



Digitalising European Industry

Digital Innovation Hubs

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Executive Summary

The European Commission has launched the Digital Innovation Hub initiative in the context of the Digitalising European Industry program aiming at facilitating the adoption of ICT technologies in European Industry.

Media & Content industry have key ICT technologies that could help European industry in their daily life such as Augmented reality, Virtual reality in the design phase of new products but also hyper-personalisation in the commercial phase and also Social media as well as Media analytics to help customer needs identification.

NEM has created a specific activity in this field because NEM is a cluster of clusters and those regional/national clusters could be considered as DIH.

Today, 11 NEM clusters are part of the DIH catalogue and 20 other organisations declared to address media & content activities.

Following a recent survey, it appears that almost 20 organisations are ready to join such a NEM DIH network. Such a network should offer a number of activities supporting DIH are their daily life and NEM Initiative is ready to support this network.

Contributors:

Contributor name	Organisation
Gerard LE BIHAN	Images&Réseaux
Pierre-Yves DANET	Orange labs
Nina KLEIN	Frankfurt Book Fair
Irene LOPEZ DE VALLEJO	Digital Catapult
Claire TONNA	Digital Catapult
Kathryn GEELS	Digital Catapult
Julia PALMA	Eurecat
Monica CABALLERO GGALEOTE	Eurecat
Vera OVCHARENKO	Imaginov
Manuella PORTIER	Cap Digital
Veronica BUEY	Madrid Media Cluster
Marta IZQUIERDO	eNEM
Enrico TURRIN	FEP
Maria Teresa ANDRADE	NEM Portugal
Vincent PEYREGNE	WAN-IFRA
Lydie FENECH	Pôle Media Grand Paris
Dave FEENAN	Technology Ireland Innovation Forum
Eske BO ROSENBERG	Danish Sound
Pierre COLIN	TWIST
Benoit MICHEL	TWIST

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Digitalising European Industry - Digital Innovation Hubs

1. Context

Launched on April 2016 -Digitalising European Industry Communication (COM(2016) 180), the overall objective of the DEI (Digitising European Industry) Initiative is to ensure that any industry in Europe, big or small, wherever situated and in any sector can fully benefit from digital innovations to upgrade its products, improve its processes and adapt its business models to the digital change.

Two working groups were established on Sept 20 2016 at the DEI roundtable:

- WG 1: Digital Innovation Hubs: Mainstreaming digital innovation across all sectors
Hubs will help companies to understand digital opportunities and to get access to knowledge and testing facilities.

WG1 is working on a catalogue template able to verify that a specific organisation has the relevant competencies to become a DIH. A first draft is being checked through a pilot with Netherland clusters.

2017 Time plan:

- April 2017: first draft of the DIH catalogue template
- August 2017: collection of potential candidates (a web site will be open)
- End 2017: First version of the catalogue validated

- WG 2: "Strengthening leadership in digital technologies and in digital industrial platforms across value chains in all sectors of the economy"

The Commission plans to launch a set of initiatives supporting the building of the Digital Industrial Platforms of the future.

There are large, but fragmented research efforts in key digital technology fields and in their full integration in industry sectors.

NEM clusters should be mostly interested by the DIH part of the initiative in order to be part of the catalogue and also to define a specific network of Media & Content DIH.

The objective of this NEM DEI/DIH WG is to prepare a white paper describing what are recommendations, strategies, best practices.... to develop hubs and innovation ecosystems in terms of Media, content and creative industry. The NEM ETP should take the umbrella role of animating the Media DIH and try to catch funding in the WP2020 and further in FP9.

Each NEM cluster and organization which is already acting as a DIH or which is setting-up a DIH in terms of Media and Creative fill the online DIH questionnaire taking advantage of what is being done by each one of them in order to ensure selection by the committee and get the acknowledgment of their DIH related activities.

2. NEM Digital Innovation Hub

2.1. Definition

A Digital Innovation Hub refers to an ecosystem through which any business can get access to latest knowledge, expertise and technology for testing and experimenting digital innovations relevant to its products, processes or business models. The Hub can provide also the connections with investors, facilitates access to financing of digital transformations of businesses and help connect users and suppliers of digital innovations across the value chain.

The core of a Digital Innovation Hub is one or multiple "competence centers". These provide advanced technical expertise and facilities (labs, infrastructures, pilot lines for production, etc...). They cooperate within the hubs with the necessary partners in the innovation chain to support businesses in their digital transformation including investors, business development and legal experts, etc. No one competence centers can be excellent in all digital fields. Hence the need of networking between competence centers (and their hubs) with complementary disciplines so to offer a "one stop shop" for businesses.

The goal is to ensure that any business in Europe have access to a DIH at a working distance.

In comparison with traditional technology transfer activities of competence centers that are normally focused on collaboration with the digital supply industry (including start-ups and SMEs), the DIHs will add more intensive cooperation with businesses from all industrial sectors that were so far considered as just users of technology. The activity of DIH is driven by the demand for digital innovations. The approach is "bottom up": By providing access to latest digital knowhow and technology, any business can become an active digital innovator.

Experience so far has shown the demand has grown rapidly. Most businesses today would like to assess what new technology trends (e.g. Big Data, IoT, robotics, AI, VR, etc.) can bring to their products, processes and business models. Digital Innovation Hubs should have the capacity to offer services to a sizeable amount of industry.

The role of Competence Centers

Based on experience with existing competence centers and hubs, the following offerings are useful to help companies with their digital transformation:

- Supporting experimentation and testing with new technologies to transform products, processes or business models
- Supporting fabrication of new products and processes
- Showcasing technologies in pilot factories
- Offering introductory courses to understand new technology based on an understanding of the training needs and train a sufficient number of trainers for further upscaling.
- Brokering between users and suppliers of technologies, e.g. on tools, data, and intellectual property around technologies

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- Keep track of global developments, propose technology options and provide a flexible support
- Support mobility of experts and entrepreneurs

Competence centres and DIHs should be networked to ensure specialisation and excellence. When certain expertise is necessary which is not available in the centre, it should be possible to find it in another centre. This will ensure that any company can get the help they need, and multidisciplinary is adequately handled.

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2.2. List of potential NEM DIH

NEM is encompassing many organisations including clusters. NEM is known as a cluster of clusters. Today, several NEM members constitute or are part of initiated DIHs in the media and creative industries sector declared in the Digital Innovation Hubs Catalogue¹. Currently DIHs declared are:

Organisation	Web site	Country
Images&Réseaux	http://www.images-et-reseaux.com/en	France
Frankfurt Book Fair	http://www.buchmesse.de/en/fbf/	Germany
Digital Catapult	https://catapult.org.uk/	UK
E!xperience (Experience-based industries Hub)	https://eurecat.org/en/sectors/cultural-and-creative-industries/	Spain
Imaginov	http://www.imaginove.fr/en/	France
IMEC/SMIT	http://www.smit.vub.ac.be/	Belgium
Cap Digital	http://www.capdigital.com/en/	France
Madrid Media Cluster	http://www.clusterict-audiovisual.org/	Spain
eNEM	http://ametic.es/es/innovacion/plataformas-tecnologicas/enem	Spain
Federation of European Publishers	http://www.fep-fee.eu/	Belgium
NEM Portugal	http://nemportugal.com/	Portugal
WAN-IFRA (GAMI)	http://www.wan-ifra.org/	Germany
Pôle Media Grand Paris	http://www.lepole.org/?lang=english	France
Screen Brussels	http://screen.brussels/	Belgium
TWIST	http://www.twist-cluster.com/accueil.htm?lng=en	Belgium
GI-Cluster	http://www.gi-cluster.gr/en/	Greece
EIKEN	https://www.eikencluster.com/en/	Spain

¹ <https://ec.europa.eu/futurium/en/content/digital-innovation-hubs-catalogue-project-0>

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RCKE	http://www.rcke.si/en/	Slovenia
Technopolis	http://www.technopolis.lt/	Lithuania
Technology Ireland Innovation Forum	http://www.isin.ie/	Ireland
Danish Sound	http://www.danishsound.org/	Denmark

In the official web site (<http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool/>), there is a number of organizations declared as media DIH. Many criteria's are fitting to the NEM sector:

- Screen and display technologies
- Interactive technologies
- Augmented and virtual reality
- Gamification
- New Media technologies

With such a criteria there are actually 48 organizations claiming to be a DIH but a few of them are NEM members so it is difficult to believe that they are really operational Media & content Hub.

