



thinknexus

1st Thematic

Workshop report

Deliverable 2.4



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Executive Summary

The 1st Think NEXUS Workshop took place in the Walter E. Washington Convention Center¹, Washington D.C. on 10th July 2019, in parallel with the GCTC Expo². This 1-day event was shaped for launching the first round of face-to-face discussions of Think NEXUS 3 expert groups fostering next EU-US collaboration over Next Generation Internet thematic areas. Taking place in the D.C. area, the meeting introduced Think NEXUS approach to the public and provided an opportunity to the Expert Groups to lead exclusive exchanges towards their objectives.

Both the Expert Group Meetings and Public Session were very well attended with 41 attendees in total, both from EU and the US, representing research and innovation, academia, policy and the industry.

A number of key messages were highlighted both from the keynote speakers and from the 3 different expert groups. Fruitful discussions and debated among the expert group members allowed to extract valuable observations which can set the basis for further work throughout the duration of the project.

One of the key observations was that EU and US innovation support schemes were intrinsically different when considering the Next Generation Internet. Transversal cooperation between research, industries and policy makers has no equivalent in the US.

In terms of application areas, the need of identifying common application areas (such as the area of disaster relief) between the two regions is key for pursuing collaboration.

It was also highlighted that current networks are struggling to support NGI related research experiments as they are commercial focused and need to be significantly updated. In parallel with the previous statement, it was also highlighted that Joint Experimentation Testbeds & Networks are needed while the need of engaging big players (platforms such as Google, Amazon, etc.) to offer infrastructure for research is vital.

Last but not least, the need of a joint funding scheme between EU and US should be of high priority as both regions need to collaborate and not to compete with each other.

¹ <http://eventsdc.com/Venues/ConventionCenter.aspx>

² <https://pages.nist.gov/GCTC/event/gctc-expo-2019/>

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Contributing partners	Jose Gonzalez, Giulia Pastor (IINV), Fabrice Clari, Hubert Santer (INNO)
Reviewer(s)	Peter Van Daele (IMEC)

Abstract

The 1st Think NEXUS Workshop, took place in the Walter E. Washington Convention Center, Washington D.C. on 10th July 2019. The overall agenda was divided into three pillars: the first pillar, which took place in the morning, included two presentations regarding Think NEXUS by consortium members and four presentations by invited key note speakers. The second pillar, included three parallel breakout sessions of the expert groups while the third pillar included a short reporting from the expert groups and a “live wrap-up”/conclusions session. All three Expert Groups (Policy, Science & Technology, Innovation & Entrepreneurship) reached to a number of key messages and outcomes and have set the basis for further work to be done throughout the lifespan of the project.

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Keywords

Next Generation Internet; EU-US collaboration; Think Tank; Workshop; Science and Technology; Policy; Innovation and Entrepreneurship;

Revisions

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Acronyms and definitions

Acronym	Meaning
AI	Artificial Intelligence
DIN	Digital Innovation Networks
DSM	Digital Single Market
EU	European Union
GDPR	General Data Protection Regulation
IFRI	French Institute of International Relations
IoT	Internet of Things
JCG	Joint Consultative Group
NGI	Next Generation Internet
NITRD	Networking and Information Technology Research and Development
NSF	National Science Foundation
OECD	Organisation for Economic Co-operation and Development
PEST	Political, Economic, Socio-cultural and Technological
R&I	Research and Innovation
SMEs	Small and Medium-sized Enterprises
TISA	Trade in Services Agreement
TTCSP	Think Tanks and Civil Societies Program
WP	Work Program

Think NEXUS project

The Internet of the future should be more open, provide better services, more intelligence, greater involvement and participation. It needs to reflect the European values". EU's Next Generation Internet initiative is a key opportunity to rethink the way the Internet works today and develop a vision involving voices from across Europe, the US, and beyond, an Internet that embodies the values Europe holds dear, such as openness, inclusivity, transparency, privacy and cooperation.

