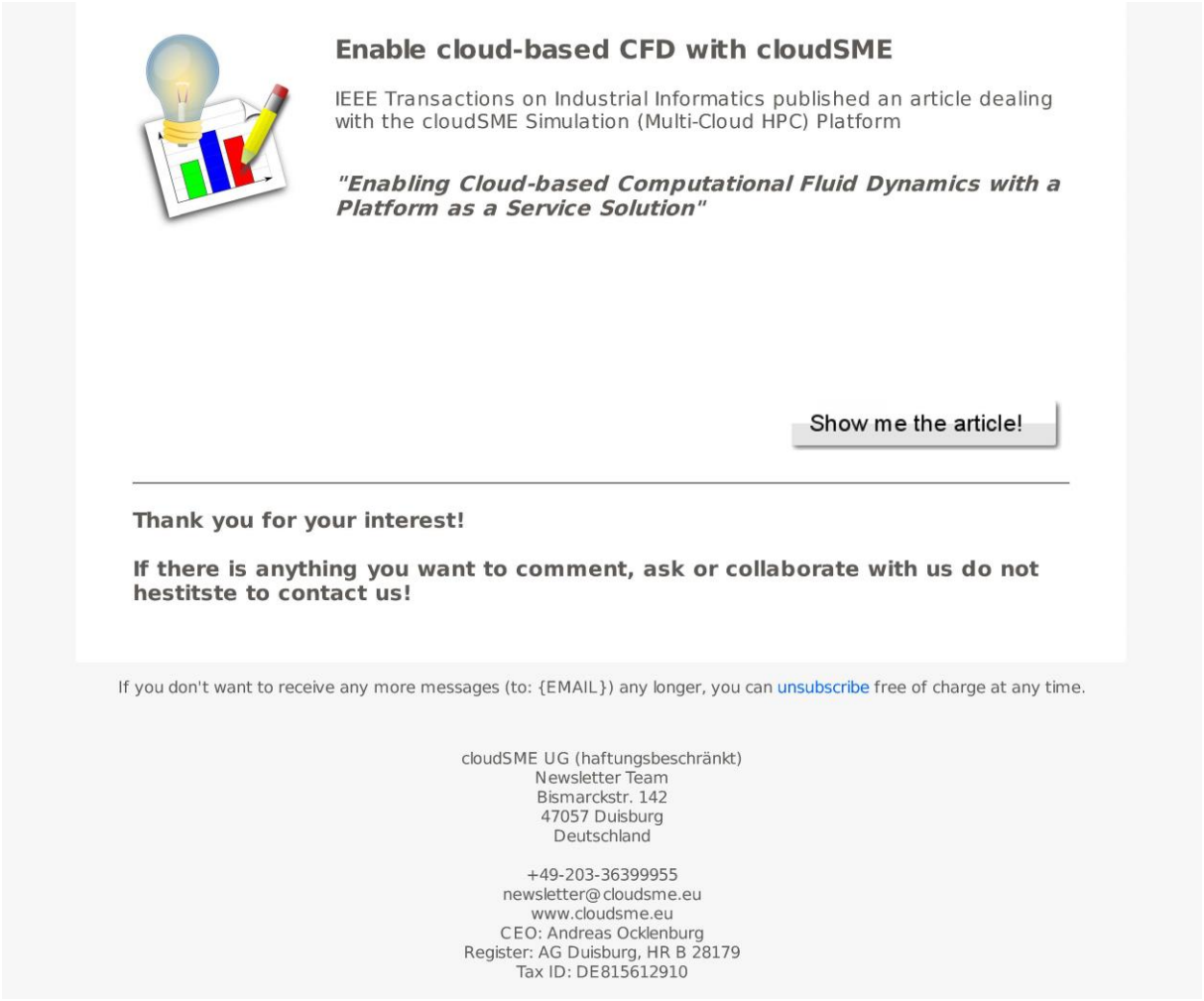
MiCADO - Microservices-based Cloud Application-level Dynamic Orchestrator

Keep on track and learn how to benefit from MiCADO!

COLA

Cloud Orchestration at the Level of Application

Go to project-cola.eu



Enable cloud-based CFD with cloudSME

IEEE Transactions on Industrial Informatics published an article dealing with the cloudSME Simulation (Multi-Cloud HPC) Platform

"Enabling Cloud-based Computational Fluid Dynamics with a Platform as a Service Solution"

Show me the article!

Thank you for your interest!

If there is anything you want to comment, ask or collaborate with us do not hestitste to contact us!

If you don't want to receive any more messages (to: {EMAIL}) any longer, you can unsubscribe free of charge at any time.

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APPENDIX 4 - NEWSLETTER NO.2 (2)

If this message is not displayed properly, click here please.

cloudSME Competence Center for Cloud-based HPC simulation

CloudComputing Newsletter #3 - 2018

Participate in CloudiFacturing!

The Open Call is running until 30th September!
Try out cloud-based HPC modelling and simulation to optimize your processe in the safest way possible!

CloudiFacturing

What do you need to know about the Open Call?

Apply now for the Open Call!

Apply with your cross-national team (min. 2 legal entities) for CloudiFacturing's first Open Call!

Read more about the questions of others that would like to apply for the Open Call!

Do you still have unanswered questions or doubts?

Ask Dr. Tamas Kiss, University of Westminster, in the Q&A session on the 17th September 2018

Register now on eventbrite!

Linz Center of Mechatronics and cloudSME present SyMSpace at NAFEMS European Conference Multiphysics Simulation 2018

The cloud-based simulation and optimization environment SyMSpace (software of LCM & cloud portal by cloudSME) will be presented in Budapest, Hungary.

The presentation will focus on the functionalities of the cloud portal and SyMSpace as well as the benefits for tomorrow's technologies. Read more...

Thank you for your interest!

If there is anything you want to comment, ask or collaborate with us, do not hestitste to contact us!

Your cloudSME Team

If you don't want to receive any more messages (to: {EMAIL}) any longer, you can unsubscribe free of charge at any time.

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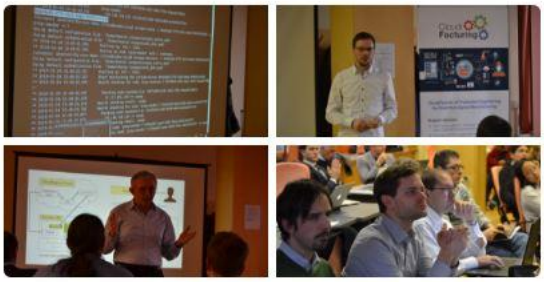
APPENDIX 6 - NEWSLETTER NO.3 (2)

Top media Tweet earned 1,905 impressions

Second day #CodeCamp in #Budapest - Hands on Sessions with #occopus and different #Workflow #Tools.
#H2020 #HPC #automation #Cloud #SaaS #simulation #Engineering #Manufacturing #innovation
pic.twitter.com/FE5qmTkpYS



5 6

Top media Tweet earned 664 impressions

#HMI18 - glad to be here!
Visit us and get more information about the #DigitalMarketplace & #OpenCall - #application period is coming soon!
#GetReady #CloudComputing @hannover_messe @Fraunhofer_IGD @EU_Cloudflow @cloudSMEproject @EU_Commission @DigIndEU
pic.twitter.com/hgvv82hADs

13 16

Top media Tweet earned 3,190 impressions

Pre-Announcement for the 1st #OpenCall of the #H2020 Project CloudiFacturing! Get ready! -> bit.ly/2q4Np2B
@I4MS_Europe @NAFEMS @FoF_EU #Horizon2020 #CloudComputing #HPC #madeinEurope #innovation #research #DigitalMarketPlace
pic.twitter.com/cJ7cqsQttp

12 15

Top media Tweet earned 2,035 impressions

#CodeCamp impressions at @Inn_Somnia - 25 Companies out of the Region of #Valencia took part - from #SMEs up to representants from professional #organization of Federacion Empresiarial Metalurgica Valencia.
Read more: bit.ly/2l7raWL
pic.twitter.com/cXuyDBrWxF

8 12

APPENDIX 7 - TOP MEDIA TWEETS (1)

Top media Tweet earned 3,224 impressions

Already working on your proposal for our **#OpenCall**? **#application** is open until 30th sepember!