In order to fix this issue, there is a need to define what is a Media & content DIH, what are the minimum requirements to be a Media & content DIH. For that purpose, NEM is proposing a list of criteria's that a Media & content DIH should fulfil. They are:

- Providing local training and support.
- Supporting the acceleration of SMEs and Startups locally.
- Strengthening the links with domain stakeholders. Connecting with the local academic world and defining action plans.
- Connecting with leaders of R&D programs at a local level.
- Instructing about the NEM DIH initiative and impelling its adoption by more hubs, pushing the Programme a step further.
- Sharing best practices between *NEM DIH*
- Ensuring promotion of training for students but also SMEs workers (online training)

For that purpose, NEM DIH should propose the following activities:

- NEM DIH Centre: Definition of the venue
- NEM DIH Training centre: Media & content training program definition
- NEM DIH platform: Identification of open platforms shared beyond the local ecosystem (i.e. I²C platform)
- NEM DIH Market: Action which aims to help in the popularization of Media & Content solutions
- NEM DIH Community: Links the local ecosystems so that the local community can grow and consolidate

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2.2.1. Images&Réseaux

I&R is the digital cluster of France. Building on its excellence strategic domains (the digital technologies (5G, AI, Cyber, VR/AR etc..)) it has developed its strategy in two directions accompanying the usage of these technologies:

The digital economy (the use of technologies to develop; produce distribute digital content (in which ICC have a key role)

The digital society with four target markets in line with its two regions S3 having ICC as part of them: e education, smart home (including content consumption), smart territory and e health.

With more than 250 members I&R has been evaluated last year as a reference of integration of a cluster in its innovation ecosystem working with 11 Technopoles, 7 French Tech and several public and private structures.

Operational DIH services:

- Awareness creation
- Ecosystem building, scouting, brokerage, networking
- Visioning and Strategy Development for Businesses
- Collaborative Research
- Concept validation and prototyping
- Testing and validation
- Incubator/accelerator support
- Voice of the customer, product consortia
- Market intelligence
- Access to Funding and Investor Readiness Services
- Mentoring
- Education and skills development
- Business development / financing

2.2.2. Frankfurt Book Fair (FBF)

FBF is the international publishing industry's biggest trade fair, with >7,150 exhibitors from >100 countries, > 278,000 visitors, > 10 000 journalists and bloggers. FBF organises the participation of German publishers at around 20 international book fairs, has 5 offices abroad and hosts more than 50 international trade events outside of Germany yearly. FBF is a subsidiary of the German Publishers & Booksellers Association. THE ARTS+ is a business festival for the cultural and creative industries. The goal of the new format is to exploit the potential of digitalization for creative content and to develop new business areas. www.book-fair.com, <http://theartsplus.com>

Operational DIH services:

- Support of new service/product and start-up development
- Ecosystem building, scouting, brokerage, or networking
- Dissemination, communication and awareness

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- Market intelligence (cultural and creative sectors)
- Training, Education and skills development
- Policy stakeholder dialogue

Other:

- Internationalization support
- Business development and strategy

2.2.3. Digital Catapult

Digital Catapult is a national, private-not-for-profit research and technological organization set up by the UK Government to drive the digital economy. This is done through the practical application of digital innovation to remove barriers to growth, faced by businesses. By applying business and technology know-how to the new commercial opportunities unlocked through Digital Catapult's programs and collaborations, new markets and opportunities can be created for UK digital companies, in turn making UK businesses more competitive and more productive. Our mandate is also to drive regional growth, which we are doing through our four regional Digital Catapult centers across the UK in addition to its London headquarters. These are currently based in Brighton, North East & Tees Valley, Northern Ireland and Yorkshire. Each Catapult center has a unique focus and is aligned with local digital innovation initiatives.

Digital Catapult focuses on two key sectors: digital manufacturing and creative industries. In addition, it is exploring opportunities in digital health and care. Digital Catapult has also identified four key drivers that we believe can positively disrupt business models, create competitive advantage and deliver superior experience for customers, namely:

- Data-driven: new ways to work with personal data with more control and trust, applications of blockchain and smart contracts, cybersecurity particularly for emergent threats;
- Connected: the Internet of Things and associated enabling networking technologies such as Low-Powered Wide-Area networks and 5G;
- Intelligent: artificial intelligence and particularly machine learning;
- Immersive: augmented, virtual and mixed realities, and related new forms of human interface.

Operational DIH services

The Digital Catapult offers a number of services including

- Building, coordinating and increasing access to large scale testbeds
- Driving engagement between small companies and large companies
- UK, EU or International Collaborative Research & Development projects
- Accelerating the growth of markets by supporting ecosystems and helping exports

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- Development of standards
- Building prototypes, testing feasibility of technologies
- Helping large companies become more efficient through the introduction of digital innovation.
- Providing access to facilities, skills and space

Notably, the Digital Catapult HQ hosts a dedicated Immersive Lab, which allows businesses to showcase the latest immersive content and offers cutting-edge testing site for businesses to surface their immersive innovations. Three regional Immersive Labs are also currently in development. The Digital Catapult also runs an IoT innovation program called Things Connected, that delivers the UK's largest distributed IoT LPWAN in collaboration with a range of partners. It is also building a 5G testbed in Brighton to help shape the way services will be delivered by 5G infrastructure in the future and a Machine Learning Lab to enable SMEs to access computer architectures optimized for machine learning and to access research and learning from world-leading experts at the University. As such, the lab will enable knowledge exchange, and help turn research excellence into commercial outcomes.

2.2.4. e!xperience - Experience-based industries hub

The e!xperience is an operational regional DIH promoted and coordinated by Eurecat. It currently comprises 9 partners, including large companies, clusters, catalan government agencies and Eurecat as a competence centre.

The mission of the e!xperience DIH is to promote the competitiveness of cultural and experience-based industries (media and creative industries, tourism and sports) through applied research, innovation and knowledge transfer. The main objectives of the e!xperience DIH are:

- To promote innovation based on creativity (soft innovation) to encourage a better introduction of emerging digital technologies in cultural and creative industries, including experience-based industries.
- To promote new dynamics of development of cultural and creative activities based on collaboration between companies, research and innovation agents and public cultural services providers in Catalonia.
- To strengthen the visibility and the link between production and cultural experiences with their public broadening, diversifying and personalizing their consumption, access and/or interaction.