Thinking global, the NGI will be successful only if a worldwide consensus is found, enabling the internet a Human-centric process. To that end, collaboration between the US and the US, both areas being strongly committed to develop the future of Internet, to shape a sustainable landscape for NGI developments. Indeed, the NGI initiative should design specific actions for policy collaboration, shared technology development and interaction between user-communities, with other initiatives in the world where parts of the NGI infrastructure are designed and deployed; and the US are one of the main places where such activities are held.

Think NEXUS aims to reinforce EU-US collaboration, through its dedicated Think Tank, involving major stakeholders (researchers, entrepreneurs, policy makers) from both sides of the Atlantic on NGI-related thematic in three Focus Areas: Science and Technology, Innovation and Entrepreneurship and Policy. Its mission is to become an important and lasting entity, involving stakeholders and disseminating NGI visions in a collaborative approach for tackling NGI challenges, and benefit society at large. More specifically, Think NEXUS is expected to boost the strategic research, industrial partnerships and policy compliances among the respective communities of the NGI areas and thus, result in substantial socio-economic benefits in both the EU and the US.

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**CHAPTER 1 -
Introduction &
Purpose**

Introduction

Think NEXUS's vision is to become an important tool in the arsenal of EU and US policy makers, supporting them towards a cooperative a collaborative approach for tackling NGI challenges for the benefit of the society and citizens. Adding to the above, Think NEXUS aims to become an international node for NGI cooperation between EU and US by bridging and bringing together EU and US stakeholders and actors from all related backgrounds (technological, business, policy) in order to facilitate the coordination of research and innovation initiatives in the EU and US and to promote collaboration between the different research groups by facilitating the creation of a NGI open ecosystem.

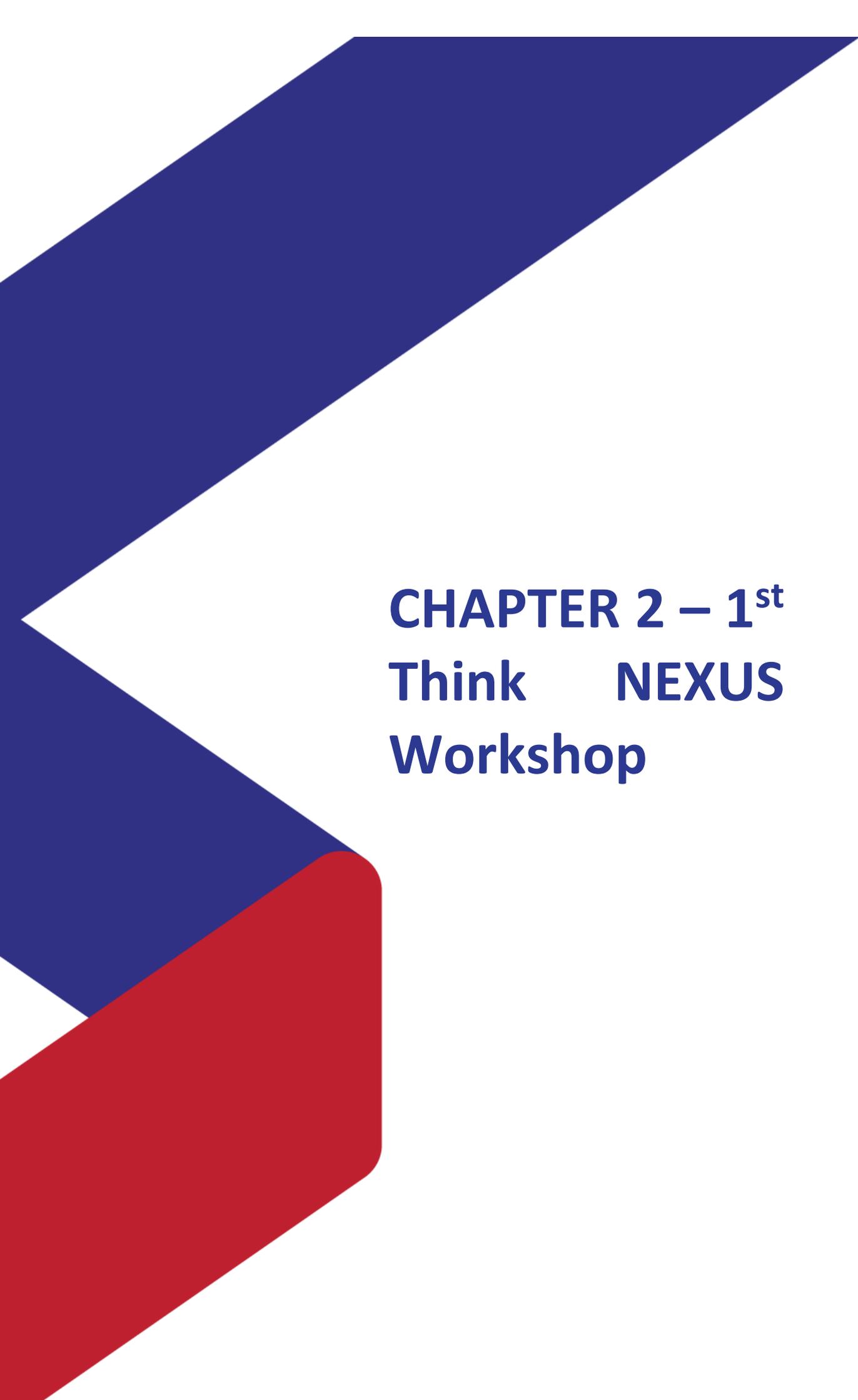
Therefore, one of the key activities to be implement is the organisation of a series of thematic workshops, which will bring together stakeholders from both sides of the Atlantic, to tackled the area of NGI collaboration between the EU and US.