Join the **#QA** session with Dr. Tamas Kiss (**@UniWestminster**) - tomorrow @ 12pm CEST - register now! >>> ow.ly/HzeJ30kBsNR

#Innovation #PredictiveAnalytics #IoT #SMEs #Cloud #I4MS pic.twitter.com/XzNVPDXBxm

6 11

Top media Tweet earned 48 impressions

Already working on your proposal for our **#OpenCall**? **#application** is open until 30th sepember!

Join the **#QA** session with Dr. Tamas Kiss (**@UniWestminster**) - tomorrow @ 12pm CEST - register now! >>> ow.ly/HzeJ30kBsNR

#Innovation #PredictiveAnalytics #IoT #SMEs #Cloud #I4MS pic.twitter.com/XzNVPDXBxm

6 11

APPENDIX 8 - TOP MEDIA TWEETS (2)

Top Tweet earned 472 impressions

Great kick-off meeting with 33 partners for the **#DigitalMarketplace** hosted by **@Fraunhofer_IGD #H2020**
profile logo will follow soon! **#tbd**
pic.twitter.com/QnmvCabG0u

2 4

Top mention earned 15 engagements

cloudSME UG
@cloudSMEproject · Oct 20

Kick-Off meeting of **@CloudiFacturing** in Darmstadt, hosted by **@Fraunhofer_IGD #hpc #CloudComputing #H2020 #MultiCloudPlatform** for **#SME**
twitter.com/nabladot/statu…

6 4

View Tweet

Top Tweet earned 77 impressions

press release of **@UniWestminster** -
bit.ly/2gBqBSK
#CloudComputing #InvestEUresearch #HPC #DigitalMarketplace #Manufacturing #SMEs

1 3

View Tweet activity View all Tweet activity

Top mention earned 11 engagements

cloudSME UG
@cloudSMEproject · Nov 15

#InnovationAction @CloudiFacturing's Mission ? -> bit.ly/2msRPAO
-
#H2020 #CloudComputing #HPConDemand #DigitalMarketplace #CloudiFacturing

6 5

APPENDIX 9 - TOP TWEET AND MENTION (1)

Top Tweet earned 3,023 impressions

Today **@viczeg** from **@innominegroup** is prersenting at the **#Digital #Innovation** Hub Workgroup Meeting to advance the digitisation of the European Industry in **#Brussels** .
#H2020 #InvestEU #CloudComputing #Workflow #Automation #HPConDemand #SaaS #Digital #Engineering #Manufacturing

5 8

View Tweet activity View all Tweet activity

Top mention earned 16 engagements

cloudSME UG
@cloudSMEproject · Jan 22

#Digital #Innovation #Hubs WG meeting in **#Brussels**. **@CloudiFacturing** is looking forward to the **#opencall** in **#summer**. Bring your **#software** into the **#cloud** and use **#HPConDemand**!
#businessopportunity #CloudComputing #workflow #Automation #SaaS #Engineering #InvestEU #Industry40
twitter.com/CloudiFacturin…

8 9

Top Tweet earned 36.8K impressions

Let us take the **#future** to the **#NextLevel** - **#meeting** in **#Valencia** at **@Inn_Somnia**

#OpenCall from 1th July until 30th September - be a **#GameChanger** and **#applynow** with your **#SME**

#EUandME #funding #IoT #innovation #company #business #manufacturing #engineer #predictive #Analytics

9 12

View Tweet activity View all Tweet activity

Top mention earned 73 engagements

innomine
@innominegroup · Jun 12

@CloudiFacturing consortium meeting in Valencia at innsomnia.es **#H2020 #InnovationAction #OpenCall**
goo.gl/1mKAtf
Looking for **#SME** - **#production #engineering #predictive #manufacturing #future #EUandME #innovation #IoT #companies #futureofwork** pic.twitter.com/6HLGixyuWf


4 7

View Tweet

Top Follower followed by 1,257 people

Francisco Estevan
@Fran_Estevan FOLLOWS YOU

APPENDIX 10 - TOP TWEET AND MENTION (2)

Top Tweet earned 407 impressions

three-day **#CodeCamp** already started with the presentation and explanation of **#technology** at **@SZTAKI_LPDS** in **#Budapest**. Keep on track! **#InnovationAction #shareKnowledge** & **#createKnowledge #digitalmarketplace #InvestEU #H2020 #CloudComputing #HPConDemand #Automation #Workflow** pic.twitter.com/MxtbnrqPJj

3 3

Top mention earned 1 engagements

cloudSME UG
@cloudSMEproject · Jan 23

@andreas1608 represents us at the **#CodeCamp** of **@CloudiFacturing**, hosted by **@SZTAKI_LPDS** in **#Budapest**. **#opencall** in **#july** -> your **#businessopportunity**! **#cloudify** your **#software** and use **#HPConDemand**. **#futureofwork #H2020 #InnovationAction #Industry40 #SaaS #opensource** twitter.com/CloudiFacturin…

1 3

View Tweet

Top Tweet earned 1,042 impressions

#Workflow #automation for seamless **#Production** - **#opencall** is coming - keep on track & subscribe to our newsletter! bit.ly/2FP6PRY

#H2020 #InvestEUresearch #DigitalMarketplace twitter.com/nabladot/statu…

8 9

View Tweet activity View all Tweet activity

Top mention earned 46 engagements

nablaDot
@nabladot · Mar 1

Checking the progress of our **@CloudiFacturing** project with **@EndeFEng** "**#Optimizing #solar #panel #production**" ℹ cloudifacturing.eu pic.twitter.com/lXordssR0S

4 4

View Tweet

Top Follower followed by 1,967 people

Fraunhofer IGD
@Fraunhofer_IGD FOLLOWS YOU

Hier twittert das PR-Team des Fraunhofer IGD, der international führenden Einrichtung für angewandtes Visual Computing.

APPENDIX 11 - TOP TWEET AND MENTION (3)

Top Tweet earned 3,385 impressions

Learn how to receive **#funding** for developing your **#SME** - Come to the Cascade Funding **#workshop** **@I4MS_Europe** & **@SAE_EU** **@hannover_messe** - Hall 6 Booth G46 on the 24th & 25th - Start 10:30am **@EU_Commission** **@Stam_Tech** **@Inn_Somnia** **@DigIndEU** **#H2020** **#HMI2018** bit.ly/2HiptmW pic.twitter.com/C4LQzOaorw

9 13

View Tweet activity View all Tweet activity

Top Tweet earned 2,276 impressions

Second **#Technical** meeting at **@SINTEF** in **#Oslo** working for the **#digitalmarketplace** - preparation for the next **#codecamp** in **#Valencia**

#CloudComputing **#HPC** **#H2020** **#I4MS** pic.twitter.com/uuAmlrQ3mH

7 8

View Tweet activity View all Tweet activity

Top mention earned 80 engagements

Liza Ocklenburg
@liz_ock · Apr 26

The **#cloudSMEteam** **@hannover_messe** on the Booth of the **@EU_Commission** supporting the **#InnovationActions** of **#H2020** **@ProjectCOLA** & **@CloudiFacturing** - my personal **#HannoverMesseWow** moment.

#bestteam **@cloudSMEproject** **#HPConDemand** **#madeinEurope** **#clusterondemand** **#softwaresolutions** pic.twitter.com/RgGqEy84g5

12 17

Top mention earned 15 engagements

Fraunhofer IGD
@Fraunhofer_IGD · May 29

Be prepared: The first **#OpenCall** for **@CloudiFacturing** starts at July 7th. Before it starts you can vist us at the **#ISC18** **@ISChpc** and ask f.e. **@clesgo** for the facts you need or check cloudifacturing.eu/open-calls/

2 2

View Tweet

Top media Tweet earned 664 imp...

#HMI18 - glad to ə here!
Visit us and get more information about the **#DigitalMarketplace** & **#OpenCall** - **#application** period is coming soon!