Operational DIH services:

The e!xperience DIH offers companies:

- Applied R+D and collaborative research
- Technology consultancy, including market intelligence, innovation coaching and visioning and strategy development for businesses
- Concept validation and prototyping to supporting experimentation and testing with new technologies to transform products, processes or business models.

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- High specialized training supporting media related skills development
- Ecosystem building, brokering and networking between users and suppliers of technologies.
- Promoting and disseminating technological innovation in the Cultural and Creative Industries and industries based on the experience.
- Access to tools related to strategic design (design thinking, service design, experience design,...)
- Besides, through Eurecat's specific program +PYME, it also offers access to funding to SMEs.

2.2.5. Imaginov

Imaginov is a triple-helix cluster, focused on the convergence of the CCI & ICT industries. The cluster gathers media, animation, gaming studios as well as the ICT companies developing the 3D, VR, AR, AI, gamification solutions. The cluster assembles almost 200 members, mostly innovative SMEs, academics, laboratories, R&D centers, universities. It has a wide expertise in methodical approaches for the identification and selection of promising concepts as well as the follow-up of these. Imaginov aims to: boost the innovation and competitiveness of the ICT and CCI Industries ; promote business models that encourage the search for new digital technologies ; Contribute to the development of R&D in all fields related to the ICT and Creative sectors.

Operational DIH services

- Research and development activities
- Support of new product and start-up development
- Ecosystem building, scouting, brokerage, or networking
- Dissemination and awareness
- Market intelligence
- Education and skills development

Other

- Internationalization support
- Business development and strategy

2.2.6. Cap Digital

Cap Digital (www.capdigital.com) is the French business cluster for digital transformation in the Paris Region, the first digital innovation ecosystem and the largest cluster in Europe. Created in 2006 as a non-profit organization, Cap Digital counts more than 1000 members; mostly SMEs but also large companies, academics and policy makers. It focuses on 6 markets: Culture/Media, Education/HR/Training, e-health/Well-being, Technologies/Data/Artificial Intelligence, Smart Environment, Industries & Services.

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Cap Digital provides its members with intelligence, training, matchmaking/networking, funding solutions, project reviews, label accreditation program for R&D projects and business development. Cap Digital received in 2014 the Gold label Cluster management excellence delivered by ESCA. The cluster has been involved in 16 EU projects since 2006 and is currently running 9 of them. It is also a member of powerful European networks such as the NEM initiative, ECHAlliance, EBN and two KICs: EIT Digital and EIT Health. Cap Digital organizes every year the Futur en Seine, Europe's largest digital Festival showcasing the latest digital innovations to both the professionals and the general public.

Operational DIH services

- Awareness creation
- Ecosystem building, scouting, brokerage, networking
- Visioning and Strategy Development for Businesses (including strategic coaching, financial coaching, design coaching)
- Collaborative Research
- Concept validation and prototyping
- Testing and validation
- Digital Maturity Assessment
- Incubator/accelerator support
- Market intelligence (including Market & technology watch and forecast, Publications & studies, Forecasting workshops)
- Access to Funding and Investor Readiness Services
- Mentoring
- Education and skills development
- Others: Intellectual Property Diagnostics, internationalization services (market assessment, market entry, soft-landing packages)

2.2.7. eNEM

eNEM is the Spanish Platform of Multimedia Technologies and Digital Content. It is a networking group focused on innovation with more than 300 members with entities with different portfolio of profiles, mostly SMEs, big companies, Research Centers and Universities.

eNEM tackles aspects of R&D and innovation of the digital content and creative and cultural industries. It includes sectors and technologies like media and audiovisual, video gaming, animation, digital publishing, e-commerce, internet 3D, virtual and augmented reality, interfaces, simulation, e-learning, apps, transmedia, interactivity, big data amongst others.

The objective of eNEM is fostering and support the R&D and innovation in the field of digital content, creative and cultural industries at national and European level. AMETIC acts as the Secretary of the platform eNEM since its creation in 2005.

Operational DIH services

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- Ecosystem building, scouting, brokerage, networking
- Creative Industry common strategy
- Dissemination and awareness
- Projects support

2.2.8. Federation of European Publishers

The Federation of European Publishers (FEP) is an independent, non-commercial umbrella association representing 28 national associations of book publishers of the EU and of the EEA. FEP is the voice of the great majority of publishers in Europe. FEP deals with European legislation, advising publishers' associations and acting on their behalf in discussions and negotiations with the EU Institutions. FEP works in close collaboration with the EU Institutions to ensure that high quality European content is available to European consumers. FEP advocates positive policies for European publishing, to promote the competitiveness of European publishing and to underpin European educational standards and Europe's cultural identity. In this capacity, FEP also monitors innovation in the publishing sector, encourages exchanges of best practices and informs its members about opportunities related to innovation support programs at EU level, as well as about relevant developments in the field of technology.

FEP can thus help keeping track of global developments and discovering technology options.

2.2.9. NEM Portugal

NEM Portugal was created early in 2014 with the support of national clusters ADDICT (for creative Industries) and TICE.PT (Information, Communication and Electronic Technologies), in order to promote the joint activity between technological companies and creative industries together with all research groups relevant to the advancement of the media sector.

Following the original plan, a large mobilizing project (CHIC - Coherent Holistic Internet and Media) has been submitted and recently approved, involving a considerable number of Portuguese members from within the media and creative industries together with academy and organizations from the cultural sector. The funding approved for that project will allow the consolidation of a program of dissemination and networking activities for the benefit of all participants, in addition to a development and innovation work program. These activities will include the participation of representatives from NEM Portugal in the activities of NEM, in order to foster the internationalization of the sector. There is currently a growing interest into the area of Digital Access to Culture and members are looking at the possibility to propose the creation of an important long term activity in that area.

NEM Portugal is currently planning to offer the following services:

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- to showcase technologies and services in pilots, demonstrating innovation potential for the media and creative sector;
- to identify training requirements from companies and organizations and to promote academic members the offer the appropriate courses;
- to do brokering activities between users and suppliers of technologies;
- to follow the trends in technology and services, identifying needs and challenges to propose innovative developments and organizing events for dissemination;
- to participate in policy discussions through the creation of teams to produce sectorial analysis and propose *new measures*.

2.2.10. WAN-IFRA

The Global Alliance for Media Innovation (GAMI) is the network for innovation within the World Association of Newspapers and News Publishers (WAN-IFRA).

GAMI is a network of stakeholders involved in the research and innovation in the news media field: media organizations (publishers and suppliers), and academic research labs dealing with technology transfer and research programs on a global level. The Alliance was formed because its members all believe that our industry requires a reliable flood of new technologies, products and business models. To succeed, media companies have to learn to look at markets in new ways, they must invest to create new capabilities and rethink the way they work individually and collectively.

Operational DIH services

GAMI offers to bridge the gap between industry and research through events (workshops, conferences, media lab days etc.) or matchmaking opportunities (online through www.media-innovation.news platform), reporting and knowledge sharing on trends in media innovation and a mapping of media innovation labs, clusters and research projects.

2.2.11. Pôle Media Grand Paris

Le Pôle Media Grand Paris is the cluster dedicated to the audiovisual industry in Ile-de-France Region and was named "Grappe d'entreprises" in 2011. Also founding member and Administrator of Cap Digital competitiveness cluster for Paris region. It federates a hundred of companies, academic, training institutions and territorial authorities. Its actions are directed toward financing (Prêt d'Honneur Image, a credit loan), innovation (including « Labo », a transmedia project incubator), training, international (coproduction of Cross Video Days, European projects) and the environmental responsibility (ECOPROD).

