Coordination and Support Action

Smart 4 Europe

Horizon 2020 Programme

Introduction to the Day

Haydn Thompson

THHINK

Smart4Europe

Innovation Portal and Service Centre

T1.1 Set-up and maintain Innovation Portal

T1.2 Market place

T1.3 Service centre and innovation support

Collaboration within SAE Initiative

T2.1 Impacts and opportunities of SAE Initiative

T2.2 SAE community building

T2.3 Best practices "Share and Learn"

T2.4 Blueprint of a sustainability plan

Outreach and Strategy

T3.1 Stakeholder Analysis Stakeholder Database

T3.2 Strategic outreach for SAE growth

T3.3 Create a map of national and regional initiatives

T3.4 Leverage further investment

T3.5 Brokering between users and suppliers and the extended SAE community

Technology and Innovation Radar

T4.1 Identify new innovative SAE ICT technologies

T4.2 Development of Technology Radar

T4.3 Identify new applications in traditional and non-traditional ICT sectors and engage with community

T4.4 Consultation meeting and strategic recommendations

Dissemination and Exploitation

T5.1 Continuous news update

T5.2 Printed and digital media

T5.3 Own events, participation in fairs and conferences

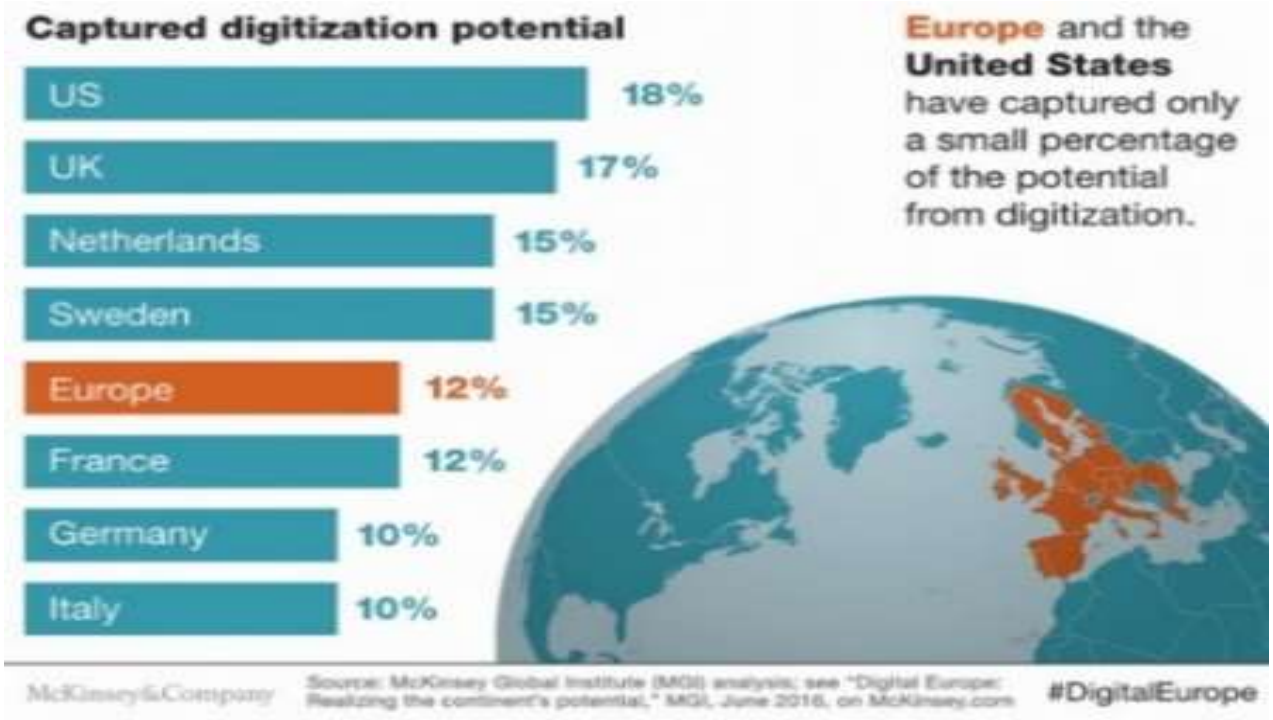
T5.4 Facilitating implementation and sustainability of Digital Innovation Hubs across regions

T 5.5 Dissemination and exploitation plan

Key Outcomes

Innovation Portal	Best Practice and Impact Analysis	Map of National and Regional Initiatives	Technology Radar	Maximised Impact of Programmes Achievements
SAE Market Place	Sustainability Plan	Strategic Outreach Plan (Leverage further funding and investment)	Applications in New Sectors	Sustainable SAE Ecosystem

Digitisation Potential

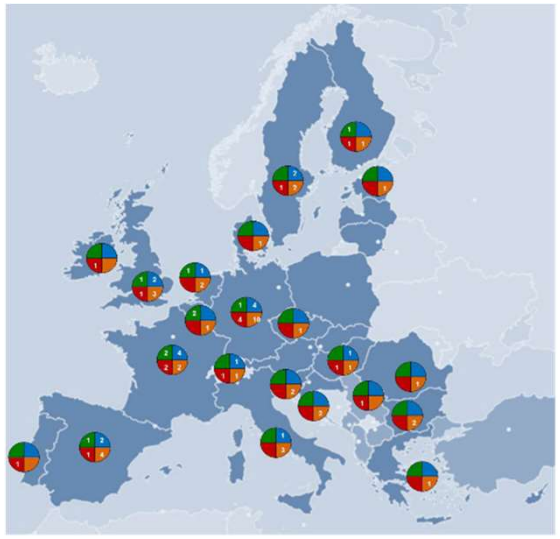


SAE – Smart Anything Everywhere

The aim is to *"accelerate the design, development and uptake of advanced digital technologies by European industry, in particular, SMEs and mid-caps. The core objective is to deliver products and services that include highly innovative electronic components and systems. There is also an aim to encourage take-up of new technologies in low-tech sectors where innovation could have a huge impact".*

- The SAE initiative was set up in 2015 to help SMEs, start-ups and mid-caps to enhance their products and services through digital technologies, with the help of Digital Innovation Hubs.
- €58 million have been invested into the SAE initiative, and a further investment of €64 million is committed for 2019.
- Collaborative ecosystems are being built in which researchers, large industries and SMEs engage in a large number of small application experiments facilitated by Europe's leading competence centres.

SAE Vision



	SAE projects	DIHs involved
AREA 1: Cyber-Physical Systems	3	18
AREA 2: Advanced Computing	2	41
AREA 3: Smart System Integration	3	15
AREA 4: Organic and Large Area Electronic	1	9

- Address the “next wave of products that integrate digital technologies” with the aim of transferring knowledge and fostering collaboration to promote the uptake of digital technologies by European industry.
- Accelerate the design, development, and uptake of advanced digital technologies by bringing Innovation Actions (IAs) together.
- Boost digital transformation of European Industry European small and medium-sized enterprises (SMEs) and mid-caps
  - Promoting early technology adoption
  - Assisting technology suppliers to seek finance for their product development
  - Enable access to early customers

Challenges - Evolution

- The concept has been successful and this has also led to Member States also investing in Digital Innovation Hubs supporting national/regional digitalisation strategies.