APPENDIX 12 - TOP TWEET AND MENTION (4)

Jul 2018 • 31 days

TWEET HIGHLIGHTS

Top Tweet earned 6,346 impressions

73 days left for **#OpenCall #application**!
Missed **#webinar** how to apply successful?
Have a look -> bit.ly/2Nq27Kx

#H2020 #CloudComputing #PredictiveAnalytics #futuremakers #Development #OpenData #bigsmalldata #companies #engineer #Manufacturing #Industry40 #GoDigital #SME
pic.twitter.com/qDBZHQRs6m

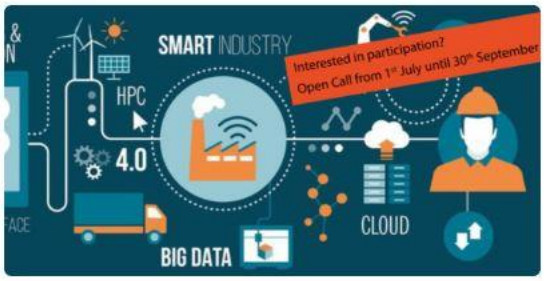
6 9

View Tweet activity View all Tweet activity

Top mention earned 30 engagements

I4MS
@I4MS_Europe · Jul 1

EU Project **@CloudiFacturing** launches today its first **#opencall**!! Selected projects can earn up to €100K in **#funding**. Apply before 30th of September 2018!!!
Find out more: ow.ly/HzeJ30kBsNR
#I4MS #funding #cloudification #Innovation #SMEs
pic.twitter.com/VSoCpikeY1



9 8

View Tweet

APPENDIX 13 - TOP TWEET AND MENTION (5)

Top Tweet earned 3,003 impressions

59 Days to appy for the #OpenCall! #Manufacturing #SMEs are empowered to #compute and solve #problems that cannot be tackled without #Cloud and #HPC #technology, making them competitive by #reducing #development times for #innovative #products with better #performance.

@EU_H2020

1 2 3

View Tweet activity View all Tweet activity

Top Follower followed by 444 people

Soumya Kanti Datta
@skdatta2010 FOLLOWS YOU

Top mention earned 7 engagements

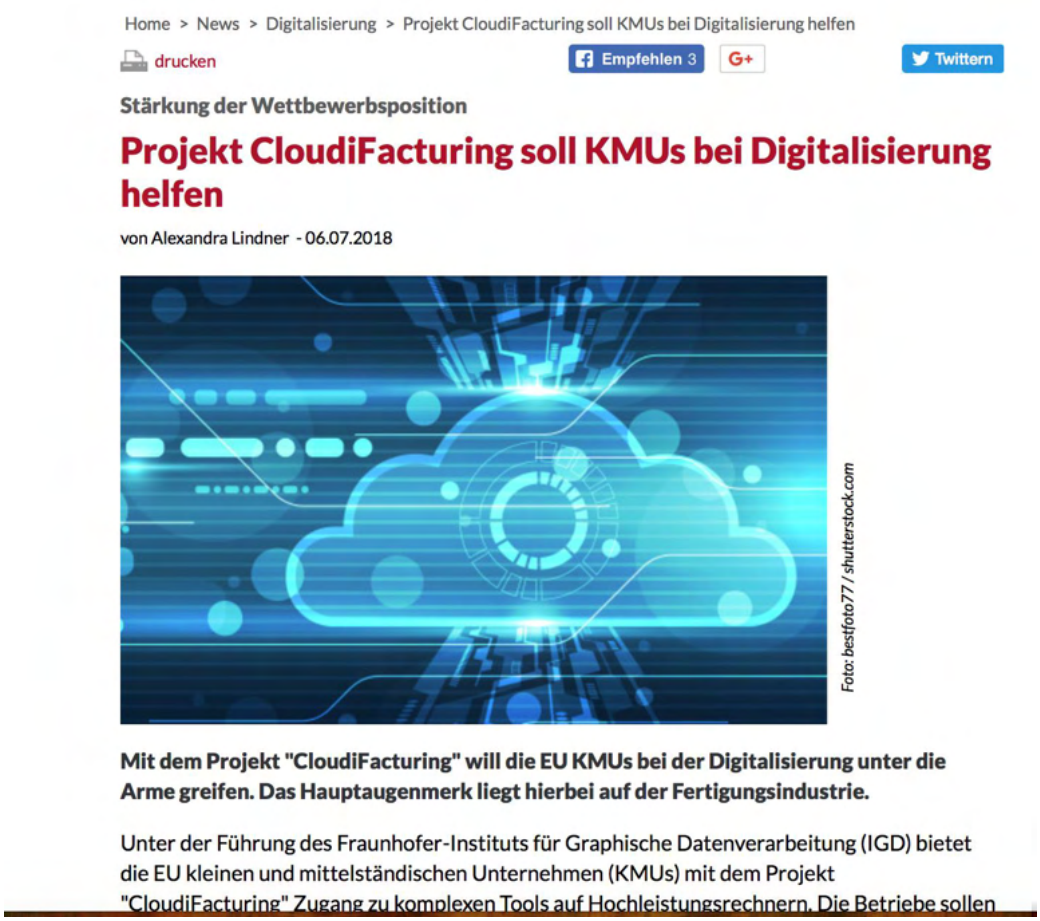
I4MS
@I4MS_Europe · Jul 31

Apply for the #I4MS Disruptor Awards!! 💪 💪 Deadline: 5th of September! ➞ bit.ly/2smDhmN @FortissimoPro, @EU_Cloudflow, #CloudSMEs, #LASHARE, #INTEFIX, #EuRoC, #Appolo, @ReconCell, @BEinCPPS, #Fortissimo, @H2020_HORSE, #MIDIH, @CloudiFacturing, @L4MS_EU #AMable pic.twitter.com/VxEFZe6Im4

6 8

View Tweet

APPENDIX 14 - TOP TWEET AND MENTION (6)



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drucken Empfehlen 3 G+ Twittern

Stärkung der Wettbewerbsposition

Projekt CloudiFacturing soll KMUs bei Digitalisierung helfen

von Alexandra Lindner - 06.07.2018

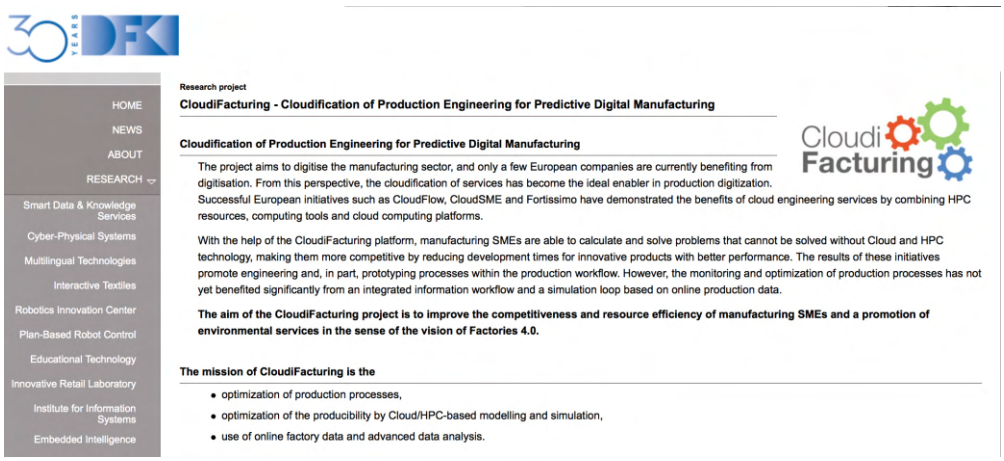
Foto: bestfoto77 / shutterstock.com

Mit dem Projekt "CloudiFacturing" will die EU KMUs bei der Digitalisierung unter die Arme greifen. Das Hauptaugenmerk liegt hierbei auf der Fertigungsindustrie.

Unter der Führung des Fraunhofer-Instituts für Graphische Datenverarbeitung (IGD) bietet die EU kleinen und mittelständischen Unternehmen (KMUs) mit dem Projekt "CloudiFacturing" Zugang zu komplexen Tools auf Hochleistungsrechnern. Die Betriebe sollen

APPENDIX 15 - CLOUDIFACTURING PRESS RELEASES

Figure A.1: Source: https://www.com-magazin.de/news/digitalisierung/projekt-cloudifacturing-kmus-digitalisierung-helfen-1551601.html



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Research project

CloudiFacturing - Cloudification of Production Engineering for Predictive Digital Manufacturing

Cloudification of Production Engineering for Predictive Digital Manufacturing

The project aims to digitise the manufacturing sector, and only a few European companies are currently benefiting from digitisation. From this perspective, the cloudification of services has become the ideal enabler in production digitization. Successful European initiatives such as CloudFlow, CloudSME and Fortissimo have demonstrated the benefits of cloud engineering services by combining HPC resources, computing tools and cloud computing platforms.

