



Smart4Europe2 Catalysing Digitisation throughout Europe

Deliverable 2.3

Best practices guidelines

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Project Acronym:	Smart4Europe2
Project Full Name:	Catalysing Digitisation throughout Europe
Grant Agreement No.:	872111
Programme	DT-ICT-01-2019
Instrument:	H2020 - Coordination and Support Action
Start date of project:	01/01/2020
Duration:	24 months
Work Package:	WP6
Associated Task:	Task(s) 2.1
Nature ¹	R
Dissemination Level ² :	CO
Version:	V1.0
Actual Submission Date :	01/11/2021 (M22)
Contractual Submission Date :	31/10/2021 (M22)
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¹ R=Report, DEC= Websites, patents filling, Ethics, ORDP: Open Research Data Pilot, etc., O=Other

² PU = Public, CO = Confidential, only for members of the consortium (including the Commission Services)

Acronyms Listed in Document	
AE	Application Experiment
DIH	Digital Innovation Hub
EC	European Commission
FSTP	Funding Supporting Third Parties
H2020	Horizon 2020
IA	Innovation Action
KPI	Key Performance Indicator
WP	Work Package
R&D	Research and Development
SAE	Smart Anything Everywhere

Version	Date	Changes made	by	Sent to	purpose
0.1	18.08.2021	Initial draft	Isabelle Dor (CEA) Jérôme Gavillet (CEA)	CEA, all	Draft
0.2	22.08.2021	Partner Inputs	H. Thompson (THK) M. Reimann (S2i)	CEA, all	Updates
0.3	25.08.2021	Partner Inputs	J. Koch (HS)	CEA, all	Updates
0.4	27.08.2021	Partner Inputs	Isabelle Dor (CEA) Jérôme Gavillet (CEA)	CEA, all	Updates
0.5	29.10.2021	Internal Review	S. Karmann (HS)	CEA	Review
0.6	01.11.2021	Final version	Isabelle Dor (CEA) Jérôme Gavillet (CEA)	all	For coordinator validation
1.0	01.11.2021	Finalisation	M. Reimann (S2i)	EC, all	Submission

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1 Executive Summary

It is a new experience the Digital Innovation Hubs (DIH) beneficiaries have been through with a quite large spectrum of Innovation Action (IA) projects variables and despite addressing all the same topic of the digital transition. In that sense, it has turned difficult to make a systematic comparison of individual experiences and draw conclusions and recommendations out of this. However, and due to certain conceptual and operational similarities across DIHs, lessons learnt could be exchanged that are presented in this deliverable. Main conclusions can be summarized as follows:

- IA consortia have shown their capability to communicate and disseminate widely and efficiently about the SAE ins & outs and engage third parties during the 7 years of the SAE program;
- Although implementing various but similar channels and messages across IAs, consortia have experienced a same difficulty to outreach and engage non-tech companies or Mid-cap companies;
- Exchanging services across IAs has proven not to be that straightforward because of the inherent complexity to deal with different DIH operational models, communities and timescales for the Open Calls;
- Digital ecosystems have been intensively activated inside IAs and across IAs, thanks to Smart4Europe2 actions. This has raised awareness and led to a shared and common understanding inside these ecosystems of the importance of the digital transition for Europe;
- There has been a proliferation of marketplaces created by Digital Innovation Hubs. A supra and single marketplace hosting all digital technologies and linking digital ecosystems in one place (hosted by the EC) lasting over one project duration would have certainly been an advantage;
- Evaluation & selection processes have taken various forms depending on DIHs approaches. This has encompassed different formats of Open Calls, templates for applications, evaluation schemes and boards (w/o external reviewers), timescales and other constraints specific to each IA. All DIH partners involved in evaluation & selection activities have learnt and acquired new competences that will be useful in the next programs.
- Similarly with the contracting and execution phases, experiences have been plural, and this is also a new and shared expertise that was created placing DIHs in the responsibility to manage funding supporting third parties (FSTP) fluxes efficiently while promoting a quite large number of different Application Experiments, driven by business ideas from the field. From an audience that hadn't been previously addressed in such a way, that are any SMEs or Mid-caps in Europe, whatever their acquaintance with the digital world.

2 Objective

The objective of task 2.3 was to promote the sharing of experience, collect lessons learnt and formulate recommendations and guidelines, upgrading the return of experience from Smart4Europe2 and enlarging the vision with the synergies with other initiatives.

3 Collaboration events

SAE Cluster and Collaboration Events with IAs were organised in order to promote the sharing of experience and information on major topics related to IAs' activity such as services, mentoring, financing, enhancing acquisition of digital skill, competencies, networking, connection with European DIHs and/or local authorities, etc.

Three full-day meetings were held during the first year (April 2nd, July 8th and October 26th 2020).

During the first meeting, SAE Initiatives visions and goals as well as the CSA support were presented and discussed. The EC gave a talk on their expectations and strategy for DIHs in Horizon Europe and Digital Europe. All running Innovation Actions presented themselves, as well as the sister initiatives I4MS and DIHNET, followed by very fruitful discussions and positive feedback from the participants.