Our mission is to accompany the digital transformation of the media industry. In the era of digital convergence, our strategy is to accompany the SMEs towards the new digital Media and Entertainment markets.

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Services provided:

- Concept validation and prototyping
- Support of new product and start-up development
- Ecosystem building, scouting, brokerage, or networking
- Dissemination and awareness
- Market intelligence
- Education and skills development
- Other (description)
- Advisory services

2.2.12. TWIST

TWIST (Walloon Technologies for Image, Sound and Text) is a triple-helix cluster for Cinema & Digital Media in Wallonia, a region in Belgium. TWIST is the main business cluster active in the sector of digital audio-visual and multimedia technologies in Belgium. It groups together over 100 members, including private companies, universities, research centres, training centres and public authorities working within the media and audio-visual sectors. TWIST has a mission to boost the economic development of its members and to give structure in a general sense to the sector as a whole. Set up as a partnership between private and public players, TWIST is a privately managed network.

TWIST members represent 4,500 employees and a turnover above 1 billion €. TWIST is in charge of several procedures meant to offer its members and their clients a competitive advantage: networking, export missions, commercial monitoring of public calls for tender, strategic monitoring, European projects, etc.

TWIST and the Digital Wallonia strategy are supporting all local companies in their transition to the digital world and their regional and international outreach.

TWIST is facilitating growth and export through various networking actions within and outside the regional borders, presence at international events such as the Cannes festival, setup and management of H2020 projects (i.e.: Eurotransmedia - www.eurotransmedia.eu), and organising world class events in the digital field (i.e.: www.stereopsia.eu).

Operation DIH Services:

- Ecosystem building, scouting, brokerage, and networking
- Dissemination and awareness
- Market intelligence
- Education and skills development
- Internationalisation support
- Business development and strategy
- Funded research projects setup and management

2.2.13. Technology Ireland Innovation Forum

The Innovation Forum offer members a route into a vibrant innovation ecosystem which promises organisations new opportunities to grow their bottom line. It is an eco-system which requires careful navigation to deliver effective results. The Innovation Forum as a bronze label quadruple helix cluster, has built the required knowledge and experience to achieve those results specifically in digital, ICT, and creative industries, but also permutating across many other pertinent industry sectors.

Within this environment there is a requirement for an innovation broker, one which facilitates organisations across a spectrum of maturity from disruptive start-ups, SMEs, to established players looking for the next competitive edge. The Forum supports organisations to innovate and fosters smart reindustrialisation by enabling the emergence of new sector specific and cross sectoral innovating value chains. By leveraging the co-operation of global leaders in academia and in both indigenous and multinational organisations located in Ireland, the Forum is well place to support the digitalisation of industry in Europe.

Operation DIH Services:

- Leveraging the excellence in research in Ireland to drive industry to academic collaboration
- Matchmaking Start-ups with SMEs & Start-ups/SMEs with Multinationals to scale collectively
- Hosting innovation clinics and driving innovation fusion across sectors
- Mentoring companies and providing access to domain knowledge experts
- Facilitating introductions to funding and investor frameworks
- Organising Brokerage/Matchmaking events between Irish and EU ICT companies
- Providing dissemination platforms, and the hosting of seminars and networking events
- Participating in FP7, H2020, COSME, and Cost Action frameworks

2.2.14. Danish sound

Danish Sound Innovation Network (DSIN) stimulates growth by branding the Danish Sound ecosystem, connecting professionals, and initiating innovative activities across research and business areas. The cluster organization was founded in 2009, is funded by the Danish Agency for Institutions and Educational Grants under the Ministry of Higher Education and Science, part of the national cluster scheme Innovation Network Denmark and holds a Silver Label for Cluster Management Excellence. Danish Sound is hosted, and has its legal entity, at the Technical University of Denmark (DTU).

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At DTU there are a number of state-of-the-art research facilities and equipment used for research, measurements, test and teaching related to sound and acoustics. The facilities are regularly maintained and brand new facilities regularly created - often with the support of industrial partners.

Another consortium member of DSIN is FORCE Technology (FORCE) - a European, private-not-for-profit research and technological organization (RTO). FORCE's mission is to transform highly specialized engineering knowledge into practical and productive solutions. They serve 9.700 unique customers yearly covering a wide variety of technological disciplines. Their services related to sound and acoustics are delivered through SenseLab.

In combination, DSIN, DTU and FORCE are strong on anything related to research, education, test and SME targeted services related to sound and acoustics. The partners are moreover within 15km proximity of each other just north of Copenhagen, Denmark.

Operational DIH services

- A wide selection of both custom and standard compliant listening tests (SenseLab)
- Quantifying key perceptual characteristics of products using sensory evaluation (SenseLab)
- Linking perceptual characteristics to consumer preferences (SenseLab)
- Test facilities incl. Anechoic Chamber, Radio Anechoic Chamber, Audio Visual Immersion Lab, Electric Lab, (DTU)
- Education and skills development (DTU)
- Ecosystem building, scouting, brokerage, or networking (Danish Sound)
- Dissemination and awareness (Danish Sound)
- Market intelligence (including Market & technology watch and forecast) (Danish Sound)

2.3. Map of NEM DIH

The DIH catalogue developed by the European Commission has collected a number of organizations which applied to be a DIH in any vertical sectors. Some of them declared to address content & media, they are the following ones (31/10/2017).

183 organizations declared addressing one of the 4 domains covered by NEM (Interactive technologies, Augmented and virtual technologies, Gamification, New media technologies)

There are 465 DIH already declared in the catalogue among them, there are 183 which claim to address at least the 4 domains related to NEM (Interactive technologies, Augmented and virtual technologies, Gamification, New media technologies). Looking carefully to those organizations, it happens that a number of them address more or less all the domains. Among those which have a clear focus on these 4 domains, 28 organizations have been identified.

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Then, 13 key organizations which are located in regions “Smart Specialized” in Media & content and creative industry and that should be the pillar of the Media & content DIH Network have been identified.

S3	Focussed	Generic	DIH Name	Country
	0	1	Accelerating Photonics innovation for SME's: a one stop-shop-incubator ACTPHAST 4.0	Belgium
1	1	1	ADAPT Centre	Ireland
	0	1	AgriTech BigData Big Data Innovation Hub at the service of the agri-food sector (Agri Tech BigData)	Spain
	0	1	AMRC with Boeing Factory 2050: AMRC Factory 2050	United Kingdom
	0	1	Amsterdam Data Science (ADS)	Netherlands
1	1	1	Arctic Game Lab	Sweden
1	1	1	Associació Clúster Digital de Catalunya	Spain
1	1	1	Barça Innovation Hub (BIHUB)	Spain
	0	1	Basque Digital Innovation Hub	Spain
	0	1	Bavarian Robotic Network BaRoN	Germany
	0	1	BBRI CLUSTER BIM (Belgian Building Research Institute CLUSTER BIM)	Belgium
	0	1	Belgian Building Research Institute BBRI	Belgium
	0	1	Berlin-Brandenburger Cluster ICT media and creative industries	Germany
	0	1	BioNanoNet ForschungsGmbH	Austria
	0	1	BrainsBusiness ICT North Denmark	Denmark
	0	1	Bridgeway Europe Startup Accelerator	Serbia
	0	1	Brussels Creative a Platform to develop Cross-over Innovation in the Region of Brussels	Belgium
No S3	1	1	CAP DIGITAL	France
	0	1	Catalan Robotics Hub	Spain
	0	1	Catalunya Industry 4.0	Spain