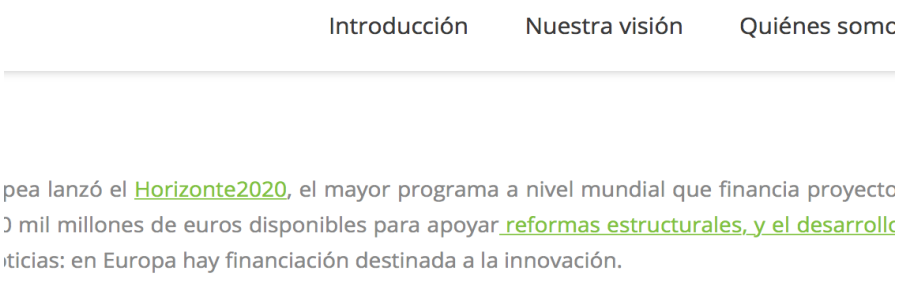
With the help of the CloudiFacturing platform, manufacturing SMEs are able to calculate and solve problems that cannot be solved without Cloud and HPC technology, making them more competitive by reducing development times for innovative products with better performance. The results of these initiatives promote engineering and, in part, prototyping processes within the production workflow. However, the monitoring and optimization of production processes has not yet benefited significantly from an integrated information workflow and a simulation loop based on online production data.

The aim of the CloudiFacturing project is to improve the competitiveness and resource efficiency of manufacturing SMEs and a promotion of environmental services in the sense of the vision of Factories 4.0.

The mission of CloudiFacturing is the

- optimization of production processes,
- optimization of the producibility by Cloud/HPC-based modelling and simulation,
- use of online factory data and advanced data analysis.

APPENDIX 16 – DFKI - PROJECT PARTNERS WEBSITE PUBLICATIONS


Introducción Nuestra visión Quiénes somc

pea lanzó el Horizonte2020, el mayor programa a nivel mundial que financia proyecto
) mil millones de euros disponibles para apoyar reformas estructurales, y el desarrollc
ıticias: en Europa hay financiación destinada a la innovación.

APPENDIX 17 – INNOMINE - PROJECT PARTNERS WEBSITE PUBLICATIONS


INNSOMNIA

Inicio Proyectos Nosotros Instalaciones Eventos Bankia Fintech

10 MAY

La UE designa a Innsomnia como Digital Hub en España para adjudicar ayudas de 100.000 euros por empresa

- El proyecto Cloudifactoring, puesto en marcha por Innsomnia en colaboración con la alemana Fraunhofero y la Universidad de Westminster, es uno de los cuatroaprobados en toda Europa para asignar ayudas a fondo perdido.

- Está orientado a la digitalización de las pymes manufactureras y conectará a las firmas españolas con las de Alemania, Italia, Hungría y República Checa.

- Innsomnia presentará su proyecto este jueves en el lanzamiento de su programa de Inmersión Digital Empresarial dirigido a digitalizar a un centenar de empresas que tendrán acceso hasta 40 millones de euros en financiación de Bankia y el IVF.

La empresa valenciana Innsomnia Accelerator ha sido designada por la Unión Europea como Digital Hub en España para cloud&factoring. La elección es fruto de la participación de la firma española en el consorcio europeo Cloudifactoring coordinado por Fraunhofer, el mayor centro de I+D+i de Alemania, y en el que también participan otras 15 entidades de socios de la UE como la Universidad de Westminster, la Universidad de Nottingham o la Universidad de Bolonia. Cloudifactoring es uno de los cuatro proyectos aprobados en toda Europa dentro del programa Horizonte 2020 Fábricas del Futuro: Innovación TIC para pymes manufactureras.

El consorcio en el que participa Innsomnia creará una red de Hubs de Innovación Digital (DIH) que conectará a las empresas españolas con DIHs de Alemania, Italia, Hungría y República Checa y trabajará para mejorar la digitalización del sector manufacturero, en especial las pymes.

APPENDIX 18 - INNSOMNIA - PROJECT PARTNERS WEBSITE PUBLICATIONS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Empresas › Alimentación Energía Finanzas Construcción Sanidad Telecos Transporte

Empresas y finanzas

El programa CloudiFacturing distribuirá 735.000 euros a la industria europea

4/07/2018 - 12:40

Como parte del proyecto de Fábricas del Futuro (FoF), que participa en la iniciativa de innovación para pymes manufactureras I4MS (Innovation for Manufacturing SMEs), y con el apoyo del programa de investigación e innovación Horizon 2020 de la Unión Europea, CloudiFacturing lanzará su primera convocatoria abierta en la que ofrecerá apoyo económico para el

APPENDIX 19 – ELECONOMISTE.ES - MEDIA COVERAGE

APPENDIX 20 – ANSA ECONOMIA - MEDIA COVERAGE

APPENDIX 21 – ITESPRESSO.FR - MEDIA COVERAGE

Cloudi Facturing

Cloudification of Production Engineering for Predictive Digital Manufacturing

CloudiFacturing - Cloudification of Production Engineering for Predictive Digital Manufacturing - is a **European Innovation Action (IA)** in the framework of Factories of the Future (FoF) with the mission of optimizing production processes and producibility, using Cloud/ HPC-based modelling and simulation, and leveraging online factory data with advanced data analytics; thus, contributing to the competitiveness and resource efficiency of manufacturing companies, especially SMEs.

To pursue this mission, computationally demanding production engineering and simulation as well as data analytics tools are to be provided as Cloud services to ease accessibility and make their use more affordable.

Our vision - to build a Marketplace for advanced ICT solutions and workflows

The core partners of CloudFlow and CloudSME are joining forces to leverage factory data with cloud-based engineering tools:

- paving the way toward manufacturing analytics,
- enriching the manufacturing engineering process with on-line data, and
- simulating and optimizing producibility and production processes with the vision to support it in real-time.

The consolidated platform between CloudFlow and CloudSME will be extended with capabilities to process factory data and enriched by additional manufacturing process simulation tools. It is going to be accessed through a central interface, enabling the stakeholders to interact, and collaborate.

The protection of stakeholder's data is going to be safeguarded with a proven security and privacy framework. In addition to the technological aspects, the start-ups founded by CloudFlow (desgo) and CloudSME (cloudSME UG) are establishing a strategic alliance to adopt a common sustainable commercial model for the holistic solution. Three waves of application experiments are going to validate the applicability of the results, by providing novel requirements and demanding use and business cases.

I4MS www.i4ms.eu

The project **CloudFacturing** receives funding from the European Union's Horizon 2020 research and innovation programme (Grant No. 768892).

Success Story & experiment example:

Optimizing Heat Exchanger Design of Biomass Boilers through CFD Simulation

Partners

BioCurve, S.L. (End user, Spain),
nablaDot S.L. (ISV, Spain),
Universidad de Zaragoza (HPC provider, Spain)

Experiment Description

The design of biomass boilers is currently based on the experience of the Biocurve technical staff. The challenge of this experiment has been the introduction of computational fluid dynamics (CFD) tools, integrated in a cloud environment.

Technical Impact

- Development of a virtual model of the current 25 kW boiler model in which the number of pipes has been reduced from 10 to 3.
- The reduction of the number of pipes in this model represents a saving of 18 kg of stainless steel (a 32 percent of the original weight of the pipes of this boiler). The total cost saved estimated for this model is around € 400 per unit.
- The volume of the 25 kW boiler model has been reduced by 30 percent. This reduction saves material costs and allows the installation in a greater number of houses.

Economic Impact

- The Cloud application allows Biocurve to increase the number of new models developed per year. The reduction of the size of the boilers due to a better design can save around 15 percent of the total costs of a boiler.
- Addressing a customer segment defined by the domestic and commercial (tertiary) heating sector, in a three-year horizon Biocurve estimates to face a market around 600,000 potential buyers, with a potential share leading to incomes of € 2.55 mio.
- Between 3 to 6 new jobs would be created if this volume of sales will be reached.
- 5 years from now, nablaDot is expected that 40-50 percent of the turnover (around € 150,000) will be related to ad-hoc development and supporting of CFD tools used in the cloud. 3 new engineers are expected to be hired thanks to this line of business.