To this goal, the first Thematic Workshop has been organized in the [Walter E. Washington Convention Center](#), Washington D.C. on 10th July 2019 bringing together experts and other attendees from the 3 Think NEXUS Expert groups, for a first round of face-to-face discussions and presentations.

Contents of this Deliverable

The current document includes the following sections:

- **CHAPTER 2 – 1st Think NEXUS Workshop** provides an overview of the overall workshop
- **CHAPTER 3 - Policy Expert Group Meeting** presents an overview of the works and main outcomes taken place with the Policy Expert Group meeting
- **CHAPTER 4 – Science & Technology Expert Group Meeting** presents an overview of the works and main outcomes taken place with the Science and Technology meeting
- **CHAPTER 5 – Innovation & Entrepreneurship Expert Group Meeting** presents an overview of the works and main outcomes taken place with the Innovation & Entrepreneurship meeting
- **CHAPTER 6 – Conclusions** provides a short overview of joint conclusions and outcomes derived from the workshop.



CHAPTER 2 – 1st
Think NEXUS
Workshop

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Overview

The meeting was held in the [Walter E. Washington Convention Center](#), Washington D.C. on 10th July 2019, in parallel with the [GCTC Smart and Secure Cities and Communities Challenge Expo](#) which was organised by NSIT, allowing for a greater participation both from the EU and from the US side. The Think NEXUS workshop, had in total **41 attendees**, 28 from the US and 13 from the EU, representing research and innovation, academia, policy and the industry.

The attendees had a variety of backgrounds but were particularly interested in the Next Generation Internet (NGI) domain, and especially in collaboration between EU and US. Each Expert Group has a mix of EU and US experts in the defined topics, however, in the meeting additional participants were also welcomed to join the Expert Group meetings. The aim of the Expert Groups is to discuss areas where it is believed collaboration is possible and put forward recommendations for joint EU-US cooperation.