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	0	1	Center Digitisation.Bavaria	Germany
	0	1	Center for Technology Transfer and Innovation	Slovenia
	0	1	Centre for Advanced Manufacturing Technologies Wroclaw University of Science and Technology	Poland
	0	1	Chalmers Smart Industry Hub - CSI-Hub	Sweden
	0	1	CIT-UPC	Spain
	0	1	Cluster for Innovation and Technology ALT Brasov	Romania
	0	1	Danish Technological Institute Robot Technology - DTI Robotics	Denmark
1	1	1	Deli - Space for creative activity	Serbia
	0	1	Demola-Budapest	Hungary
	0	1	Digital Hub Bonn	Germany
	0	1	Digital Innovation Hub D-LIGHT	Spain
	0	1	Digital Innovation Hub for Customer-Driven Manufacturing @ Norte (iMan Norte Hub)	Portugal
	0	1	Digital Innovation Hub of Eastern Slovenia Abbreviation: DIGITECH SI -East	Slovenia
	0	1	DIGITAL INNOVATION HUB on 'HPC-Cloud and Cognitive Systems for Smart Manufacturing processes Robotics and Logistics.'	Spain
	0	1	Digital Innovation Hub Smart Manufacturing in Zuid-Holland SMIZH	Netherlands
	0	1	Digital Innovation Hub "Smart Production Systems" Saxony– InnoSax SP	Germany
No S3	1	1	Digital place	France
	0	1	Digital Urban Development "DUD"	Spain
	0	1	Digital Water Innovation Hub (Digital Water)	Spain
	0	1	DIGITEC Digital Innovation Hub	France
	0	1	DIH IOT	
	0	1	DIH on Healthcare – Basque Country (BASQUE DIH-HEALTH)	Spain
	0	1	DIH on Traceability and Big data (TBD)	Spain
	0	1	DIH Triveneto	Italy

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	0	1	DINAPSIS OPERATION & LAB (DOL)	Spain
	0	1	Ecosistema W	Spain
	0	1	(EFFIRENP) Efficient Ren Power HUB	Spain
	0	1	eHealth Catalonia	Spain
	0	1	Eindhoven Living Lab for Smart Society (ELL4SS)	Netherlands
	0	1	Emerging Transactional and Financial Technology Hub (ETFTH)	Poland
	0	1	European Technology Platform on Smart Systems Integration	Steinplatz 1, 10623, Berlin
1	1	1	Experience-based industries Hub (e!xperience)	Spain
	0	1	Experimental and Digital Factory (EDF)	Germany
	0	1	Flanders" FOOD	Belgium
	0	1	Flanders Make	Belgium
	0	1	Foundation for innovation and technology development INTERA Technology Park	Bosnia and Herzegovina
	0	1	Fraunhofer Future Work Lab (FWL)	Germany
	0	1	Future Cities Catapult	United Kingdom
	0	1	FZI Research Center for Information Technology	Germany
	0	1	Galician Advance Manufacturing Innovation Consortia	Spain
	0	1	Galician Automotive Hub	Spain
No S3	1	1	GjirafaLab	Kosovo
No S3	1	1	Global Alliance for Media Innovation (GAMI)	France
	0	1	Goog Life for Finland	Finland
	0	1	Hahn-Schickard Gesellschaft für Angewandte Forschung e.V. (Hahn-Schickard)	Germany
1	1	1	Haute École Albert Jacquard (HEAJ)	Belgium

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	0	1	Haute Ecole Louvain en Hainaut HELHa	Belgium
	0	1	Hub 4.0 of Manufacturing Sectors in Valencian Region HUB4.0MANUVAL	Spain
	0	1	HUB387	Bosnia and Herzegovina
	0	1	iAsturias 4.0	Spain
	0	1	ICT HUB	Serbia
1	1	1	Images and networks	France
1	1	1	IMEC	Belgium
	0	1	Industrial Digital Platforms DIH	Finland
	0	1	Industrial Research Institute for Automation and Measurements PIAP	Poland
	0	1	Industry 4.0 Center at CIIRC	Czech Republic
	0	1	Innovation Centre Kosovo (ICK)	Kosovo
	0	1	Innovation for Manufacturing in the South (I4MSOUTH)	Spain
	0	1	INNOVATION HUB	Albania
	0	1	Innovationsplattform Kufstein / i.ku ('Innovation Platform Kufstein')	Austria
	0	1	Insight Centre for Data Analytics	Ireland
	0	1	Institute of Informatics of SAS	Slovakia
	0	1	Institute of Production Management Technology and Machine Tools (PTW)	Germany
	0	1	Interdisciplinary Center of Security Reliability and Trust (SnT) of the University of Luxembourg	Luxembourg
	0	1	IT and Expert Hub Supporting Biomedical Research Technology and Education (BioMedHub)	Poland
	0	1	IT4Innovations National Supercomputing Center	Czech Republic
1	1	1	KG COWORKING	Serbia
	0	1	KIOS Innovation Hub (KIH) part of the KIOS Research and Innovation Center of Excellence (KIOS CoE) University of Cyprus (UCY)	Cyprus
	0	1	Know-Center GmbH	Austria

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	0	1	La Rioja 4.0 Industry Hub to implement Regional Digital Manufacturing Innovation (RDMI) solutions on key sectors (RIOHUB)	Spain
	0	1	Laboratory of ideas - iDEALab	Serbia
1	1	1	LeanSquare	Belgium
	0	1	LIEU network	Belgium
	0	1	Linares 4.0 Knowledge City (DIH)	Spain
	0	1	Lombardy Intelligent Factory Association	Italy
	0	1	Lufthansa Industry Solutions - Digital Lab	Germany
No S3	1	1	Luxembourg House of Financial Technology Foundation LHoFT Foundation	Luxembourg
	0	1	LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY (LIST)	Luxembourg
	0	1	LUXINNOVATION GIE	Luxembourg
	0	1	Lyon French Tech	France
	0	1	MADE - Manufacturing Academy of Denmark	Denmark
	0	1	Manufacturing Technology Centre	United Kingdom
	0	1	ManuHub@WG	Greece
	0	1	Marche innovation Machine and Market Manufacturing	Italy
	0	1	Medicen Paris Region	France
	0	1	Mittelstand 4.0 centre of excellence Hamburg	Germany
	0	1	Mittelstand 4.0 Competence Centre Chemnitz	Germany
	0	1	Mittelstand 4.0-Competence Center Dortmund	Germany
	0	1	Mittelstand 4.0-Kompetenzzentrum Augsburg	Germany
	0	1	Mittelstand 4.0-Kompetenzzentrum Darmstadt	Germany
	0	1	m:tel Digital Factory (MDF)	Montenegro
1	1	1	National Pole of Digital Content POLO	Spain