GERMAN DESIGN AWARD WINNER 2018

Success Story & experiment example:

Optimizing design and production of electric drives

Partners

Hanning Elektro-Werke (Germany),
Linz Center of Mechatronics (Austria) and the
German Research Center for Artificial Intelligence (DFKI).

Experiment Description

In this Experiment LCM sets up simulation models for prototype electric motors including electromagnetic, thermal, mechanic, and other aspects using LCM's system modeler SyMSpace, which is running in a cloud environment. SyMSpace then finds the best-suited motor configuration using its genetic multi-objective optimizer. At the end of this process, the necessary production data is automatically generated from the model.

Technical Impact

- Using SyMSpace in the cloud environment provides the user with sufficient calculation power even for extensive models and deep optimization runs (up to 15.000 individual simulation cycles) – on demand and on pay-per-use basis.
- Due to the streamlined process without human data handover, Hanning can process a prototype request from design to optimization to production data in very short time. The target is to get the finished prototype within 5 working days.
- The challenge for the ISV is to improve the simulation models for interfacing with the manufacturing processes including the external suppliers of the prototype materials.

Economic Impact

- Greatly improve customer satisfaction by being able to provide a prototype from the discussed design in extremely short period of time,
- bringing down the design to production time in order to decrease development costs and time by up to 80%.

APPENDIX 22 - CLOUDIFACTURING BROCHURE

Cloudi Facturing

MODELING & SIMULATION
SMART INDUSTRY
HPC
4.0
AUTOMATION
USER INTERFACE
BIG DATA
CLOUD

Soluciones en la Nube y Computación de Alto Rendimiento para Digitalizar a las Pyme Manufactureras

Objetivos del proyecto:

→ Optimizar los procesos de producción y producibilidad a través de tecnología de modelado y simulación Cloud/ HPC.

→ Aprovechar el uso de datos de fabricación online y analítica de datos avanzada.

CloudiFacturing pone a tu alcance la tecnología y recursos necesarios para ayudarte a afrontar los retos de la Industria 4.0.

¿Interesado en participar?
La Convocatoria comenzará el 1°. de Julio del 2018.

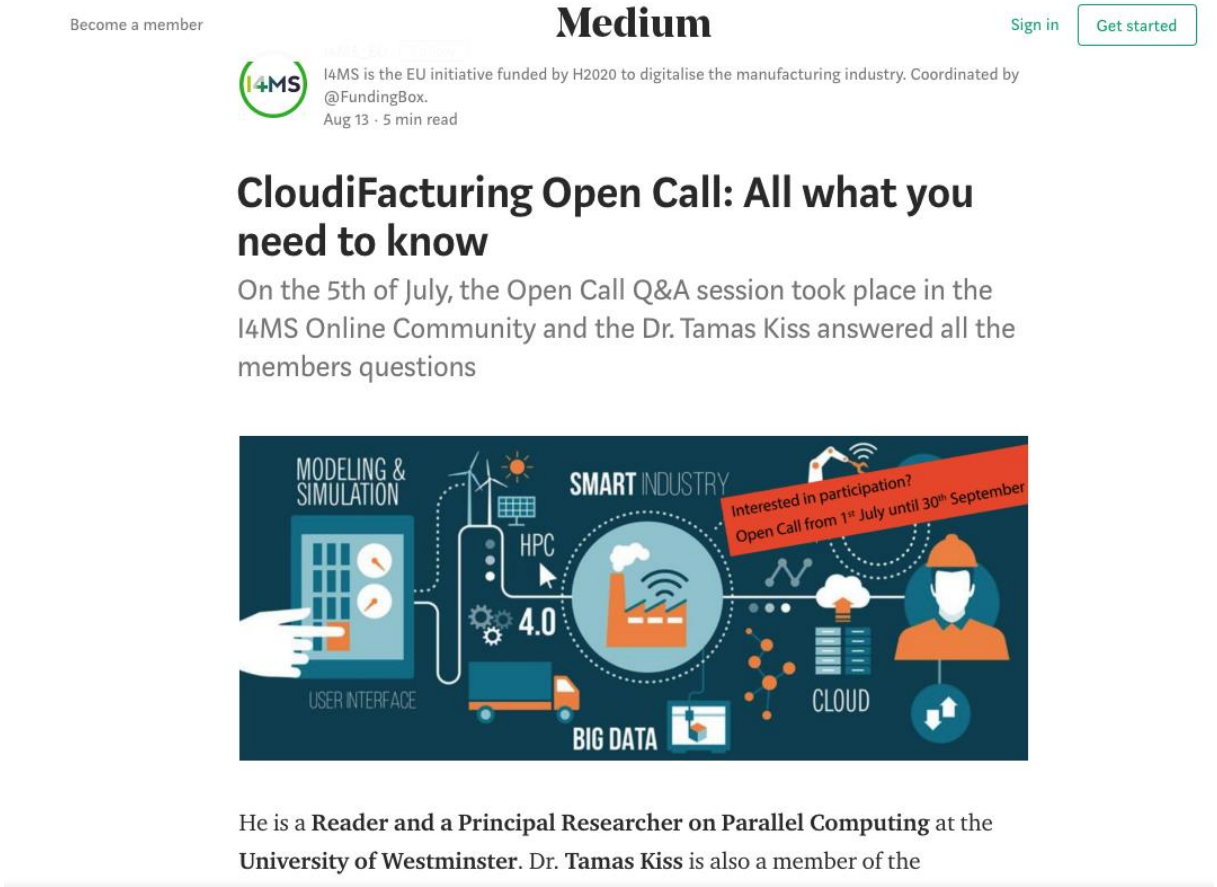
www.CloudiFacturing.eu
@CloudiFacturing

I4MS www.i4ms.eu

APPENDIX 23 - ROLL UP IN SPANISH

APPENDIX 24 - BANNER CLOUDIFACTURING FIRST OPEN CALL WEBINAR

APPENDIX 25 - Q&A SESSION FOR CLOUDIFACTURING AND I4MS WEBSITE



Become a member

Medium

Sign in | Get started

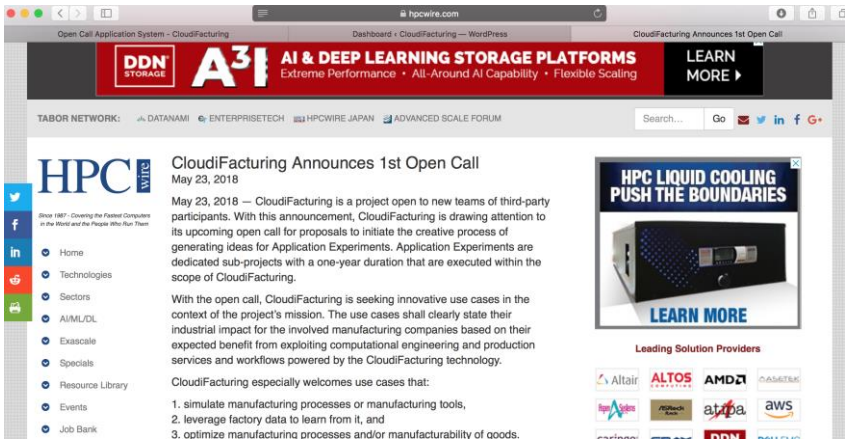
I4MS is the EU initiative funded by H2020 to digitalise the manufacturing industry. Coordinated by @FundingBox.
Aug 13 · 5 min read

CloudiFacturing Open Call: All what you need to know

On the 5th of July, the Open Call Q&A session took place in the I4MS Online Community and the Dr. Tamas Kiss answered all the members questions

He is a **Reader and a Principal Researcher on Parallel Computing** at the **University of Westminster**. Dr. **Tamas Kiss** is also a member of the

APPENDIX 26 - I4MS ARTICLE "Q&A - ALL WHAT YOU NEED TO KNOW ABOUT CLOUDIFACTURING"



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CloudiFacturing Announces 1st Open Call

May 23, 2018

May 23, 2018 — CloudiFacturing is a project open to new teams of third-party participants. With this announcement, CloudiFacturing is drawing attention to its upcoming open call for proposals to initiate the creative process of generating ideas for Application Experiments. Application Experiments are dedicated sub-projects with a one-year duration that are executed within the scope of CloudiFacturing.