Thursday, 2nd April 2020		12:00 – 13:00	Lunch
10:00 – 10:10	Welcome <i>Meike Reimann; Steinbeis2i GmbH</i>	13:00 – 14:30	New Innovation Actions (6 x 10 + 30mins discussion) focus on – concept – collaboration – open calls <i>BOWI; Sander van der Malen, CIVITTA</i> <i>DIGIFED; Isabelle Chartier; CEA</i> <i>DIH4CAP; Ricardo Goncalves; UNINNOVA</i> <i>HUBCAP; John Fitzgerald; Newcastle University</i> <i>SMART4ALL; Nikos Voros; University of Peloponnese</i> <i>SmartEEs2; Jérôme Gavillet; CEA</i>
10:10 – 10:45	Introduction – EC (Expectations, News HorizonEurope, Q&A) <i>Anne-Marie Sassen; EC</i>	14:30 – 15:00	Collaboration – Joint Dissemination – Synergies <i>Meike Reimann; S2i / Olivia Uguen; Blumorpho / I4MS Mayte Carracedo;</i> <i>fundingbox / DIHNET Maurits Butter; TNO; ALL</i>
10:45 – 11:00	Smart4Europe2 CSA <i>Meike Reimann; Steinbeis2i GmbH</i>	15:00 – 15:15	Coffee / Discussions
11:00 – 12:00	Running Innovation Actions (4 x 10mins + 20mins discussion) – focus on lessons learnt & synergies <i>DIATOMIC; Babis Ipektzdis, Intrasoft</i> <i>Fed4SAE; Isabelle Dor, CEA</i> <i>TETRAMAX; Rainer Leupers; RWTH Aachen</i> <i>SmartEEs; Jerome Gavillet; CEA</i>	15:15 – 15:45	Interactive Session / Discussion – Open Call Alignment ALL
12:00 – 13:00	Lunch	15:45 – 16:00	Closing Remarks <i>Meike Reimann; S2i</i>

Figure 1: SAE – 1st collaborative meeting – April 2nd, 2020 - Agenda

The second meeting went deeper into the lessons learnt preparing and/or conducting the Open Calls and the effects of the COVID-19 situation.

Time	Session	Moderator (S4E2) Inputs
10:00	Intro and Agenda	Meike Reimann
	Lessons learnt Focus on open calls and covid19	Meike Reimann All
10:30	Dissemination – joint activities and tools	Julia Koch / Nikos Voros (Smart4All) /All
11:00	Sustainability	Olivia Uguen Rainer Leupers (Tetramax) / All
11:30	Common Reference for Collaboration	Isabelle & Jerome All
12:00	Discussion	Meike Reimann All
12:15	Future SAE Technologies	Haydn Thompson Morten Rasmussen, Technopolis

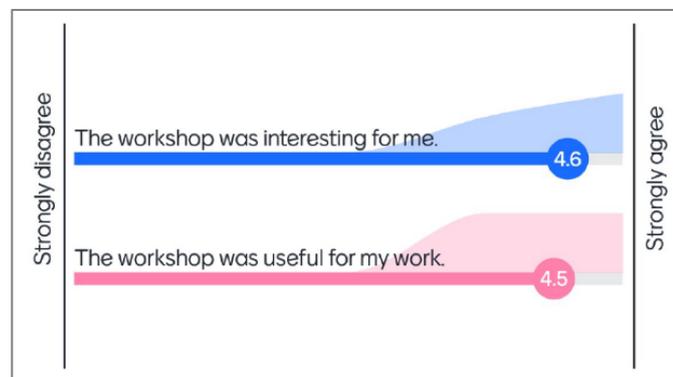
Figure 2: SAE – 2nd collaborative meeting – July 2nd, 2020 - Agenda

The third meeting assessed the experiences and lessons learnt and additionally held 2 working group sessions (covering sustainability and technology radar).

Session	Moderator (S4E2)	Session	Moderator (S4E2)
9:00 Intro and Agenda	Meike Reimann	12:00 LUNCH	Inputs
Highlights, challenges and pressing issues Focus on open calls and covid19	Meike Reimann All	14:00 Working Group Sustainability - Sustainability for SMEs after Application experiments - Sustainability of IAs (share and learn) - Sustainability of the DIH network / SAE Initiative	Haydn Thompson Olivia Uguen
9:30 Collaboration: - Joint Outreach and Dissemination Strategy - Open Calls assessment - Lessons learnt - AEs mapping - Common KPIs	Jerome Gavillet / Isabelle Dor	15:30 – 17:00 Working Group Technology Radar - New and exciting applications - New and upcoming technologies - Targeting non-high tech SMEs	Haydn Thompson
11:30 SAE Market Place	Marta Pinzone		
12:00 LUNCH			

Figure 3: SAE – 3rd collaborative meeting – October 26th, 2020 - Agenda

A feedback round was performed at the end of this meeting. All participants stated the meeting had been useful for them (using hands up tool in teams: 17/17 hands were raised). In addition to specific feedback on technologies and applications that could be added to the Technology Radar feedback was also collected on the usefulness of the Technology Radar Working Group Meeting (see graph on the right 4.5/4.6 out of 5).



A very positive aspect of all Collaboration Meetings was, that all IAs were always represented by one or more participants. Another meeting took place during the first half of 2021 (May 17th) with a specific focus on sustainability strategies and the collection of lessons learnt from the SAE phase 3 IAs (now running for more than one year) and SAE cross-cutting impact (inputs that are discussed in deliverable D2.4 “Cross-cutting impacts”).