- There is no 'one-size for all' approach and the resulting DIH landscape is still very heterogeneous with fragmentation of EU, national and regional initiatives and efforts across domains.

- While a local DIH might be the best one to understand the regional settings and speak the same language as the SME or mid-cap, it might not have the right technologies, capabilities or services available to provide the right support for its digital transformation. There is thus a need to exploit the broader knowledge base and enormous wealth of technologies and services available across the network of European DIHs.

- Cross-border support programs for SMEs and mentoring schemes for DIHs have already successfully demonstrated how regions in Europe can help and learn from each other. A noted challenge, however, is that many SMEs look for local solutions due to cultural, language and distance issues which makes cross-border or pan-European collaboration less appealing.

- In order to build a collaborative and sustainable network of DIHs acting as ONE 'technology and service provider', will require a stronger linkage of key SAE players, not only within the DIH community, but also across PPPs such as ECSEL, the DEI CSAs, the European Institute of Innovation and Technology (EIT), the European Enterprise Network (EEN), National Contact Points (NCP) and investors.

Overview of Day

	Smart Anything Everywhere – EU Consultation Meeting
09:00	*Registration*
09:30	**Welcome and Introduction** *Introduction to Smart4Europe / SAE and the aims of the day (Haydn Thompson; THHINK)*
09:45	**Presentations** *Smart4Europe Results* *- Technology Radar/ Application Domains, Haydn Thompson (20 mins)* *- Improving the SAE Offer, Rainer Günzler (20 mins)* *- Vision for Sustainability, Géraldine Andrieux (20 mins)* *EC Vision: Horizon Europe (30 mins) – Sandro D'Elia*
11:15	*Coffee Break*
11:45	**Share and Learn** *Experiences and Lessons Learnt (helping SMEs in Digital Transformation, joining efforts)* *- I4MS (Mayte Carracedo, FundingBox) (15 mins)* *- DIHNET.EU (Maurits Butter, TNO) (15 mins)* *- ARTEMIS-IA / ECSEL / PPPs (Ad ten Berg, ARTEMIS-IA, Chris DeCubber, EFFRA) (15 mins)*
12:30	*Lunch*
13:30	**Assessment of Results (interactive session)** *- Assessment of emerging technologies and applications (20 mins)* *- Assessment of needs to improve the SAE/DIH network offer and impacts (20 mins)* *- Assessment of networking and sustainability Issues (20 mins)*
14:30	*Coffee Break*
14:45	**Elaboration of Recommendations (group work)** ▪ *A Future Technologies and Applications (chaired by Haydn Thompson; THHINK)* ▪ *B Improving the SAE offer (chaired by Meike Reimann; Steinbeis 2i)* ▪ *C Networking and Collaboration (chaired by Rainer Günzler; Hahn-Schickard and Mayte Carracedo; FundingBox)*
15:45	**Final Discussion, Conclusions & Feedback**
16:00	*Closing of Workshop*

Coordination and Support Action

Smart 4 Europe

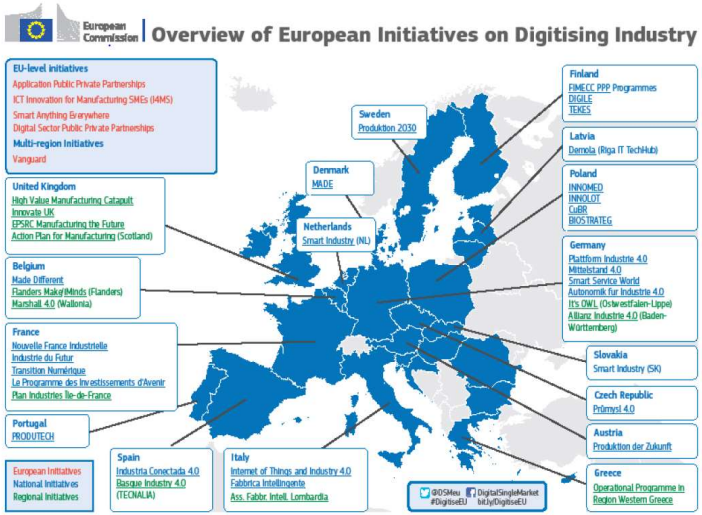
Horizon 2020 Programme

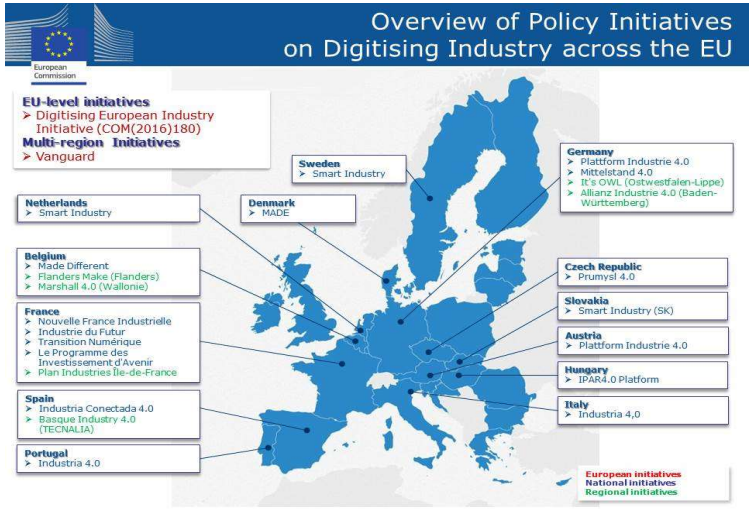
Technology Radar and Draft Recommendations