With the open call, CloudiFacturing is seeking innovative use cases in the context of the project's mission. The use cases shall clearly state their industrial impact for the involved manufacturing companies based on their expected benefit from exploiting computational engineering and production services and workflows powered by the CloudiFacturing technology.

CloudiFacturing especially welcomes use cases that:

1. simulate manufacturing processes or manufacturing tools,
2. leverage factory data to learn from it, and
3. optimize manufacturing processes and/or manufacturability of goods.

HPC LIQUID COOLING PUSH THE BOUNDARIES
LEARN MORE

Leading Solution Providers

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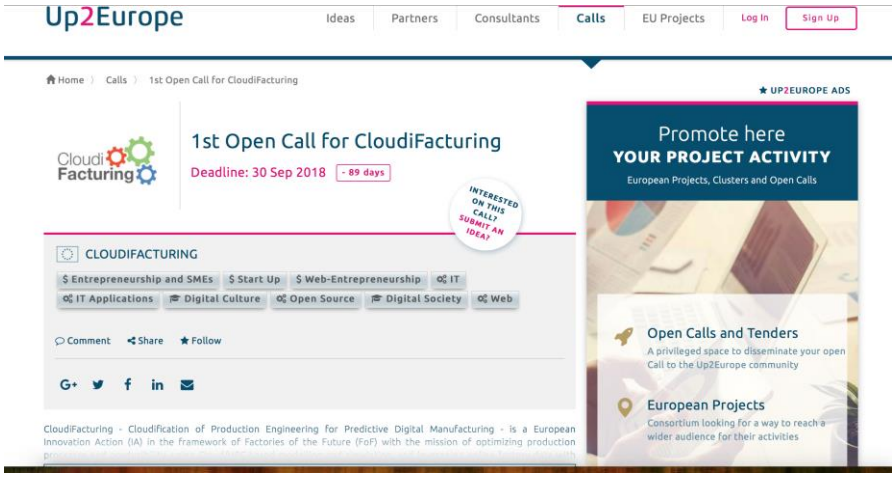
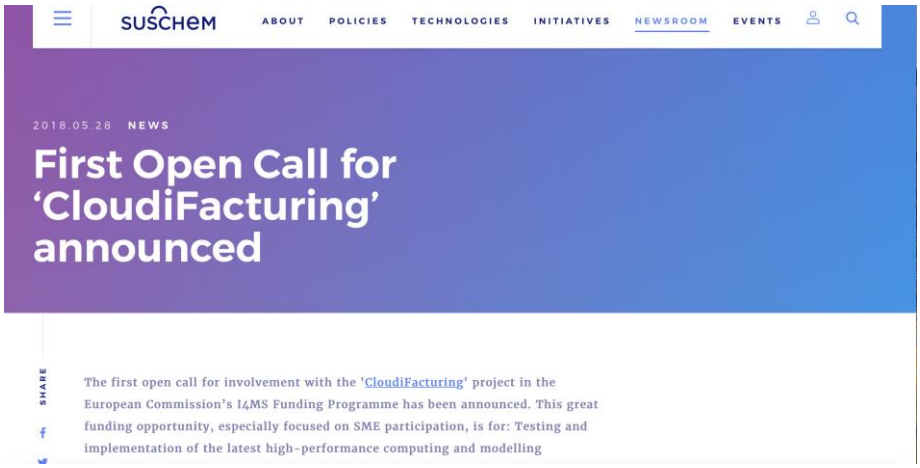
APPENDIX 27 - OPEN CALL ON HPCWIRE

APPENDIX 28 - OPEN CALL ON CLOUDCOMPUTING INSIDER (VOGELMEDIA)