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	0	1	(National Technological) Cluster of Intelligent Factories	Italy
	0	1	Non destructive trials	France
No S3	1	1	Nyuko a.s.b.l.	Luxembourg
	0	1	One Sea - Autonomous Maritime Ecosystem	Finland
	0	1	Pomeranian Digital Innovation Hub (PDIH)	Poland
	0	1	Pomurje Technology Park Ltd.	Slovenia
	0	1	PrintoCent	Finland
	0	1	PRODUTECH Digital Innovation Hub Platform	Portugal
	0	1	Protik Innovation Center	Albania
	0	1	Region of Smart Factories (RoSF)	Netherlands
	0	1	Regional Platform Industry 4.0.of Tuscany Region (Tuscan Platform Industry 4.0.)	Italy
1	1	1	Rennes Saint-Malo French Tech	France
	0	1	RISE ICT Research Institute of Sweden ICT	Sweden
	0	1	RoboCity2030	Spain
	0	1	ROBOCOAST	Finland
	0	1	Science Technology Park Belgrade	Serbia
	0	1	Seavus Incubator DOOEL Skopje	Macedonia
	0	1	Siegener Mittelstandsinstitut (SMI) / Universität Siegen	Germany
	0	1	Silicon Europe Alliance	France
	0	1	Sirris Hub - Additive Manufacturing Integrated Factory	Belgium
	0	1	Sirris Hub Smart Assembly	Belgium
	0	1	Sirris Hub/smart product	Belgium
No S3	1	1	Skye Digital Publishing (Start-up)	Germany
	0	1	Smart Industry Centre (SmartIC)	Estonia
	0	1	Smart Manufacturing	Finland
	0	1	Smart Manufacturing Innovation for Lean Excellence center	Italy
	0	1	Smart Mobility TransDigi	Finland
	0	1	SmartCityTech	Spain

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	0	1	Smarter Access to Manufacturing for Systems Integration SMARTER-SI	Germany
	0	1	Sofia Tech Park	Bulgaria
	0	1	Software Technology and Applications Competence Centre (STACC)	Estonia
	0	1	Software-Cluster	Germany
	0	1	Spanish Digital Innovation Hub for HPC (esHPC)	Spain
	0	1	SpectroNet - International Collaboration Cluster for Global Collaboration in Photonics	Germany
	0	1	Sunderland Software City	United Kingdom
	0	1	Super IoT	Finland
	0	1	Sustainable Construction Hub	Spain
	0	1	SynHERA	Belgium
	0	1	SYSTEMATIC PARIS REGION	France
	0	1	Tallinn Science Park Tehnopol	Estonia
	0	1	Team Henri Fabre	France
	0	1	TechHub Riga	Latvia
	0	1	TECHNICOM	Slovakia
	0	1	Technologies Added	Netherlands
	0	1	Technology Park doo (SEEUTechPark)	Macedonia
	0	1	Technology Transfer via Multinational Application Experiments (TETRAMAX)	Germany
	0	1	TECHNOPORT SA	Luxembourg
	0	1	TechQuartier	Germany
	0	1	TeraLab : Big Data Platform for Research	France
	0	1	The Alexandra Institute - ICT-based innovation	Denmark
	0	1	The Centre for Process Innovation	United Kingdom
	0	1	The High Value Manufacturing Catapult	United Kingdom
	0	1	Transilvania Digital Innovation Hub - Transilvania DIH	Romania

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	0	1	TVIBIT - DIH FOR CULTURE AND CREATIVE INDUSTRY	Norway
	0	1	UniTransferKlinik (UTK): Digital Hub Lübeck BioMedTec I4.0 Testenvironment SME BioMedTeIndustrie- in-Klinik-Plattform Lübeck	Germany
	0	1	University College Bruxelles-Brabant - HE2B	Belgium
	0	1	University College EPHEC	Belgium
	0	1	Urban ICT Arena	Sweden
	0	1	VDTC of the Fraunhofer IFF	Germany
	0	1	Ventspils High Technology Park (VHTP)	Latvia
	0	1	VIRTUAL VEHICLE Research Center VIRTUAL VEHICLE	Austria
	0	1	3D Makers Zone	Netherlands
	0	1	5G Fieldlab	Netherlands
	0	1	5G Test Network Finland (5GTNF)	Finland
	0	1	5GBarcelona	Spain

The above map is giving the location of NEM DIH

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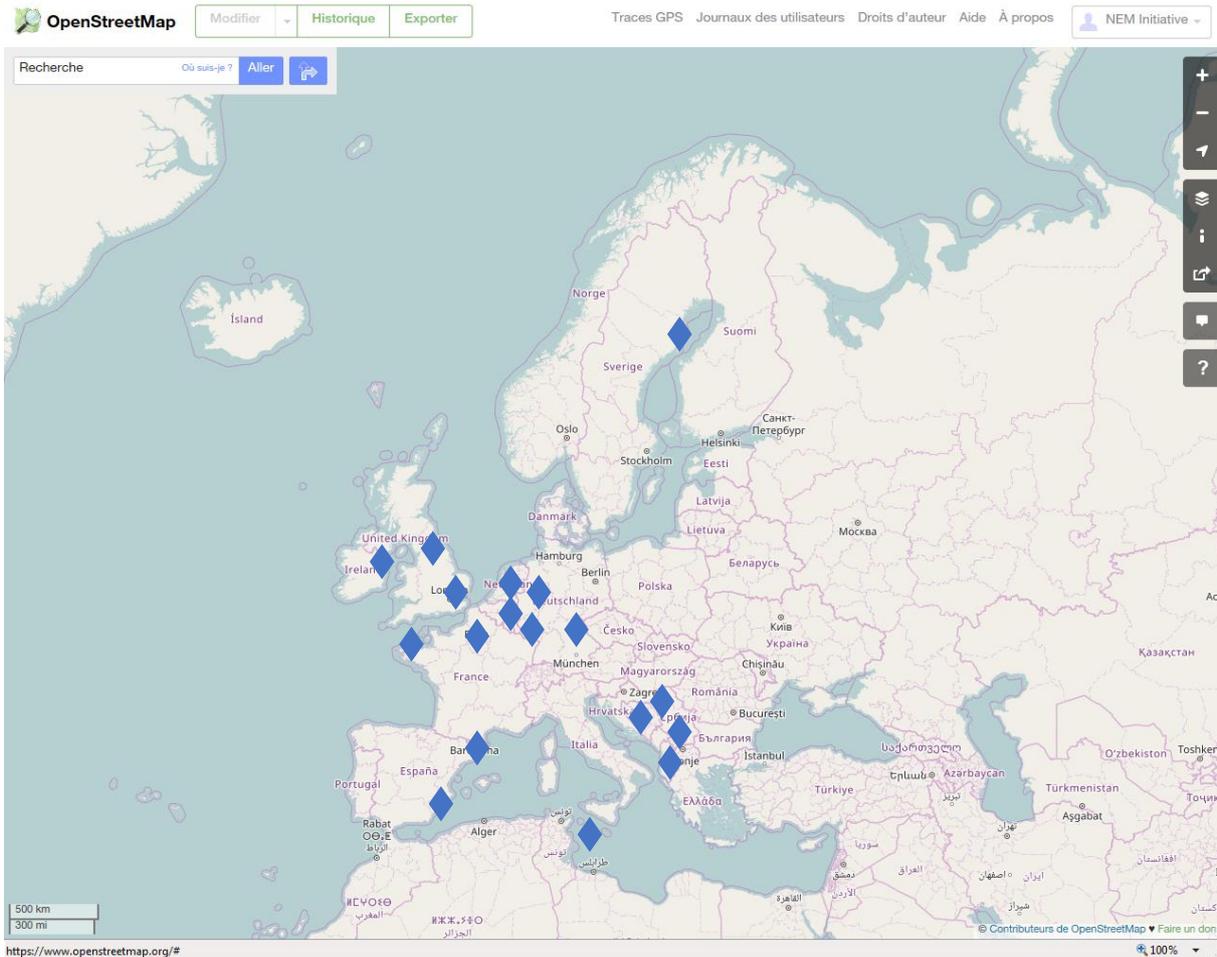


Figure: NEM DIH MAP (focused DIH)

3. Network of NEM DIH

3.1. Definition

In order to share best practices and to accelerate digital transformation of Media/Content and creative industry, there is a need to put in place a network that will help the achievement of the Digitalising European Industry initiative. Such a network should be supported by the NEM Initiative which has already such a role to develop common strategic research and innovation agenda.