Agenda - 10am – 12:30pm





Session	Moderator (S4E2)
10:00 Intro and Agenda - Latest news, challenges and opportunities - Open calls, covid19, feedback from reviews, EDIH	Meike Reimann All
10:15 SAE Market Place / Digital Tools: - MP Launch, info collection, promotion - Digital tools	Marta Pinzone
10:30 SAE Sustainability - Sustainability Models - SAE Sustainability towards HE and Digital Europe	Haydn Thompson / Olivia Uguen
11:00 SAE Collaboration and Lessons Learnt - Analysis of info collected from IAs - Interactive Session on Lessons Learnt	Jerome Gavillet / Isabelle Dor
11:30 SAE cross-cutting Impacts - Introduction - Interactive Sessions	Rainer Günzler / Sven Spieth
12:25 Wrap-up	Meike Reimann
12:30 End of Meeting	

 SmartEurope2 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872111. 2

Figure 4: SAE – 4th collaborative meeting – May 17th, 2021 – Agenda

4 Lessons learnt

At the 4th workshop, the results of the SAE mapping (D2.1) were presented discussed and then, an interactive session was proposed to the participants in order to collect the lessons learnt from all IAs, using the MURAL tool (Figure 5). These lessons, consolidated with partners own and shared experiences, are discussed and analysed hereafter inside Parts 4.1-9.

	SmartEEs	DIGIFED	DIH4CPS	HUBCAP	SMART4ALL	BOWI	DIATOMIC	FED4SAE	TETRAMAX
[DIH] COMMUNICATION & DISSEMINATION						Difficult to create an audience from scratch with very limited budget (all SAE technologies)			
[DIH] SERVICES	Comprehensive portfolio of services challenging to have					SAE unclear for most DIHs what are their actual services and what is the level of quality for their services			
[DIH] ECOSYSTEM	Comprehensive portfolio of capabilities, challenging to have								
[DIH] MARKETPLACE	Design & maintenance of marketplace in complex & resource consuming				Design of the marketplace is quite complex and often demanding				
[OPEN CALL] SME/MIDCAP OUTREACH	Go-to & ready - response of small companies and high share of rejections (most of early stages)			Midcaps are harder to reach for us				Access to SMEs requires a lot of networking	Mid caps market size is small
[OPEN CALL] EVALUATION & SELECTION	Selection - challenging task matching business and user actual needs and available technology solutions								only digital companies
[APPLICATION EXPERIMENTS] CONTRACTING	Evaluators - diverging views, especially between financial and technical evaluations								
[APPLICATION EXPERIMENTS] EXECUTION									
[APPLICATION EXPERIMENTS] FOLLOW-UP	No real means for follow-up beyond DIH lifetime					No focus on value proposition for stakeholders after end of experiment. Hard to compare or extend projects.			
OTHERS									

Figure 5: Lessons learnt session (Green and orange boxes are for lessons learnt from positive and negative experiences, respectively).

4.1 Lessons on [DIH] COMMUNICATION & DISSEMINATION and lessons on [OPEN CALL] SME/MIDCAP OUTREACH

Communication & dissemination strategies were implemented by all IAs to share the ins & outs of their respective projects and also to outreach their stakeholders at large and specifically engage third parties, especially SMEs and Mid-Caps, to participate in digital experimentation and a digital transformation experience. This was achieved either by organising or participating to a large number of different types of events, being association & cluster events, B2B meetings, conferences, digital conferences & exhibitions, trade shows, exhibitions, fairs (outside COVID time) and webinars,... Also, they have been leveraging social media as well as press & media to the same purpose. In brief, that have all DIHs demonstrated their capability to communicate and disseminate within their communities, across DIHs' communities and beyond. So, this is an established fact that IAs haven't faced real difficulties in these types of activities, probably also because of their shared competences and

experience in several EU projects from H2020 and previous framework programs. IAs' partners are mostly senior beneficiaries and actors in the RDI collaborative arena.

Due to the covid-19 pandemic many of the initially planned events and formats had to be cancelled or postponed. The shift to virtual events resulted in some delays in planning these event, however all IAs were quick to adapt and the resulting events were some of our most successful events.

Now, if looking at the lessons learnt collected across IAs (Table 1) and despite the difficulties encountered, the overall outreach of all IAs taken jointly has been relatively successful with concrete results that are analysed hereafter in terms of types of companies outreached and engaged and their geographical distribution.

Table 1: [DIH] COMMUNICATION & DISSEMINATION and [OPEN CALL] SME/MIDCAP OUTREACH.

SmartEEs	EU coverage large
	EU coverage uneven - Non-tech & Mid- Cap outreach challenging
DIGIFED	EU outreach
	Gender equity - Challenge to reach low-digital maturity company, large SME How to define a low digital maturity SME - tool?
DIH4CPS	Difficulty to align project results with others and to cover EU extensively
HUB4CAP	Lack of ICT 2020 taking place made it harder to get contact to all SME stakeholders
SMART4ALL	International and especially local webinars help a lot to communicate the objectives and services of the project
BOWI	Difficult to create an audience from 'scratch' with very broad focus (all SAE technologies)
FED4SAE	European outreach
	Mainly small SMEs
TETRAMAX	Mainly micro / medium SMEs, which has been the key target group - high EU outreach.