Figure 1: Walter E. Washington Convention Center

Meeting Goals & Agenda

This 1-day event was shaped for launching the first round of face-to-face discussions of Think NEXUS 3 expert groups fostering next EU-US collaboration over Next Generation Internet thematic areas. Taking place in the D.C. area, the meeting introduced Think NEXUS approach to the public and provides an opportunity to the Expert Groups to lead exclusive exchanges towards their objectives.

Operational objectives

- **Objective 1:** Setup the first round of discussions defining the scope of each group discussions, associated stakeholders and technologies / business context / legal framework
- **Objective 2:** Define the key elements to be further developed in next steps and design cooperation objectives within each expert group
- **Objective 3:** Discuss the intersection between EC NGI related initiatives and US Tomorrow's Internet related initiatives and interactions with the related ecosystems
- **Objective 4:** Initiate discussions for a future EU/US roadmap for NGI.

The overall agenda was divided into three pillars: the first pillar, which took place in the morning, included two presentations regarding Think NEXUS by consortium members and four presentations by invited key note speakers. The second pillar, included three parallel breakout sessions of the expert groups while the third pillar included a short reporting from the expert groups and a “live wrap-up”/conclusions session.

Promotional Material



Figure 2: Promo Material

Overall Agenda



AGENDA Main room: 156

TIME	SESSIONS
08:30 – 09:00	Registration and welcome coffee
09:00 – 09:05	Welcome & short introduction to Think NEXUS Fabrice Clari, Think NEXUS (Inno TBD)
9:05 – 9:20	Introduction to the meeting & events * Chris Greer, Director of the Smart Grid and Cyber-Physical Systems Program Office and National Coordinator for Smart Grid Interoperability, NIST
9:20 – 9:35	Opening Remarks * Peter Calvino, Minister Counselor for the Digital Economic Policy, European Union Delegation to the United States
9:35 – 9:50	NSF-EU Collaboration in Networking Research Ken Calvert, Division Director for Computer and Network Systems in the Computer and Information Science and Engineering (CISE) Directorate, NSF
09:50 – 10:05	Internet Society views on NGI Andrew Sullivan, President & CEO, Internet Society
10:05 – 10:20	Think NEXUS and Next Generation Internet cooperation between the EU & US* Jose Gonzalez, Think NEXUS (Interinnov)
10:20 – 10:35	Introduction to the 3 Expert Groups breakout sessions* stakeholders, approaches, methods and objectives * Peter Van Daele, Think NEXUS (IMEC)
10:35 – 11:00	Coffee break
11:00 – 12:30	Three Breakout sessions with discussions over Expert Groups areas' scope and goals Rooms – Science and Technology: 156, Innovation and Entrepreneurship: 155, Policy: 153AB.
12:30 – 13:30	Networking lunch
13:30 – 15:00	Three Breakout sessions with discussions over Expert Groups developments framework, operational objectives and first sprint
15:00 – 15:30	Networking coffee break
15:30 – 16:30	Plenary – Breakout sessions outcomes *Live* wrap-up of breakout sessions outcomes Potential collaboration identified
16:30 – 16:45	Think NEXUS Expert Groups next steps and Q&A
16:45 – 17:00	Meeting key outcomes and conclusion

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Figure 3: Think NEXUS Workshop Agenda