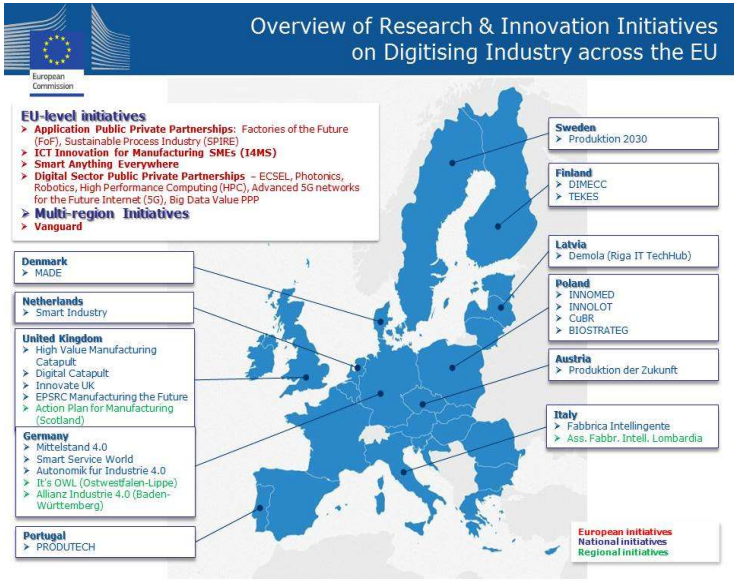
Haydn Thompson

THHINK

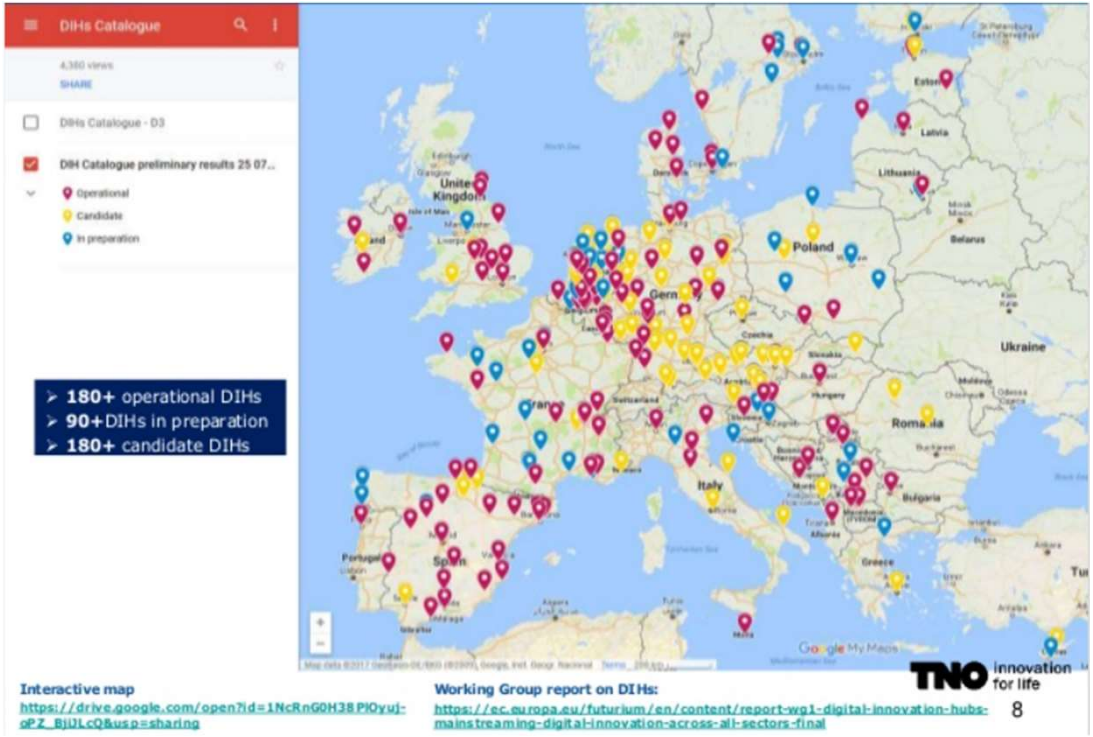
Initiatives in EU Member States







Digital Innovation Hubs



Recommendations	How	Who
There is a need to provide coordinated support to link together the existing and growing network of 200 Digital Innovation Hubs.	The establishment of the DEI DIH Working Group has been successful in regularly bringing together stakeholders interested in Digital Innovation Hubs to discuss relevant topics, exchange good practices and move the policy area forward. However, there is a need for a more concerted action to connect the current fragmented activities together. In response to this the Smart4Europe project put forward a proposal for a new CSA to bring together key initiatives under H2020. This also includes a new partner that addresses specifically training and the manufacturing sector under I4MS, thus linking I4MS with SAE. It also includes linkage with the DIHNET.EU CSA [9] which was set up to coordinate the whole network of Digital Innovation Hubs and EIT Digital [10] through MIDIH [11].	Smart4Europe2
Support wider linkage across disciplines with common interests in SAE.	A much wider activity is needed to link across other key contributing areas to SAE. This includes: • **Robotics** - European Coordination Hub for Open Robotics Development (ECHORD++ [12]), ROBOTT-NET [13] and the Robotics Digital Innovation Network (RODINE [14]), • **Photonics** - Access Centre for Photonics Innovation Solutions ACTPHAST 4.0 [15] and regional activities such as EPRISE [16]. • **HPC** - SESAME.NET [17] promoting the use of HPC by SMEs. Data is also acknowledged as being the new "oil" for business and here there needs to be support for Open Data to allow SMEs to create new services. Here linkages with the Data Pitch Innovation Programme [18] and the Open Data Incubator Europe ODINE [19].	DEI DIH Working Group