4.1.1 Non-tech and Mid-cap companies

Non-tech companies are representing the majority of companies in Europe, which have not initiated yet their digital transformation process. These are the core target of the SAE instrument to get them accessing digital technologies and experimenting them thanks to IA projects and ecosystems.

Mid-Cap companies, not formally defined in size by the EC, are companies in between SMEs and so-called large companies. These are supposed to be flexible enough in their innovation process to take advantage of new technologies while have stronger investment capacities than SMEs, and especially small or very-small enterprises.

As a trend crossing most IAs, it has been observed the following,

- A high level of small enterprises (start-up size) have been applying to IAs at the expense of Mid-Caps;
- A large majority of applicants are 'tech' companies.

When crossed with the communication strategies, some explanation can be found in 1) the choice of communication channels, 2) the natural tendency of tech companies to access types of funding instruments commonly used by them and 3) the proximity of start-up-like small tech enterprises with

their National RTOs and tech ecosystems. Hence, a net fishing approach (top-down) with intense communication through diversified channels & audiences (both specialised and general public) has not proven to be fully efficient. The overall outreach and the level of participation are satisfactory as the competition for excellence is maintained between applicants with success rates below 30%. However, this approach is not selective enough between innovators and early adopters, and not likely either to tip the scales towards targeted clients: new non-digitised users (mostly non-tech) having solid business experience and established customers base (Mid-cap > Medium enterprise > Small enterprise > Start-up). Hence, as one important lesson learnt, a bottom-up approach identifying non-tech or midcap companies individually and on their profile would be more appropriate, also requesting a more customized approach closer to usual bilateral / industrial business practices.

Additional observations are that,

- It has always (in all SAE phases) been difficult to reach non-tech companies/SMEs as there was some resistance to change/digitization. The pandemic didn't make outreach easier, but even non-tech companies got a digitisation push (at least in their mind-set).
- The IAs have very different approaches and technologies. Some tend to have an easier reach to non-tech. Moreover, different instruments can enhance collaboration between tech and non-tech companies (e.g. twin experiments in DigiFed).
- IAs themselves should provide technologies/platforms attractive and easy accessible for non-tech companies. Within the conception-phase of open calls/AEs, this has to be taken into account.

4.1.2 Geographical coverage

SAE third party beneficiaries are the start-ups, SME or Mid-Cap companies, not partners of any SAE IAs, that got engaged in Application Experiments via selection processes set by each IA project. These companies can be tech or non-tech and then can provide services or use services. The number of beneficiaries and the FSTP support they have received are given by IA and by Countries in Figure 6 and Figure 7, respectively. It must be stated that the full set of data has not yet been collected as certain IAs are not finished yet with their selection process or don't have all information available yet. However, this set of data can already be analysed.

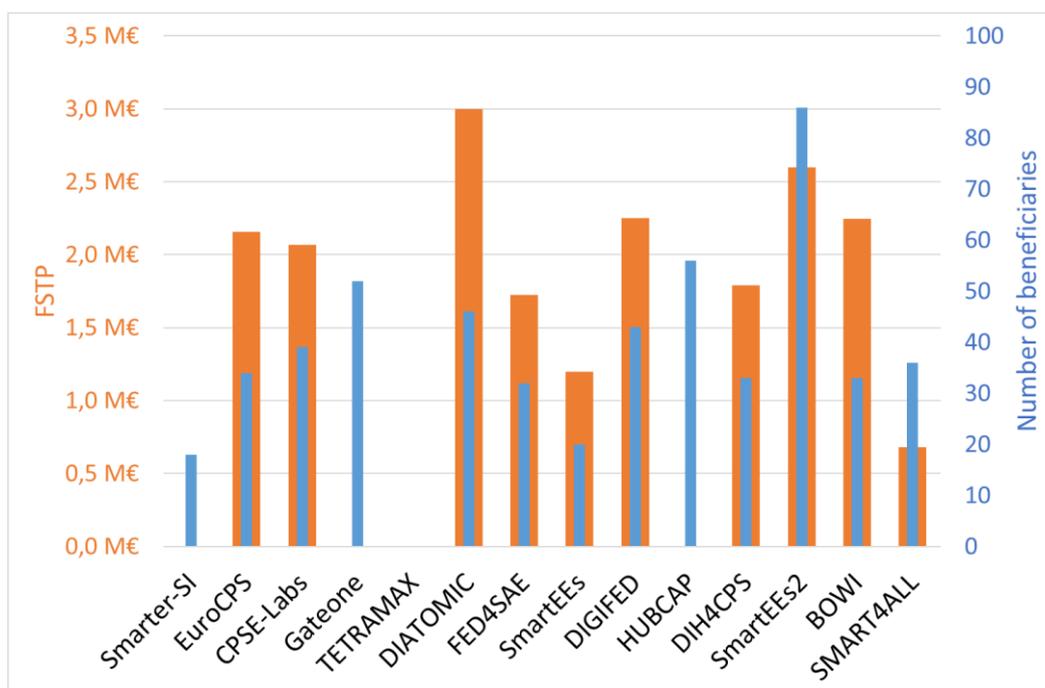


Figure 6: SAE third party beneficiaries.