As described, the NEM DIH is aligned with the EU initiative **Digitising European Industry**, in particular with the resolution of 13 December 2016 on a coherent EU policy for cultural and creative industries (Texts adopted, P8_TA(2016)0486.)

The establishment of a DIH network for cultural and creative industries will also facilitate the implementation and monitoring of the measures that arise for leveraging the data

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economy, ensuring cybersecurity and trustful and secured online platform at EU level, as stated in the **Digital Single Market** EU priority.

Last but not least, the DIH consolidation is a natural outgrowth of the **NEM Vision & SRIA** - Strategic Research and Innovation Agenda 2016. In July 2013, DG CONNECT and DG RTD recognized the NEM European Technology Platform as the official platform covering the Content & Media sectors and requested the NEM initiative to also cover the Creative Industry sector. NEM is an active community and network of more than 1000 members from industry (including large industrial organizations, start-ups and SMEs) and academia with the goal of being also a centre of influence and a centre for networking. To reach the thousands of start-up companies and SMEs dealing with content in Europe, NEM has organized itself as a 'cluster-of-clusters', whose clusters are key local, regional or national organizations often serving as the local contact points and interfaces working closely with those entrepreneurial start-ups and SMEs on a daily basis. NEM is also working closely with other networks (e.g. Network2020 and NESSI), industry groups (e.g. BDVA) and platforms (e.g. NIS), as well as with the Coordination and Support Actions emerging from H2020 actions.

3.2. Role

- Sharing best practices
- Exchange between industries having similar needs and requirements
- Methodology definition and update
- Identify user needs trends and get ahead of them to define new strategic roadmaps for technology evolution to cope with future and upcoming needs.
- Ease innovation transfer overcoming national/regional frontiers.
- Support and promote a constant dialogue between NEM DIHs to identify complementarities, synergies and potential collaborations leading to a better service offering to its regional companies and businesses.
- Collect requirements from your "customers" in order to influence future research through the NEM Strategic Research and Innovation Agenda
- etc...

3.3. Structure

- Such a network should be animated by one moderator helped with social media digital tools.
- NEM is able to setup a specific working group with those clusters and organizations belonging to the Media & Content DIH network and NEM secretariat is able to offer all the digital environment necessary to complete the objective.
- Such a working should be managed as the others through the NEM Executive group for a day to day follow up and through the NEM Steering board for the endorsement of high level decisions including the methodology design.

3.4. Added value

Cultural and Creative Industries (CCI) have a key social and economic importance in Europe (see²) for the growth of European economy and the competitiveness of the European industry. As highlighted in the study commissioned by the European Commission, this sector is mainly composed of SMEs and micro-enterprises. Furthermore, most of EU CCI areas show a fragmented industry in each country, with companies only serving in their local/national areas. These kind of companies are the ones which can take a great advantage of DIH services and its improvement via the network of NEM DIH.

In this context, the network of NEM DIH is strongly aligned with main objectives of the Digital Single Market strategy and will support it in the field of media/content and CCI industries.

- Given DIHs definition (designed to offer services to companies at a working distance), the majority of NEM DIHs are regional in nature. Linking them and putting them in collaboration strongly benefits European business for receiving more quality services and to harmonize the service offering across Europe.
- The network will identify common needs, technology solutions applicable to the whole European society, opening up and levelling the possibilities for digitalisation and innovative digital products and services across all Europe.
- Currently Europe is the second largest CCI market, behind the leading and fast-growing region of Asia-Pacific and followed by the North American market. The network will also promote joining forces and multiplying the DIH effect on the supporting European media companies in the current competitive landscape with other world regions (USA, Asia). Thus, enhancing Europe's position as a world leader in the digital economy.

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² Boosting the competitiveness of cultural and creative industries for growth and Jobs. VVA Europe June 2016

4. DIH Network setup methodology

4.1. Description

For the setup of network comprising the NEM DIH, the steps defined by the WG1 DIH of the roundtable on DEI will be followed:

Step 1: Identify the target constituency: media and content industries have been already identified as a key target by NEM. It has to be defined the following details:

- a. What types of companies do these sectors comprise?
- b. What are the industry needs?
- c. What are the regional characteristics and specialisms? What support is already available within the region?

Step 2: Develop the vision and business plan for the DIH

Step 3: Identify what is already available at EU level, what regions are represented and what are not.

Step 4: Define the services that the DIH should offer

Step 5: Build links and establish collaboration with other hubs at regional, national, EU and global level.

4.2. Time line



4.3. Resources

4.4. Links with smart specialisation strategy

At regional level in **Catalonia (Spain)**, The e!xperience DIH is aligned with main digitization strategies and in particular with the “Research and Innovation Smart Specialisation Strategy of Catalonia (RIS3CAT)” launched by the Catalan Government and built around the goals and framework policy announced in the Europe 2020 Strategy. The DIH, which addresses one of the 7 leading sectorial domains identified in the RIS3CAT strategy, contributes to this strategy boosting growth, strengthening competitiveness and promoting economic transformation of the cultural and experience based industries of Catalonia through research and innovation, and the incorporation of key enabling technologies to take advantage of its full potential. e!xperience also links with the objectives of the “[Política Industrial Sectorial 2014-2020 de la Generalitat de Catalunya](#)” (Catalonian industrial sectorial policy 2014-2020) that recognizes the experience and design-based industries as two of the priority sectors in the region,

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“Programa d’Impuls de les Indústries Culturals i basades en l’Experiència - PIICE” (program to promote the cultural and experience-based industries in Catalonia), and the *“Pacte Nacional per a una Societat Digital”* (Catalonian National Agreement for a Digital Society).

5. Conclusions & recommendations

The objective of the EC is one DIH in each European region and also 27 National DEI initiatives able to coordinate regional initiatives

The following action plan is proposed to go further in the Media & Content sector: organisation of workshops in key regions with all DIH in order to present existing services, platforms and share best practices and also infrastructures

Many DIH have infrastructures open to their local ecosystems, it will be good to make them known outside the local / regional ecosystems and open it to any industry in Europe or even duplicate it in other DIH if any interest. There is also a need to align standardization in order to facilitate interoperability.

- ⇒ Identification of Key regions for Media & Content (several DIH in Smart specialized region)
- ⇒ Management of the heterogeneous missions of DIH and identify complementarities

A survey has been done asking Media & Content DIH registered in the catalogue about their interest to join such a NEM DIH network, a number of them have responded YES meaning that today 14 organisations are ready to join the NEM DIH network.