Connecting Across Borders and with PPPs

5G PPP

SPARC
The Partnership for Robotics in Europe

FoF
Factories of the Future

ECS
EUROPEAN CYBER SECURITY ORGANISATION

EGVI
European Green Vehicles Initiative

ETP 4 HPC
EUROPEAN TECHNOLOGY PLATFORM FOR HIGH PERFORMANCE COMPUTING

BDV
BIG DATA VALUE ASSOCIATION

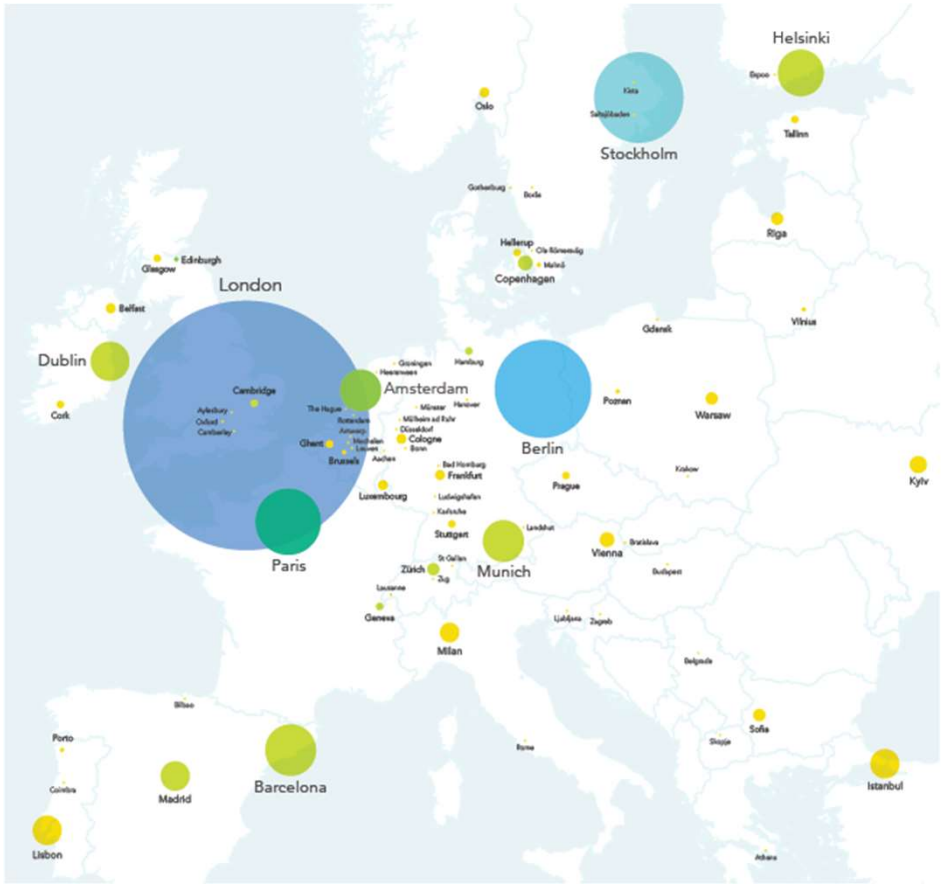
PHOTONICS21

SPIRE
Sustainable Process Industry through Resource and Energy Efficiency

Recommendations	How	Who
Raise awareness of local priorities and identify where collaboration beyond borders creates win-win situations.	Create an awareness campaign to ensure the regions understand correctly the technologies offered, their growth potential and the opportunity for them to support their adoption.	Regional and national funding bodies and European Commission.
Promote synchronisation between regional calls for funding to enable joint activities.	Engage with regional funding bodies and encourage exchange of information to maintain visibility of funding opportunities.	Regional and national funding bodies and European Commission.

Recommendations	How	Who
Ensure that the PPPs, Large Scale Pilots and Platforms are better connected with the DIH activities.	Coordinated outreach by PPPs and Large Scale Pilots to the SME community.	PPPs and Large Scale Pilots

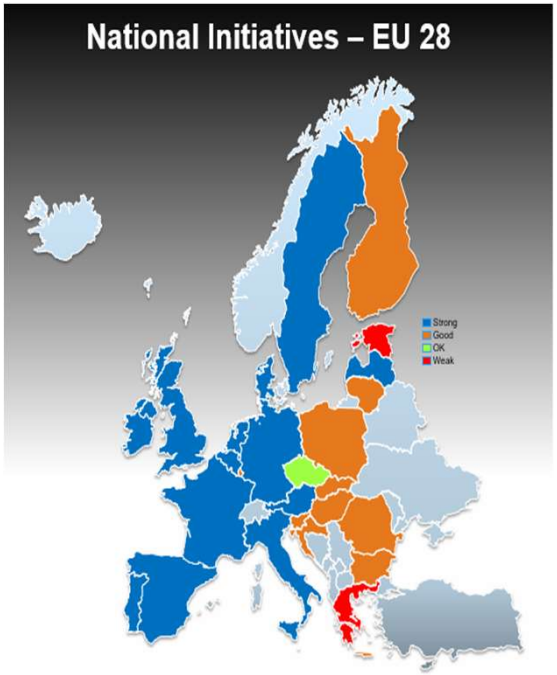
Investment Support for Digitisation

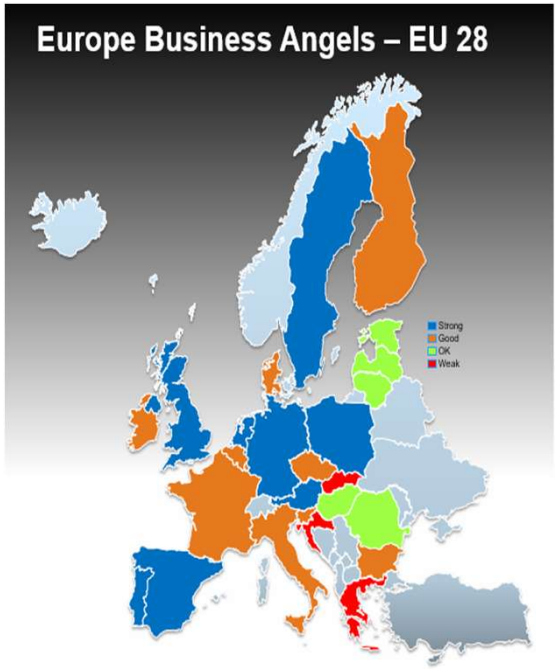


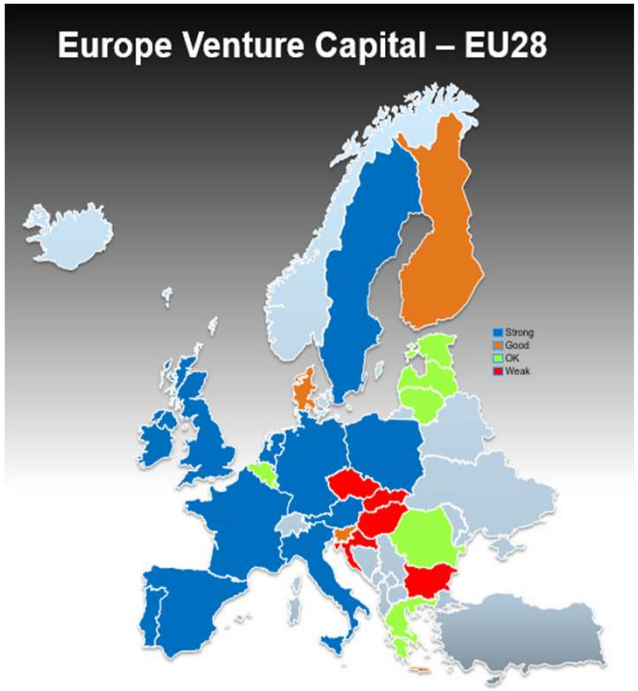
Source: Techstars

- VC investment across Europe
- Highlights that London, Berlin, Stockholm and Barcelona are key centres of VC funding.
- Wanted to go beyond this to highlight country by country the 3 key sources of funding supporting the innovation pipeline:
  - National Initiatives supporting Digitisation
  - Business Angel Funding at a National Level
  - Venture Capital Funding at a National Level