First, it is a noticeable result that more than 500 third party SME or Mid-Cap have been already engaged in SAE, for a cumulated FSTP support of over 20 M€. This represents an average of 40 k€ support per beneficiary and between 20 to 90 engagements per project, depending on IAs.

In terms of geographical distribution, SAE has covered more or less all Europe with some concentration though in certain countries, where IAs partners are anchored. The top ten by Countries (in # of beneficiaries, Figure 7 - left) is showing a clear benefit for Germany and Latin

Countries and also a noticeable benefit for one associated country and one EU13 Country (Table 2 - left column). When looking at the distribution of cascade funding (Table 2 - right column), one sees a slightly different ranking (Switzerland replaced by Austria) but with the same top 4 beneficiaries concentrating the FSTP support.

Table 2: Ranking of SAE beneficiaries.

Ranking	#	k€
1	Spain (93)	Spain (3,602)
2	Germany (68)	Italy (2,120)
3	France (58)	France (2,073)
4	Italy (50)	Germany (1,783)
5	Great Britain (24)	Great Britain (880)
6	Netherlands (22)	Netherlands (770)
7	Greece (21)	Greece (645)
8	Switzerland (17)	Portugal (643)
9	Romania (15)	Austria (553)
10	Portugal (14)	Romania (532)

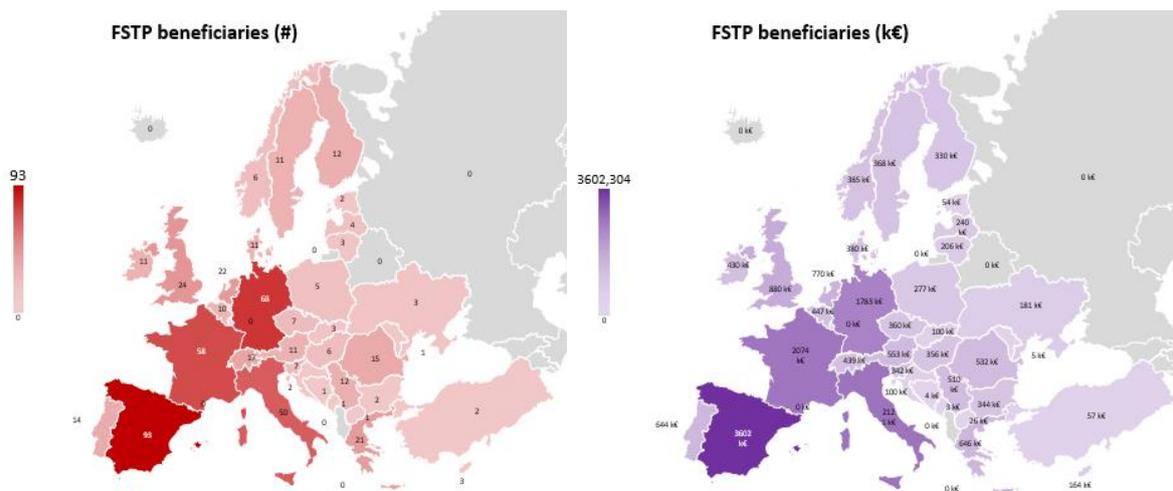


Figure 7: Third Party beneficiaries in number (left) and financial support (right)

Additional observations are that,

- Cascading funds concentrate in specific regions/countries;
- Widening IAs to be expanded, collaborate even more intensively with other IAs. Good practice by BOWI: specific calls are restricted to regions;
- Direct more IA funding into widening, choose consortia with good EC coverage, make sure you include this aspect in your proposal.

4.1.3 Recommendations

If including the consortia cumulated experience, over the past 7 years, additional observations and guidance can be formulate as follow,

- SMEs, especially non-tech ones, tended to be very change resistant, especially in terms of digitisation. With the rise of the pandemic this has partly changed, and they became more open. Nevertheless, the pandemic situation also made it harder to reach them personally.
- Be very specific for your target groups (in communication & dissemination these can be start-ups, SMEs and Mid-caps as well as other DIHs or policy making) and provide targeted materials through suitable channels. Try to speak their language and provide them with examples and success stories (success stories are one of the most effective/convincing ways to raise the SMEs interest). Build a trusted environment by show casing successes and challenges.
- Build on existing network and multipliers but try to reach newcomers with them.
- Under the pandemic situation, communication, dissemination & outreach became much more digital itself. Here social media and videos reached even more importance. Make use of new tools and channels, make meetings as interactive as possible, even when online (whiteboards, MURAL, voting). There was a steep learning curve in terms of using such tools.
- SMEs are usually busy and do not like to travel. Providing online meetings will make it easier to reach them. Webinars have been quite successful tools to e.g. explain open call proposal procedures. They should also be kept in future. Such workshops can be recorded and put on the website, to easily be watched/spread across Europe. Provide information in a digestible format. Give room for questions and answers.