6. Appendix 1

Mail sent to the Media&Content DIH declared in the catalogue

Dear all,

You are representing one of the DIH registered in the catalog and focusing on Media&Content. One of the ambition of the European Commission is to organize networks of DIH in a number of domains in order to exchange best practices but also to share platforms and any tools facilitating usage of ICT technologies in the European industry.

Looking to Media&Content, I am representing the NEM European Technology Platform (www.nem-initiative.org). The **NEM Initiative** (New European Media Initiative) was established as one of the European Technology Platform under the Seventh Framework Program, aiming at fostering the convergence between consumer electronics, broadcasting and telecoms in order to develop the emerging business sector of networked and electronic media. In order to respond to new need and requirements of the Horizon 2020 program, the NEM initiative enlarged its focus towards creative industries and changed its name from Networked an Electronic Media Initiative to New European Media, dealing with Connected, Converging and Interactive Media & Creative Industries, driving the future of digital experience.

There are a number of you which are already member of this platform (membership is free of charge) and we are investigating the interest to build and animate a Network of Media&Content DIH. Such a network should have the following benefits for you:

- Sharing best practices between DIH
- Exchange between industries having similar needs and requirements
- Methodology definition and update
- Identify user needs trends and get ahead of them to define new strategic roadmaps for technology evolution to cope with future and upcoming needs.
- Ease innovation transfer overcoming national/regional frontiers.
- Support and promote a constant dialogue between NEM DIHs to identify complementarities, synergies and potential collaborations leading to a better service offering to its regional companies and businesses
- Collect requirements from your “customers” in order to influence future research through the NEM Strategic Research and Innovation Agenda

To achieve such a goal we are proposing the following methodology:

For the setup of network comprising the NEM DIH, the steps defined by the WG1 DIH of the roundtable on DEI will be followed:

Step 1: Identify the target constituency: media and content industries have been already identified as a key target by NEM. It has to be defined the following details:

- d. What types of companies do these sectors comprise?
- e. What are the industry needs?
- f. What are the regional characteristics and specialisms? What support is already available within the region?

Step 2: Develop the vision and business plan for the DIH

Step 3: Identify what is already available at EU level, what regions are represented and what are not.

Step 4: Define the services that the DIH should offer

Step 5: Build links and establish collaboration with other hubs at regional, national, EU and global level.

If you are interested to join such a Network, please let me know replying to this email, we shall setup a specific mailing list and an online repository where you can find relevant documents of the sector.

7. Appendix 2

Example of Digital Catapult table providing information on DIH requirements

Ecosystem	Service	Activities
	Awareness creation	Information dissemination, conferences, newsletters
	Visioning and strategy development	Scouting, innovation, strategy development
	Brokerage	Workshops, webbased connecting supply and demand, bilateral contacts
Technology	Inter-hub collaboration	Connecting trans-regional needs and services
	CR&D	Technology concept development, proof of concept
	Technical support on scale-up	Concept validation, prototyping, small series production
Business	Commercial infrastructure	Renting for R&D, low rate commercial production
	Testing and validation	Certification, product demonstration, product qualification
	Incubator/accelerator support	Voice of customer, market assessment, business development, consortia building
Education	Access to finance	Financial engineering, connection to funding sources, investment plans
	Business intelligence	Market intelligence, market assessments
	Commercial training	Courses, workshops, and other activities to train personnel
	Trans hubs learning	Training of other hubs and competence centres
	Public education activities	Facilitate student activities by offering technological infrastructure for educational purposes



Draft Digital Innovation Hub Digital Catapult

Ecosystem	Service	Activities	Digital Catapult
Technology	Awareness creation	Information dissemination, conferences, newsletters	Events are organised on a daily basis with our partners such as the Knowledge Transfer Network and others to ensure the UK community remains engaged with the latest technological and policy happenings.
	Visioning and strategy development Brokerage	Scouting, innovation, strategy development Workshops, webbased connecting supply and demand, bilateral contacts	Focused on driving innovation within the UK by aligning our strategy with UK government priorities and industry's needs, both large and small. Addressing the need to connect stakeholders via the value chain from research to innovation, as a neutral broker. Our innovation services ensure that we are bringing large industry in contact with small companies through tailored events such as Pit Stops, Innovation Workshops and Hackathons.
	Inter-hub collaboration CR&D	Connecting trans-regional needs and services Technology concept development, proof of concept	As a national organisation, we have centres across the UK in order to ensure that regions continue to have access to the latest technological infrastructure and technical and business expertise. We participate in a number of R&I projects on a national, regional and European projects.
	Technical support on scale-up Commercial infrastructure	Concept validation, prototyping, small series production Renting for R&D, low rate commercial production	We run a number of programmes specifically focused on enabling SMEs to scale up. Digital Catapult supplies commercial R&D and exclusive access to academic research as well as access to facilities. Motion Capture studio to develop content for creative and non-creative industries. Immersive Labs equipped with a range of the latest augmented and virtual reality hardware to encourage commercial innovation. Further programmes include the 5G testbed- state-of-the-art 5G testbed to help small innovative businesses across the UK develop new products and services. Things Connected – a testbed to support IoT technologies using an IoT LoRaWAN network across London & UK; the AI Computational Lab will facilitate access to leading cloud compute and state-of-the-art hardware architectures designed by market leaders and emerging providers, the programme will give startups the opportunity to



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accelerate product development. In addition, companies will also get access to expertise from Digital Catapult’s data science engineering team and expert partners.

Business	Testing and validation	Certification, product demonstration, product qualification	We have a number of facilities and programmes for testing and validation. These include innovation support programmes such as Things Connected – a testbed to support IoT technologies using an IoT LoRaWAN network across London & UK; the 5G testbed - state-of-the-art 5G testbed to help small innovative businesses across the UK develop new products and services; Immersive labs across the UK available for hire to demonstrate, innovate, test and experience the latest immersive technology and content.
	Incubator/accelerator support	Voice of customer, market assessment, business development, consortia building	We work very closely with industry in order to understand their needs. We have a business development team that looks to identify potential customers that are facing challenges in becoming more digital. We address these needs through our innovation services or by involving such customers in CR&D. We have run accelerator programmes such as <u>Augmentor</u> , a ten-week mentorship programme focused on early stage businesses that are developing innovative and commercially-focused applications of augmented, mixed and virtual reality.
Education	Access to finance	Financial engineering, connection to funding sources, investment plans	Through our programmes we have collaborated with UK investors such as Seedcamp who provided finance, fundraising and product development expertise.
	Business intelligence	Market intelligence, market assessments	We carry out market assessments on our four technology layers and market sectors to understand where the gaps are and how the Digital Catapult can fill them.
	Commercial training	Courses, workshops, and other activities to train personnel	We have organised such trainings such as <u>Cyber 101</u> , a business advice and mentoring programme to help new UK cyber security firms grow and succeed.
	Trans hubs learning	Training of other hubs and competence centres	Sharing of best practices via regular local centres meetings to ensure that lessons learnt are made known. Regular invitations to events to ensure that centres are kept up to speed with the latest happenings.
	Public education activities	Facilitate student activities by offering technological infrastructure for educational purposes	We have offered placements to school work experience students and university interns. We also have Catapult Researchers in Residence (RIR) programme is designed to enable leading academics to spend research visits in one or more Catapult centres. Each Researcher in Residence will undertake a project that will generate impact from research.