National Initiatives

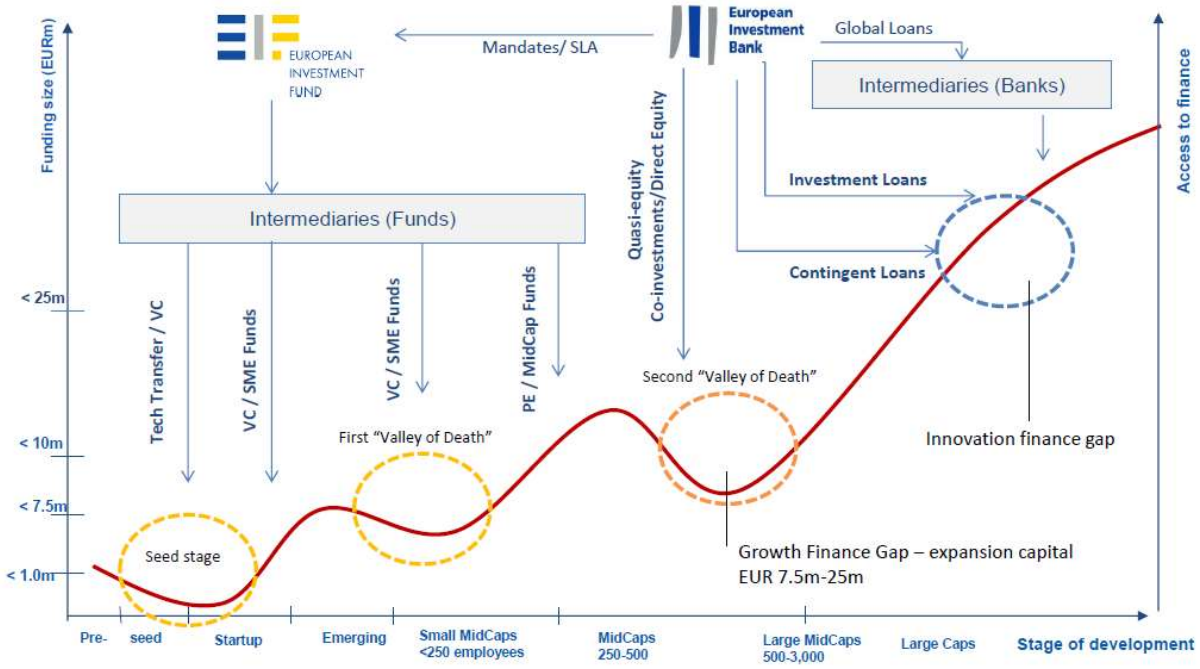






Considering the whole innovation pipeline

Double Valley of Death for New Innovations



In reality there is a double valley of death which businesses need to address. This is currently being considered by the EIB and European Commission in terms of providing new financial instruments under Horizon Europe to provide equity loans.

Recommendations for Funding

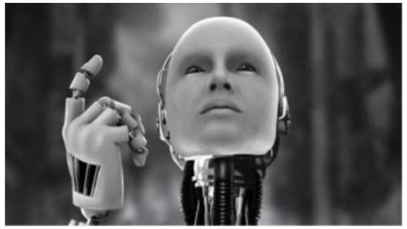
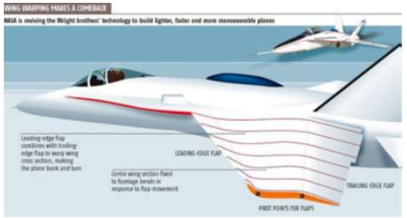
Recommendations	How	Who
Address fragmentation by putting SAE at the centre to provide single point of contact and harmonise the rules for funding to make it clearer for SMEs	Connect European private and corporate investors via SAE and provide single interface to start-ups and SMEs. SAE Innovation Actions should act together to create critical mass, raising visibility and impact speaking on behalf of 88 partners from 23 Member States.  SAE IAs should join forces on identifying complementary sources of revenues for the companies to finance their RD&I developments. Looking for the appropriate regional or national funding mechanism is time consuming and could be done at the SAE initiative level. "One harmonised set of funding rules" should be adopted to simplify SME engagement.	SAE initiative with support from EIB.
There is a need for long term funding as it takes time to evolve from public funding to self-sustainability. (Note. Even initiatives that have been funded by national funding agencies for 10 years are not yet self-sustainable).	Sustainability may be achieved via: • Industry membership subscriptions could give preferential access to capabilities, services, IP etc. Industry members also strongly influence (according to their membership level) the programme conducted. • Digital Innovation Hubs should consider new business models that provide development support for the most promising new technology ideas and services in return for a share of the profits if they are commercially successful.	DIHs

White Spots

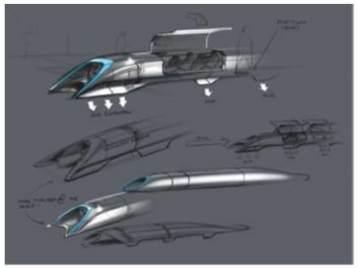
Recommendations	How	Who
Provide targeted support for indiviudal white spot countries	Create DIHs in the following sectors Hungary - construction and start-ups Bulgaria - manufacturing, information and communications and computer programming and consulting Romania - information and communication sector and tourist industry Slovakia - manufacturing particularly motor vehicles as well as a growing start-up community. Slovenia - manufacturing for a growing export market and also increasing start-up activity.	European Commission and National Government

- Analysis performed of 5 White Spot Countries
- Need targeted support

Future Technologies (Examples)

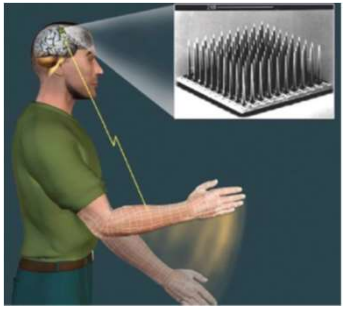





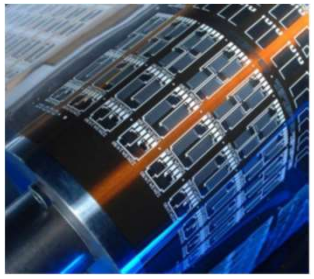
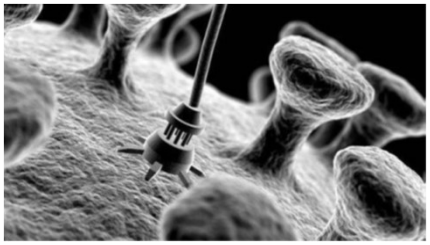