Outreach/Open calls:

- Open Calls are structured quite differently in IAs (concept, size, amount of funding, lengths, partnering,..) which might be confusing for SMEs. This should be simplified. The CSA in connection with national/regional innovation agencies should try to reduce complexity and simplify the information for interested companies.
- Outreach has to take place at 2 levels: the overall offer on CSA level using the Innovation Portal, and a more specific outreach by the IAs, promoting their technology/offer in more detail. Many visitors of IA websites have come via the SAE Innovation Portal, which proved to be very effective.
- Open call campaigns should be adapted to Open Call deadlines, accompanied with social media / video communication/ dissemination and webinars explaining the process and procedure.
- Outreach activities go beyond open call promotion. They expand the network and reach by collaborating with related initiatives (sister projects, national/regional digitization initiatives, EEN, NCPs, policy making) to raise awareness on the initiative and its offers.
- Outreach activities should also specifically target the consolidation of a pan-European network and intensively foster collaboration between the DIHs. In future, the network of EDIHs will strongly support the aim to connect regions to Europe.
- Outreach to investors should be taken into account, as SMEs will not necessarily be ready to bring their idea to market directly after the AE.

4.2 Lessons on [DIH] SERVICES

As a general understanding, all IAs have been successful in designing, setting up, launching and demonstrating bespoke services in their respective digital fields. Also, the types of services proposed by IAs can be well gathered in relation to the targeted audiences of DIHs (Table 4). However, it turns out not to cross services across IAs because of the inherent complexity to deal with different DIH operational models, communities and timescales for the Open Calls.

One recommendation to consolidate services across IAs is definitely to leverage a common marketplace for all digital technologies that would grow up a common European database with registries of organisations and services.

Table 3: [DIH] SERVICES.

SmartEEs	Comprehensive portfolio of services challenging to have
DIGIFED	Interesting response tool to new service proposals involve successful to mix national / private company size and funding tech/non-tech ones
DIH4CPS	services
	Built a reference model to configure DIH service portfolios and a method to define customer journeys
HUB4CAP	Difficulty in finding collaborating DIHs (also to define KPIs to measure their performances)
SMART4ALL	Collaboration between DIHs about services is time-consuming - The ongoing EDIH discussion makes it harder to attract other DIHs to be part of our ecosystem
	Services targeting matchmaking between different types of resources and assets

BOWI	Required services can be diverse based on different types of experiments
FED4SAE	appreciated combination of technical expertise + tailored innovation management and business support
	services limited to the ones offered by the consortium
TETRAMAX	technical and business coaching appreciated

Table 4: Targeted audiences for services implemented by IAs.

		PHASE 1				PHASE 2				PHASE 3						
		Gateone	Smarter-SI	EuroCP's	CP-SE-Labs	DIATOMIC	FED4SAE	TETRAMAX	SmartEEs	BOWI	DIGIFED	DIH4CP's	HUBCAP	SMART4AL	SmartEEs2	
AUTHORITIES	EC															
	Reg/Nat															
RESEARCH	RTO															
	Universities															
	Private labs															
EDUCATION	Universities															
	Academics of applied sciences															
	Vocational training															
	Private training															
INVESTORS	Public															
	Private															
LARGE COMPANIES	Tech provider															
	Services provider															
SERVICES ORGANIZATION	Incubators/Accelerators															
	Clusters and industry associations															
	DIH															
SMES (incl. start-ups) & MIDCAPS	Tech provider															
	Services provider															
	Innovative company															

4.3 Lessons on ECOSYSTEM

As presented in Table 4, ecosystems have been defined in their nature and types of stakeholders with the most important categories of stakeholders shared by most DIHs being RTO; universities; innovative companies; EC; private; DIH; public; clusters and industry associations; tech provider; and services providers.

These ecosystems have been intensively activated inside IAs through the various channels and actions commented above, while inter-exchanges between these ecosystems have been organised via Smart4Europe2 collaboration events.

This has raised awareness and led to a shared and common understanding inside these ecosystems of 1) the importance of the digital transition for Europe to remain competitive grow a new economy for the benefit of its citizen while and 2) the availability of public funding schemes and instruments like SAE to engage concretely non-digitized actors of the industry (and others) in experimenting the latest digital technologies available in the most advanced research and development centres. So, one positive lesson is that the several ecosystems leveraged by the IAs have consolidated themselves through the H2020 SAE experience while integrating new actors they hadn't considered before (e.g. innovation & business service suppliers, non-tech companies with high potential for digitization). This has been a major step towards a fully consolidated European digital ecosystem which will require new instruments to further support the adoption of digital technologies and the emergence of new business and markets.

However, there is still some way to go to align these ecosystems or at least to find the best synergies across them, which would require some common agendas and tools (e.g. marketplace) with joint industrial and economic perspectives. So, digital ecosystems have nucleated from DIH projects, which will take advantage of the Digital Europe program to cross regionally anchored EDIHs in the upcoming time.

Table 5: ECOSYSTEM.