Photos from the 1st Think NEXUS Workshop



Figure 4: Think NEXUS participants



Figure 5: Fabrice Clari, INNO



Figure 6: Chris Greer, NIST



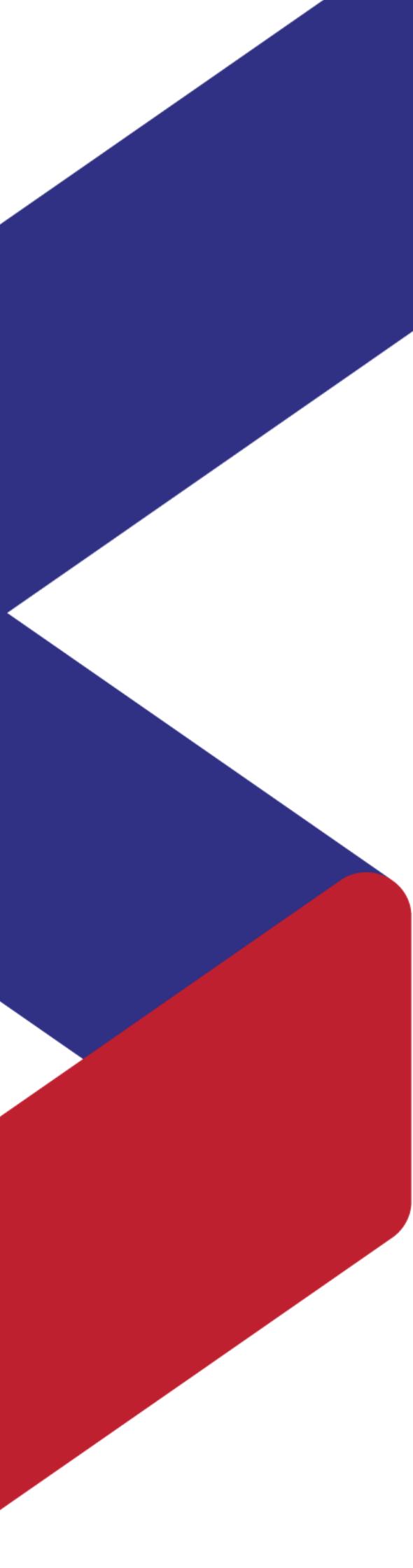
Figure 7: Peter Fatelnig, EU Delegation in the US



Figure 8: Andrew Sullivan, Internet Society



Figure 9: Ken Calvert, NSF



**CHAPTER 3 -
Policy Expert
Group Meeting**

Scope of the Expert Group

The United States of America (US) formalized its cooperation on science & technologies relationship with the EU in 1990 with the adoption of the Transatlantic Declaration. Following the 2007 US-EU Summit, a Declaration on Enhancing Transatlantic Economic Integration and Growth laid the foundation for a growth-driven dialogue. Research and innovation cooperation between the EU and the US is governed by the Agreement for Scientific and Technological Cooperation, which entered into force in 1998.

The EU-US S&T cooperation agreement was renewed for an additional five years in October 2018 and is now valid until 14 October 2023. The Joint Consultative Group (JCG) which oversees this cooperation agreement last met in October 2017.

Within the EU/US Future Networks Workshop held on the 11th of November 2017, the National Science Foundation (US), European Commission DG CONNECT (EU) and experts launched a discussion round centered on Wireless architecture & Next Generation Internet and discussed potential areas of collaboration.