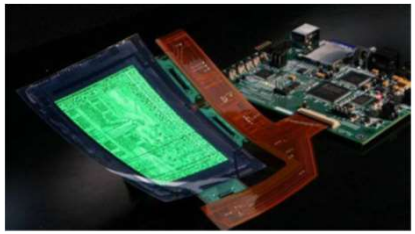








ICT Applications in Non-Traditional Sectors

Have considered SAE technologies in

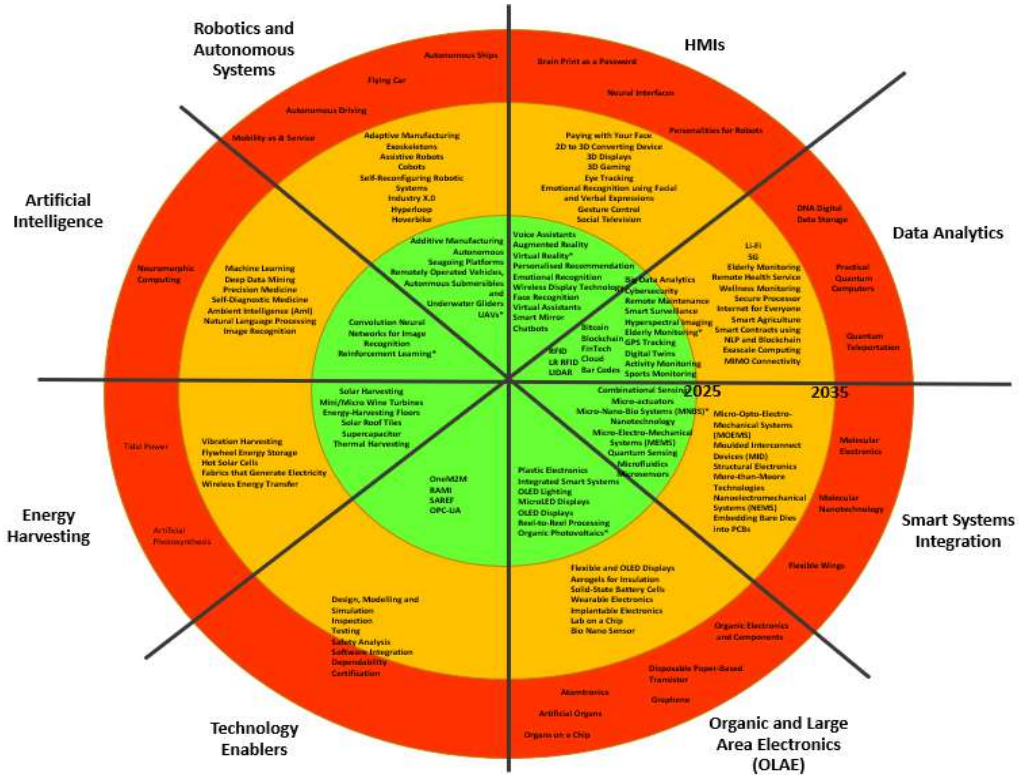
- Home Automation

- Smart Clothing and Wearables

- Smart Agriculture

- Ocean Monitoring

Technology and Innovation Radar



Recommendations	How	Who
Promote and maintain the SAE Technology and Innovation Radar	Continue activities identifying and monitoring the maturities of new technologies and promote the Radar across the SAE SME community.	Smart4Europe2
Promote the use of SAE technologies in new application domains.	Via outreach activities and promotion of the outcomes from the Smart4Europe work	Smart4Europe2

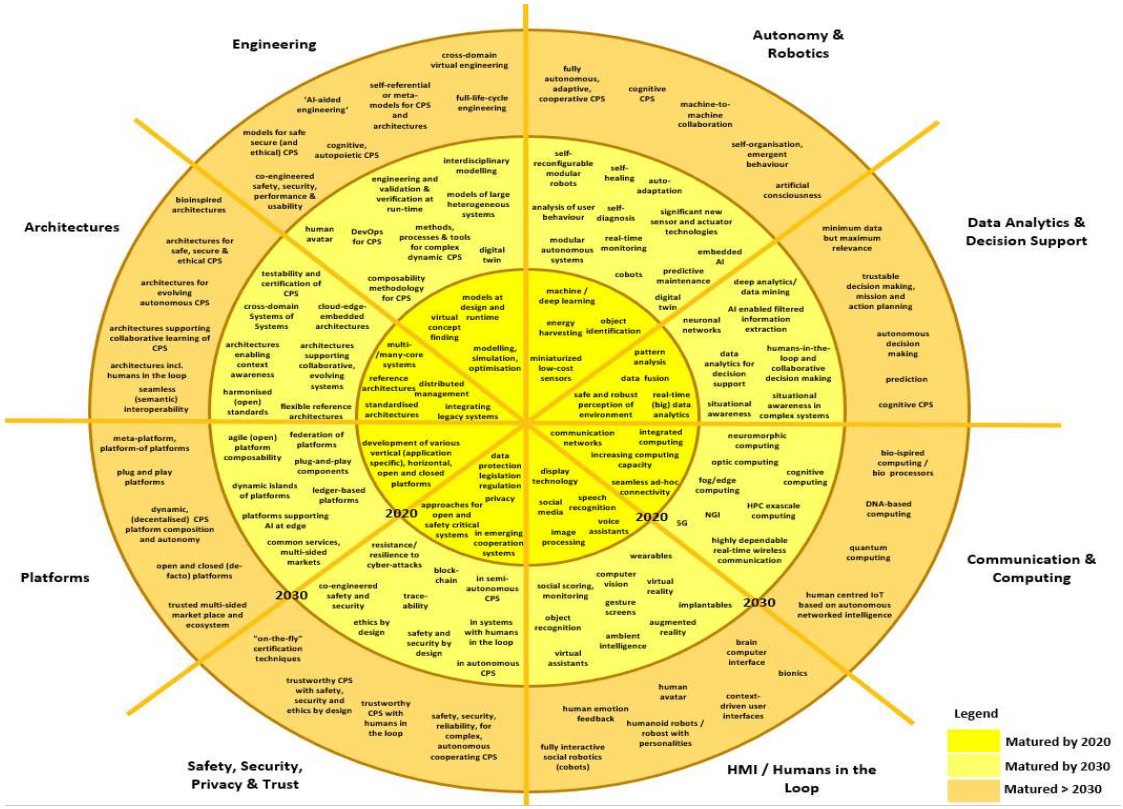
Green – technologies that SMEs and midcaps can consider to be mature in the short term

Amber - technologies that are coming in the 2025-2035 timescale that SMEs/mid-caps should be aware of for the future and may have an interest in that they may wish to monitor

Red – technologies that are still very immature and should not be considered at this time

This radar will be updated as new technologies are identified or if the status of the technologies changes over the next year

Technology and Research Radar



Recommendations	How	Who
Consider the technologies represented on the Research and Innovation Radar for Horizon Europe strategy.	Evaluate the technologies in the central band for near-term industrialisation, e.g. DIH activities. Evaluate the technologies in the middle band with respect to prioritising research funding activities in Horizon Europe. Evaluate technologies in the outer band for long-term strategic funding such as FET.	European Commission

The inner circle represents technologies or areas that are already mature and goes to 2020

The middle band identified areas that will be important between 2020 and 2030 (with the aim of identifying priority topics for Horizon Europe)

The outer band considered areas that the experts thought would be important technologies after 2030. In getting from today to the required functionality in 2030 there is a need for long term research and innovation in order to develop the appropriate, technologies, tools, platforms or services.

Training

A key issue identified in the digital transformation of companies and particularly SMEs is that it is important to ensure that the employees have the necessary skills to work with new ICT technologies.

a) Students and workers - creating the raw talent – T-shaped education
b) DIHs who want to improve their technology skill sets
c) SMEs that want to up-/re-skill their managers and workers

Recommendations	How	Who
Identify approaches to training that create the most impact.	Exchange experience from DIHs and education establishments to identify most effective approaches for: Students and prospective workers - creating the raw talent DIHs who want to improve their technology skill sets SMEs that want to up-/re-skill their managers and workers	DIHs, Universities and Schools in conjunction with Industry.