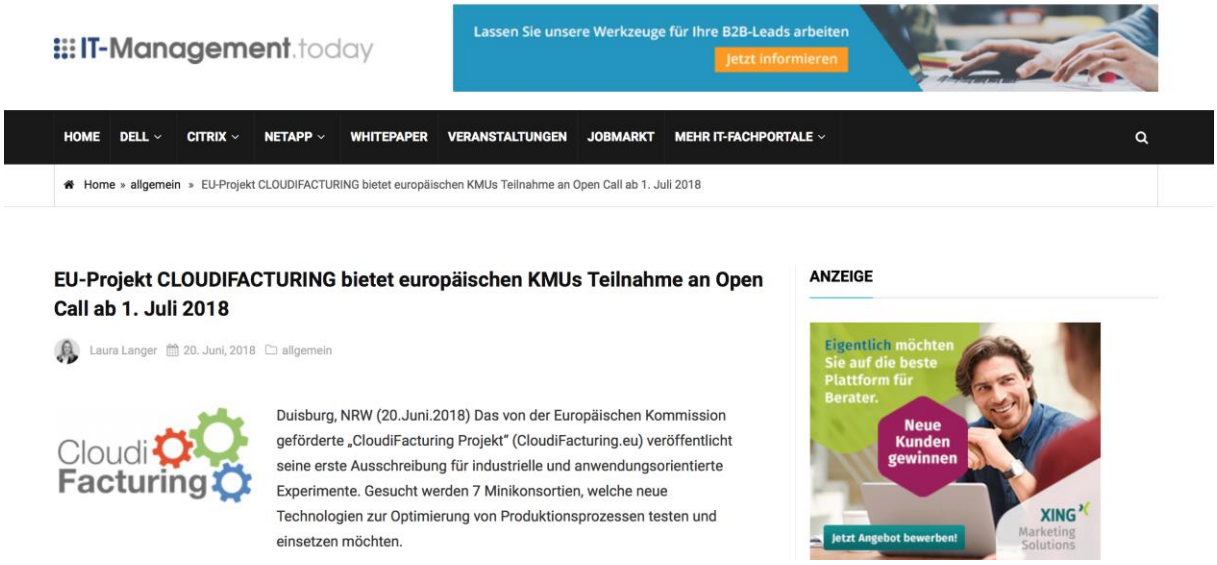
APPENDIX 29 - OPEN CALL ON 2001.COM



APPENDIX 30 - OPEN CALL ON ECO - ASSOCIATION OF THE INTERNET INDUSTRY



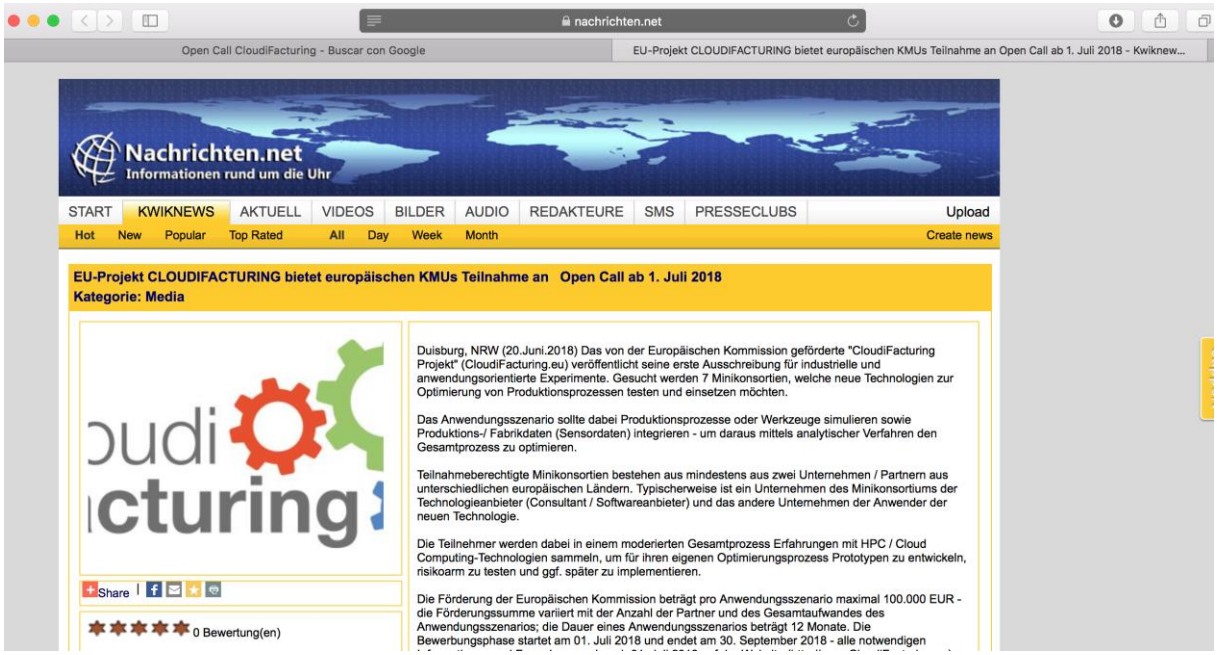
APPENDIX 31 - OPEN CALL ON SUSCHEM



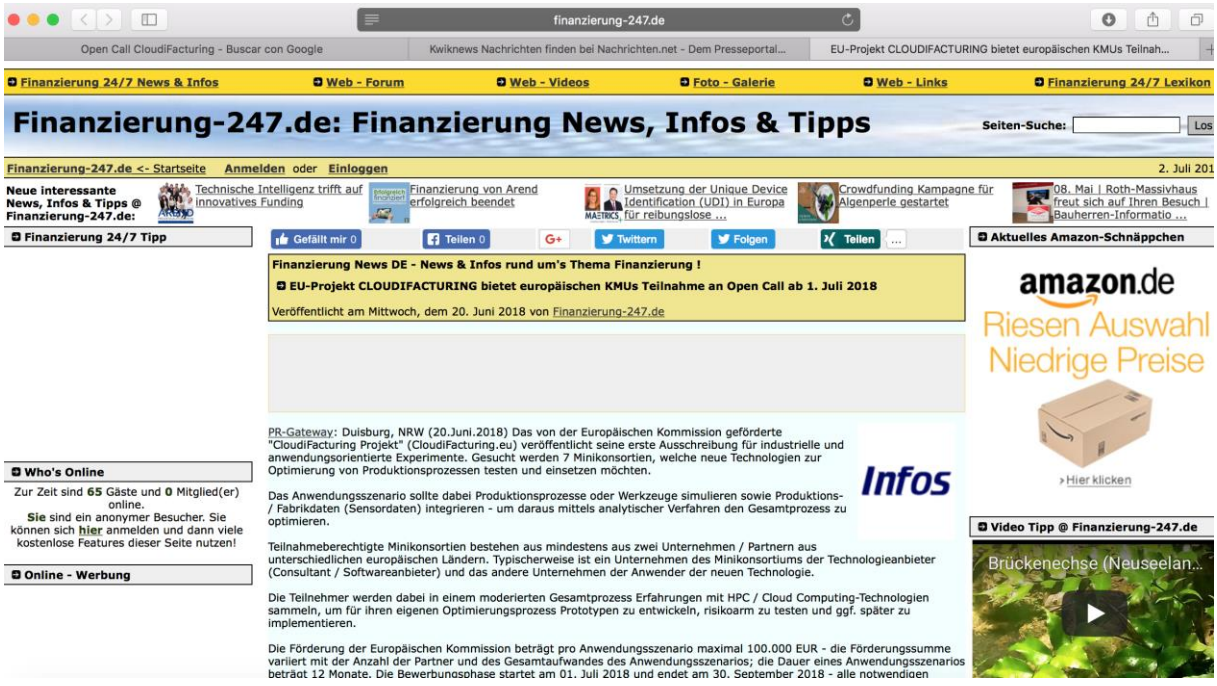
APPENDIX 32 - OPEN CALL ON IT-MANAGEMENT.TODAY

APPENDIX 33 - OPEN CALL ON NEWS8.DE

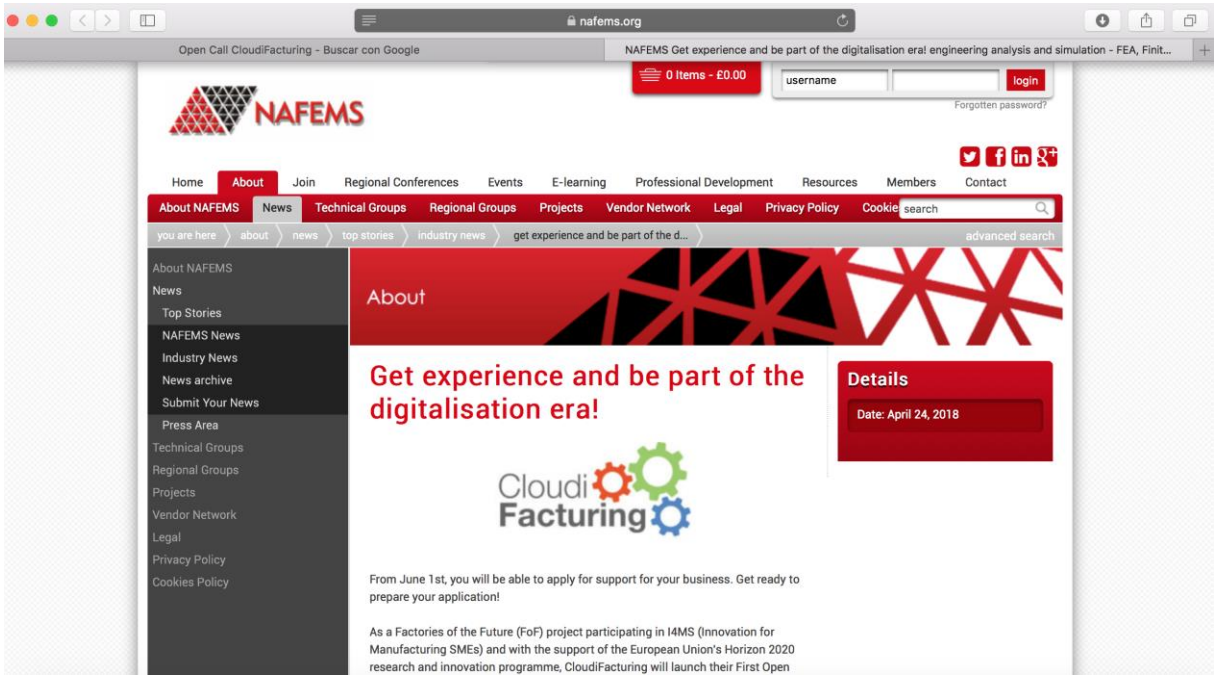
APPENDIX 34 - OPEN CALL ON IMPACT



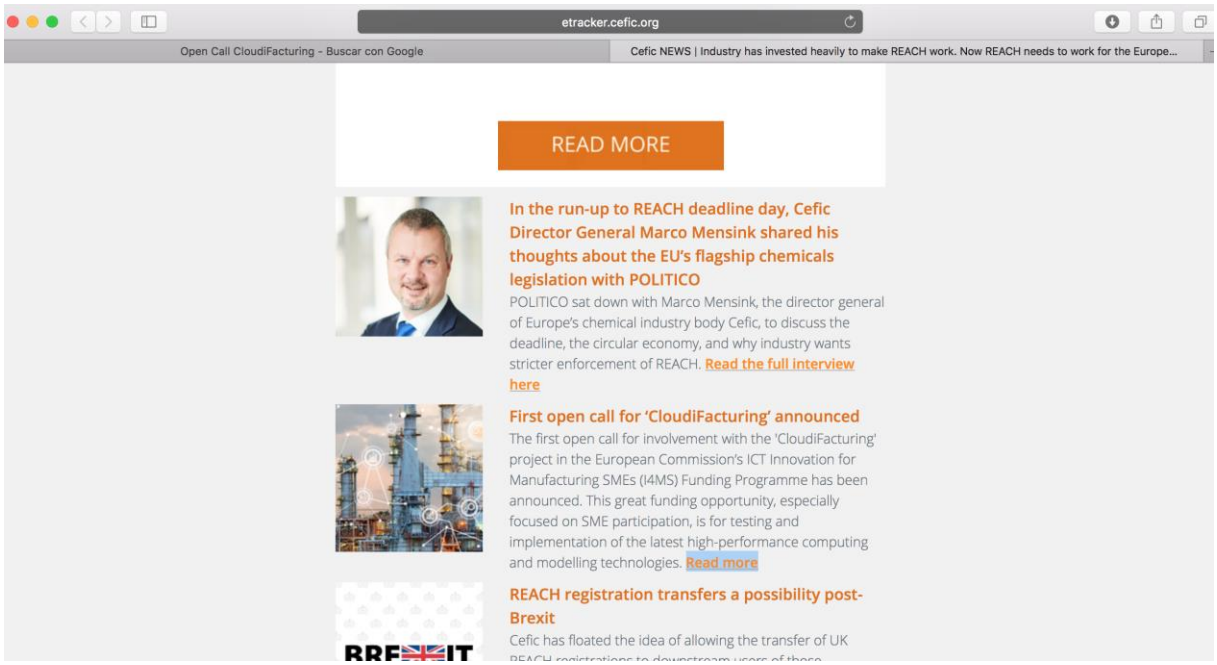
APPENDIX 35 - OPEN CALL ON NACHRICHTEN.NET