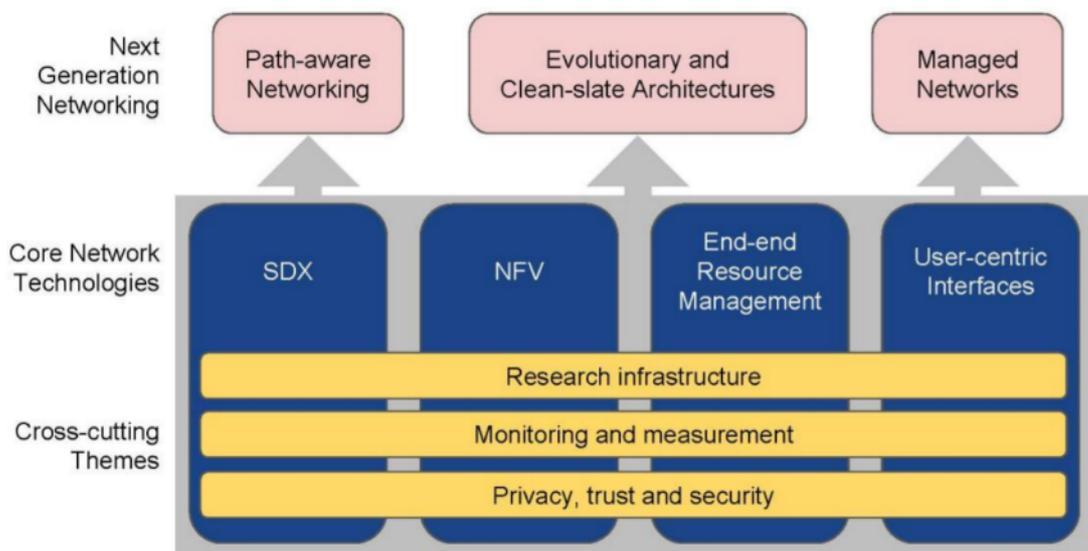


Figure 10: EU/US Future Networks Workshop - Mapping of NGI technologies & themes (source: Workshop report³)

The prime objective of this first Policy Expert Group meeting was to enable a first round of exchanges between the experts and attendees upon the priorities to consider for policy cooperation. A first presentation of the context was performed by the policy co-chair before

³ Report available at: <http://www.cs.cmu.edu/~prs/eu-us-report-nov-2017.pdf>

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launching discussions with participants upon the priorities for EU/US policy-related cooperation.

These discussions were driven upon a set of questions:

- What are the key challenges Internet will face in the next 5-10 years that are to be focused upon by researchers, entrepreneurs, intermediaries and public authorities?
- What are related policies that foster (or hinder) EU-US collaboration over internet-related technologies and measures would enable / reinforce EU-US collaboration on NGI-related topics (joint calls, research support schemes,...)
- What are the 'technical / application areas' that could benefit being tackled in EU-US bilateral exchanges and thus Think NEXUS need to prioritise for fostering EU-US collaboration related to NGI?

Participants

The Policy Group Expert meeting gathered 14 attendees, 6 from the EU and 8 from the US. Attendees belong to a wide array of institutions, from EU public authorities to major US think tank leaders, including universities, clusters and associations.

Table 1: Policy Expert Group workshop participants

NAME	ORGANISATION	REGION
Claire Chen	National Council of University Research Administrators (NCURA)	US
Dan Caprio	The Providence Group	US
Fabrice Clari	inno	EU
Glenn Ricart	US Ignite	US
Hubert Santer	inno	EU
Latif Ladid	University of Luxembourg	EU
Lea Shanley	Nelson Institute, Univ. of Wisconsin-Madison	US
Mark Berman	Raytheon BBN	US
Martina De Sole	APRE	EU
Maryam Rahmani	Maryam Rahmani LLC	US
Peter Fatelnig	EU delegation to the U.S.	EU
Ray Walshe	Dublin City University	EU
Yolanda Ursa	INMARK	US
Zhi-Li Zhang	University of Minnesota	US

Meeting Agenda

11:00-11:20 Tour de table & short presentation of expertise

11:20-11:30 Policy co-chair introduction – EU/US science & technology cooperation

11:30-11:40 What collaborating upon Next Generation Internet means (reminders on the topics addressed)

11:40-12:40 Discussion Session 1: Current Status and framing the scope of discussions

12:40-13:30 Lunch

13:30-15:30 Discussion Session 2: Selecting priorities for discussions, collaborations & next steps

Photos



Figure 11: Policy Expert Group roundtable

Key Messages and Outcomes

After having introduced themselves & the topics / areas they consider of relevance for discussions, the first exchanges within the policy group tackled the identification of the main challenges the internet will have to face in the next 5 to 10 years. These challenges also included notions essential to EU-US cooperation and wider considerations. Figure 12 presents an overview of the thematics mentioned and discussed by experts within the first sessions.