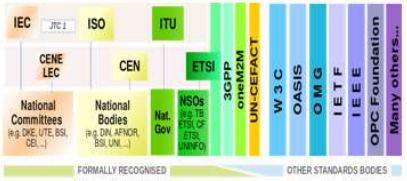
Standardisation

Synchronisation Model

Strategy

- Strategic planning & Recommendations
- International Cooperation
- SME integration
- Requirements Analysis

Digital Transformation



Standardisation

- Synchronisation of national and international standardisation activities
- Initiation of cross sectoral Standards

Research, Piloting, Testing

- Identifying new research topics
- Practical testing and validation of concepts
- Validated return of results into standardization
- Reliability Testing

Recommendations	How	Who
Create a Standardisation Stakeholder Engagement Platform to bring key actors together.		European Commission supported by THHINK.
Promote standards to SMEs.	Identify core standards areas that are of interest/importance to SMEs and promote a selected number of these on a annual basis to SMEs via the DIHs.	DIHs with support from Standardisation Engagement Paltform.

Conclusions

Overall we have developed 14 main recommendations:

- 5 recommendations on how to create a Pan European Network of Digital Innovation Hubs and how to link these with National Initiatives as well as Public Private Partnerships and Digital Industrial Platforms.
- 2 recommendations on how to coordinate funding to support the sustainability of SAE.
- 1 recommendation with respect to targeting 5 White Spot countries based on an analysis of key industrial areas.
- 1 recommendation on maintenance and promotion of a Technology and Innovation Radar to provide a clear view of technologies and their maturity levels to aid with uptake by SMEs Radar.
- 1 recommendation considering the promotion of SAE technologies in new application areas, such as, home automation, wearables, agriculture, and ocean monitoring.
- 1 recommendation with respect to proposed Research and Technology Priorities for Horizon Europe.
- 1 recommendation with respect to training and development of skills.
- 2 recommendations to improve visibility of standards activities and promote key standards to SMEs.

Assessment of Results Session

Assessment of Emerging Technologies and Applications

- Are there key technology areas we are missing?
- How do we encourage the uptake of new technologies?
- How do we address new application sectors?

Assessment of the Needs to Improve the SAE/DIH Network Offer and Impacts

- What should the SAE DIH network offer?
- What do we need to improve?
- How do we monitor impact?

Assessment of Networking and Sustainability Issues

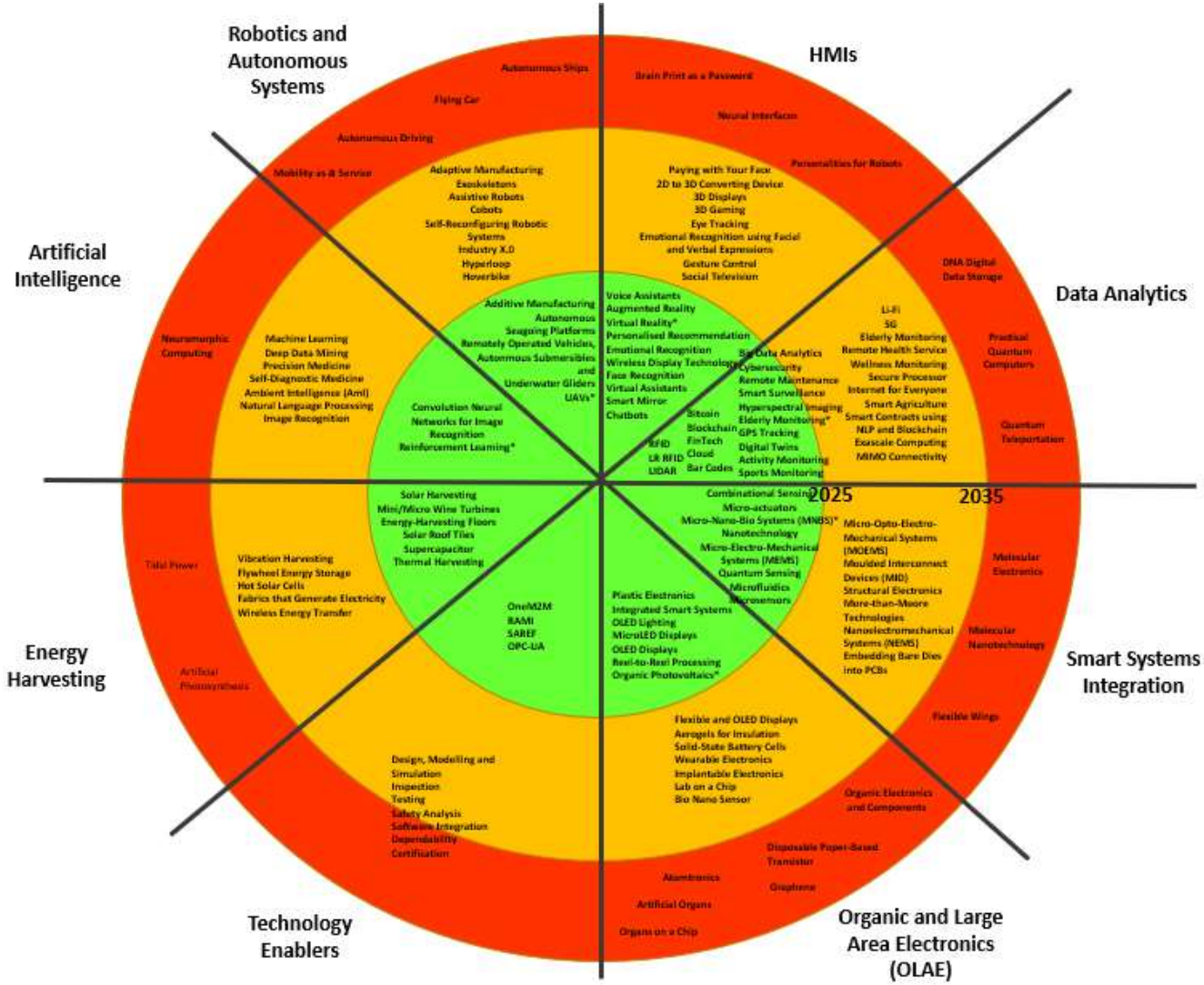
- How best to network at international level – what are the incentives?
- Approaches to making DIHs and SAE sustainable?