SmartEEs	Comprehensive portfolio of competences challenging to have
DIGIFED	Collaboration with other DIHs
DIH4CPS	Joint events with other projects (informative webinar on open calls)
HUB4CAP	High number of on-line offerings due to Covid-19 makes it harder to get high number of participations of events
SMART4ALL	International and especially local webinars help a lot to increase the project network and ecosystem - Matchmaking tool and helpdesk tools helped considerably
BOWI	Joint events, invitations to other project events and joint participation in EU-wide events has been helpful increasing awareness
TETRAMAX	Growing eco-system between our CCs and DIH on a local/regional level but difficult to measure

4.4 Lessons on [DIH] MARKETPLACE

There has been a proliferation of marketplaces created by Digital Innovation Hubs as this has been a requirement of funding. Although each has a target audience it causes confusion in the marketplace and it would be used to link existing services, e.g. marketplaces, as well as other activities, e.g. innovation coaching, to avoid fragmentation and provide a more cohesive one stop shop. The CSAs Smart4Europe2 and I4Ms have also created marketplaces for their respective ecosystem. A *supra* and single marketplace hosting all digital technologies and linking digital ecosystems in one place would have certainly been an advantage. This seems to be shared expectation from IAs to move in that direction.

Table 6: [DIH] MARKETPLACE.

SmartEEs	Design & maintenance of a marketplace is complex & resource consuming
DIH4CPS	Aligning the marketplace to the categories of services and competences in the network. Need of a standard ontology/ categorization for the different projects to allow collaboration.
HUB4CAP	Planning payment of on- line services in the long term needs to be properly planning in architecture
SMART4ALL	Design of the marketplace is quite complex and effort demanding
BOWI	There are too many marketplaces with unclear value proposition for participants
FED4SAE	Tailored Innovation management / business support Opportunity to pitch in front of investors with well-prepared pitches & adequate pool of investors
	No clear directions of the marketplace and the added value propositions

4.5 Lessons on [OPEN CALL] EVALUATION & SELECTION

Evaluation & selection processes have taken various forms depending on DIHs approaches. This has encompassed different formats of Open Calls, templates for applications, evaluation schemes and boards (w/o external reviewers), timescales and other constraints specific to each IA (FSTP amount, max 100 k rule, # of AEs to be selected,...).

Beside this diversity of approaches, one must underline the fact that most IA actors were implementing and operating FSTP for their first time, starting from scratch for the first IAs. So, IAs have all been through a fast learning cycle, with new competences, by the way, that should not be lost but re-implemented in a similar way in future programs and instruments.

So, a large variety of experiences has been gathered mostly negative ones at the start that have been improved with time and from project to project within SAE. Amongst these lessons, one can mention the divergence in evaluation between different types of evaluators e.g. tech vs. investors, the difficult selection stage when the best match must be found between and users' needs and available technologies, the lack of business maturity in general even though the SAE instrument has been aiming first at integrating new technologies through experimentation of new businesses or the uncertainty on which technologies would serve the best end-users needs. This latter point comes back to the recommendation to have one single entry for all digital services, connecting all ecosystems and accelerating business with the support of smart IT tools and AI, eventually.

Table 7: [OPEN CALL] EVALUATION & SELECTION.

SmartEEs	Selection - challenging best matching between end-user actual needs and available technology solutions
DIH4CPS	Difficulty in understanding which kind of DIHs (in terms of technologies, competences, services provided) are needed in the network based on the needs of SMEs
HUB4CAP	GDPR in relation to evaluators getting access to sensitive information from applications
SMART4ALL	Significant deviations between reviewers
BOWI	Takes time till finding out how much funding potential beneficiaries already received in other SAE initiatives
FED4SAE	Low maturity digital company involved through end-user company Large variety of application domains
	Only digital companies
TETRAMAX	High variety of application domains

4.6 Lessons on [APPLICATION EXPERIMENTS] CONTRACTING

The contracting phase has been one other common feature for all IAs to commit the selected third parties into experimentation from a legal standpoint. Although not the most exciting part of the overall DIH experience, all IAs have successfully integrated this necessary step as the commonly established practice to set up a trustful and viable business.

However, it has been observed that the time to contract can be longer than expected and that time keeping was one important aspect to efficiently manage large portfolios of Application Experiments.

Despite some singularities across IAs, a common model of a third-party contract (inspired from the DESCAs model for consortium agreements) would have certainly saved a lot of unnecessary resources over all IAs funded under SAE phases 2-3. The production of such a model by the EC legal services should be considered and favoured in the frame of FSTP or related instruments in the future.

Table 8: [APPLICATION EXPERIMENTS] CONTRACTING.

SmartEEs	Evaluators - diverging views, especially between investors and technical evaluators
DIGIFED	Open calls getting bigger and more complex (different calls), legal aspect + contracting + signature process + CF payment is taking more & more resources.
SMART4ALL	Monitoring and addressing all different cases is quite demanding.
FED4SAE	Well elaborated process: technical feasibility, technical evaluation, business evaluation. Standard model contract for all AEs with personalized technical
	If successful call the process becomes quite time and resources consuming
TETRAMAX	Well defined process and one single model contract for all third parties (not negotiable): based on grant agreement and mandatory EU regulations. - regular direct communication between TETRAMAX and the third parties > very much appreciated

4.7 Lessons on [APPLICATION EXPERIMENTS] EXECUTION

Execution is following the contracting phase, with all third parties engaged in experimentation through Application Experiments (AE), which are innovation & business projects limited in size, support (third party support < 100 k€) and time (typically 1 year project as the rough average). In the SAE model, no research nor development was to be considered in AEs but the solely the integration of latest technologies, already available on the shelves, into new product cases. However, and despite not involving R&D, technologies integration in non-conventional systems (systems they are originally not developed for) may be nor certain AEs, this has caused delays in the execution of AEs and, as a consequence, the need to manage their duration upstream, at the contact level, to cope with IAs durations and the delivery of a final and complete portfolio of AEs with prototypes and exploitation plans. So, it seems to be of shared acceptance that innovation coupling advanced technologies with new systems and products is having a share of risk, which must be taken into account from the start and mitigated adequately from the selection to the contractual phase.