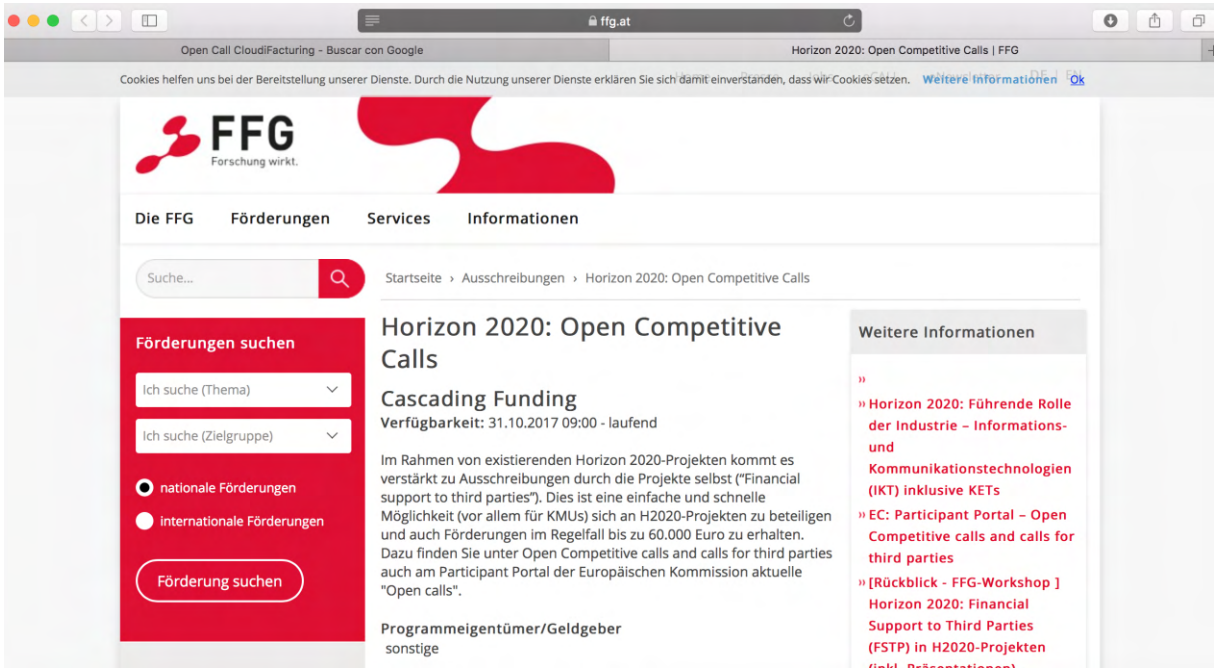
APPENDIX 36 - OPEN CALL ON FINANZIERUNG-247.DE



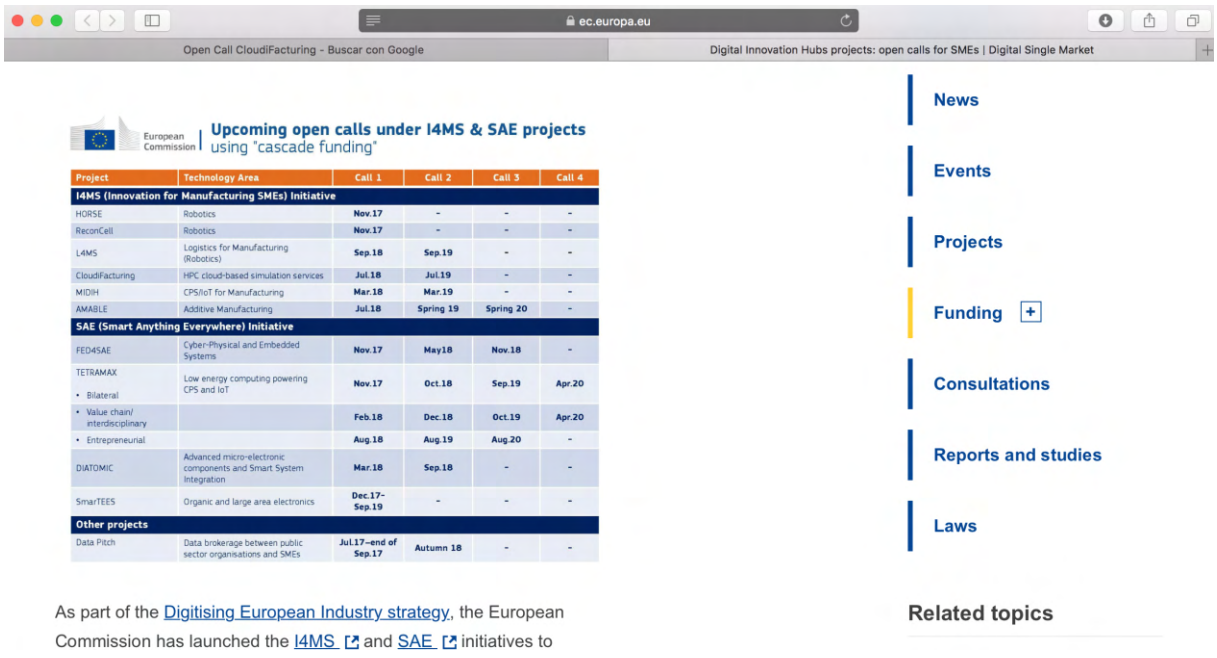
APPENDIX 37 - OPEN CALL ON NAFEMS WEBSITE



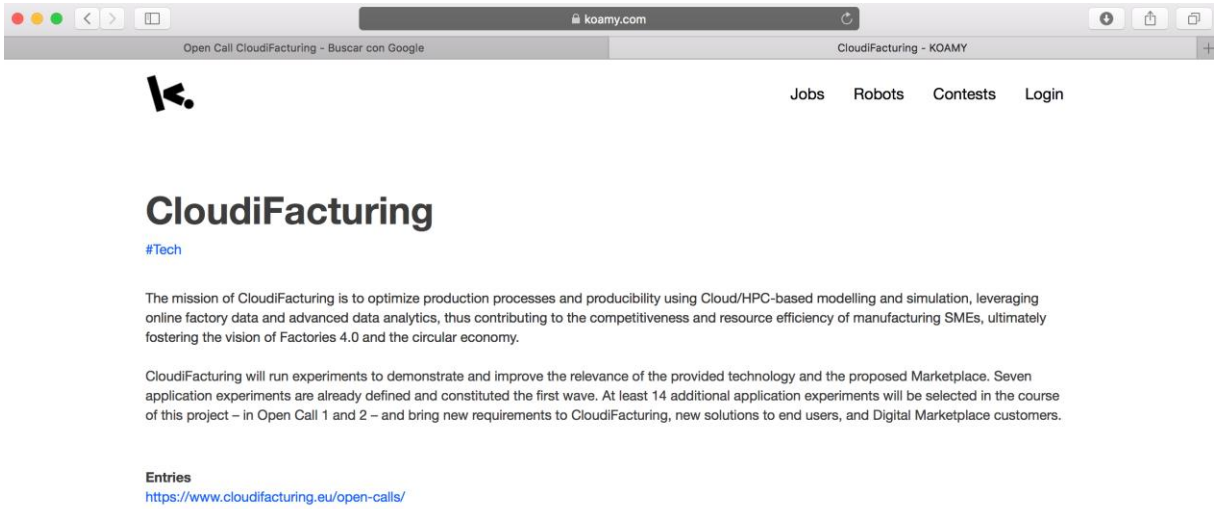
APPENDIX 38 - OPEN CALL ON ETRACKER



APPENDIX 39 - OPEN CALL ON FFG



APPENDIX 40 - OPEN CALL ON EC.EUROPA.EU



APPENDIX 41 - OPEN CALL ON KOAMY