Future Technologies and Applications

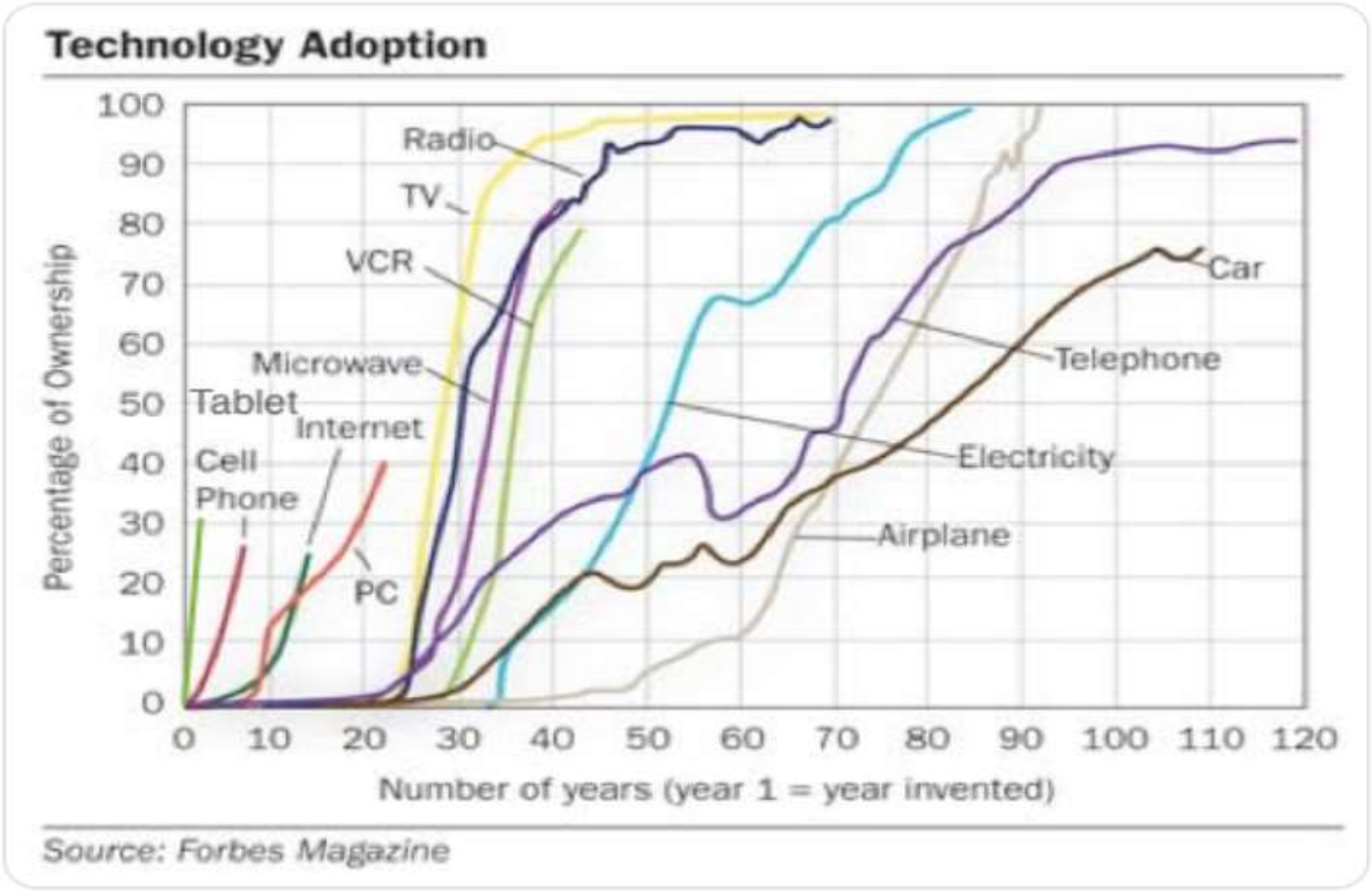
Future Technologies and Applications

- Key technology areas we are missing?
- How do we encourage the uptake of new technologies?
- How do we address new application sectors?

Key Technology Areas?

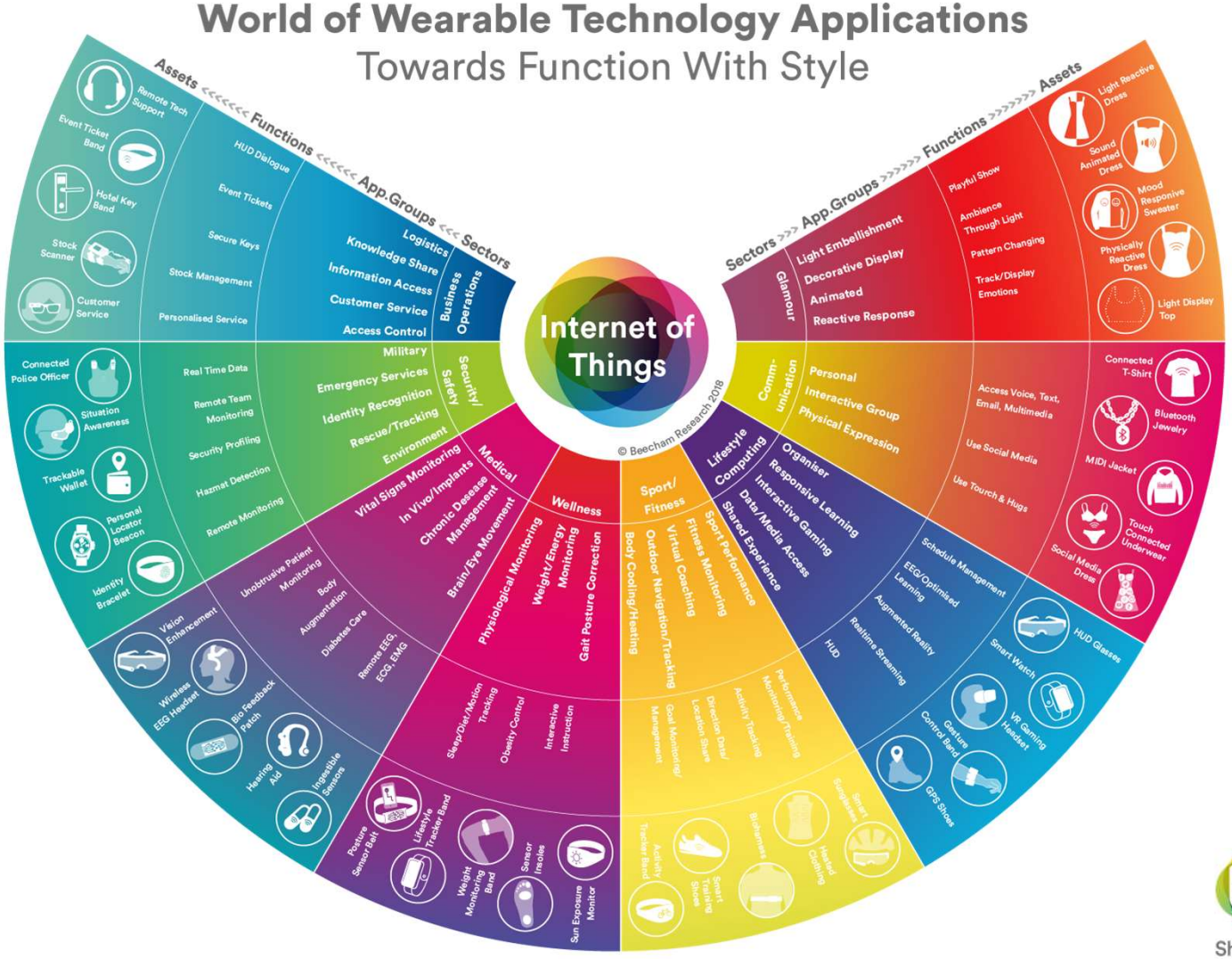


Uptake of New Technologies?



- How do we encourage the uptake of new technologies?

New Application Sectors?



beecham research
Shaping the IoT future