Table 9: [APPLICATION EXPERIMENTS] EXECUTION.

SmartEEs	Contracting - various delays in contracting Application Experiments - Execution
DIGIFED	interesting feedbacks from the monitoring of the AE execution
DIH4CPS	New ideas being developed Opportunity to develop small innovation projects
SMART4ALL	Covid-19 situation required modifications of the execution plan
BOWI	If different consortium partners are overseeing the experiments, how to align the quality of support (consortium) and of experiments themselves?
FED4SAE	notification= detailed ESR, well appreciated
	implementation process too long for the open call 1, is faster for following calls

TETRAMAX	Delays due to Corona; only a few delays due to bureaucratic steps for contract signing. Regular direct communication between TETRAMAX and the third parties > very much appreciated - so far, successful TTX implementations
	Covid-19 definitely makes it harder to create network opportunities for SMEs establishing cross-border collaboration

4.8 Lessons on [APPLICATION EXPERIMENTS] FOLLOW-UP

All initiatives highlighted the issue of collecting feedback post project. While it is possible to collect information during the course of the funded activity there is no mechanism of funding in place to follow up SMEs to gather impact information. This would only be possible with continuous collaboration with the SMEs. As the SME can only receive one funding round they would need to come back for more different services in the future such as for innovation help in order to maintain collaboration. An element of contractual commitment in awarded funds to provide feedback two years after project end would be beneficial. It would also be useful to collect feedback from SMEs on the customer experience, e.g. are the portals, information, training, etc., provided useful to the community.

Table 10: [APPLICATION EXPERIMENTS] FOLLOW-UP.

SmartEEs	No real means for follow-up beyond DIH lifetime
DIGIFED	Well organized for the time of the project, no means after the project ending
	No means to follow after the project ending
DIH4CPS	Provide more solutions and innovation for SMEs
	No tools to follow experiments after project
SMART4ALL	Services targeting sustainability of the funded experiment like “showcases” and “innovation spaces” that facilitate the follow up of experiments.
BOWI	We have no value proposition for collaboration after end of experiment. Need for examples of other projects
FED4SAE	Tight follow-up of the project execution thanks to the monitoring partner with shared methodology and monthly management meeting
	COVID19 impact
TETRAMAX	Well performed for the TETRACOM experiments follow-up

5 Conclusion

Main conclusions can be summarized below and are expected to be taken into account to prepare new instruments in the future that will sustain this mechanism set by SAE in the frame of H2020. These are:

- IA consortia have shown their capability to communicate and disseminate widely and efficiently about the SAE ins & outs and engage third parties during the 7 years of the SAE program thanks to their competences inherited from their long experience of EU projects (for most of them and especially for coordinators).
- Although implementing various but similar channels and messages across IAs, consortia have experienced a same difficulty to outreach and engage non-tech companies or Mid-cap companies. Although questioning and improving communication & dissemination strategies with time and from project to project, outreach of these actors has remained difficult. Which, in turn, questions the level of awareness of non-tech and the actual needs and interest of Mid-Caps to get this type of innovation support.
- Exchanging services across IAs has proven not to be that straightforward because of the inherent complexity to deal with different DIH operational models, communities and timescales for the Open Calls. One recommendation to consolidate services across IAs is to leverage a common marketplace for all digital technologies that would grow up a common European database with registries of organisations and services.
- Digital ecosystems have been intensively activated inside IAs and across IAs, thanks to Smart4Europe2 actions. This has raised awareness and led to a shared and common understanding inside these ecosystems of the importance of the digital transition for Europe. However, there is still some way to go to align these ecosystems or at least to find the best synergies across them, which would require some common agendas and tools (e.g. marketplace) with joint industrial and economic perspectives.
- There has been a proliferation of marketplaces created by Digital Innovation Hubs as this has been a requirement of funding IAs. A supra and single marketplace hosting all digital technologies and linking digital ecosystems in one place would have certainly been an advantage. This seems to be shared expectation from IAs to move in that direction.
- Evaluation & selection processes have taken various forms depending on DIHs approaches. This has encompassed different formats of Open Calls, templates for applications, evaluation schemes and boards (w/o external reviewers), timescales and other constraints specific to each IA. Although difficult to summarize all practices and draw out some unique process, all DIH partners involved in evaluation & selection activities have certainly learnt and acquired new competences that will be useful in the next programs.
- Regarding the contracting and execution phases, experiences have also been manifold and this is again a new and shared expertise that was created placing DIHs in the responsibility to manage FSTP fluxes efficiently while promoting a quite large number of different Application Experiments, driven by business ideas from the field. From an audience that hadn't been previously addressed in such a way, that are all kinds of start-ups, SMEs or Mid-caps in Europe, whatever their level of acquaintance with the digital world.