Challenges identified

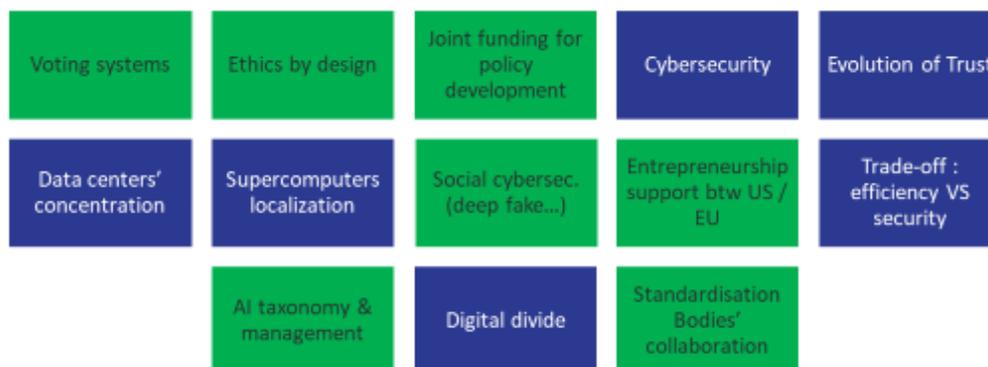


Figure 12: Policy-related challenges identified

During the second session, the aim was to prioritise these considerations with regard to:

- Their relevance about EU-US bilateral cooperation
- The fields in which the Think NEXUS think tank can have an influence upon

Main outcomes

This meeting enabled Experts to identify a first set of key challenges that are to be further explored within the next developments.

- **NGI cooperation support schemes**

As a first observation, Experts noted that EU and US innovation support schemes were intrinsically different when considering the Next Generation Internet. Transversal cooperation between research, industries and policy makers has no equivalent in the US. Moreover, most bilateral cooperation schemes do not provide funding for the other part, the European Commission financing EU stakeholders and US agencies their nationals. Joint or coordinated funding schemes are lacking for allowing EU/US cooperation, notably concerning entrepreneurship support.

Key parameters:

- Trust management in complexified environments
- Security intelligent trade-off (efficiency / security)

- Pilot Project in the field of Distributed Ledger Technologies (DLTs)⁴

- **US and EU standardization bodies' collaboration across NGI technologies**

As Next Generation Internet initiative explores new fields and technologies that are creating new international standards. These NGI-related technologies could confer with the opportunities to EU and US standardization bodies to set cooperation mechanisms breaking out silos and thus fostering the fast-tracking of standards, benefiting both sides in the international competition.

Key parameters:

- IoT developments and NGI principles integration
- Standardization bodies cooperation mechanisms

- **Developing a common language on Artificial Intelligence**

AI is a major technology the Next Generation Internet builds upon. As such, the development of solutions generate a new field of ruling for policy makers. However, the semantics behind AI-technologies and applications are not shared between both sides of the Atlantic (and event within each region itself). Cooperation on AI taxonomy could confer the opportunity to better tie EU and US developments and mutual understanding, thus fostering this technology's growth.

Key parameters:

- Translating AI developments in understandable terms for policy makers
- Algorithm fairness & transparency
- Identifying the data per AI applications

- **Building cooperation upon shared values**

NGI thematic covers a wide range of parameters linked to citizens' rights (data privacy, security, trust etc.). These themes are of concern for both EU and US authorities, which are facing similar and growing challenges on these questions – essential for their democracies.

The questions of trust and security in online voting systems as well as the 'social cybersecurity' (tackling aspects such as misinformation, etc.) of citizens were notably deemed as relevant within EU/US collaboration schemes, in line with the values these regions share.

⁴ <https://ec.europa.eu/digital-single-market/en/news/pilot-project-co-creating-european-ecosystem-distributed-ledger-technologies-social-and-public>

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In conclusion, the Expert Group agreed that there are many options for transatlantic collaboration, and it was discussed which topics and areas are most suitable for collaboration initiatives.

Key parameters:

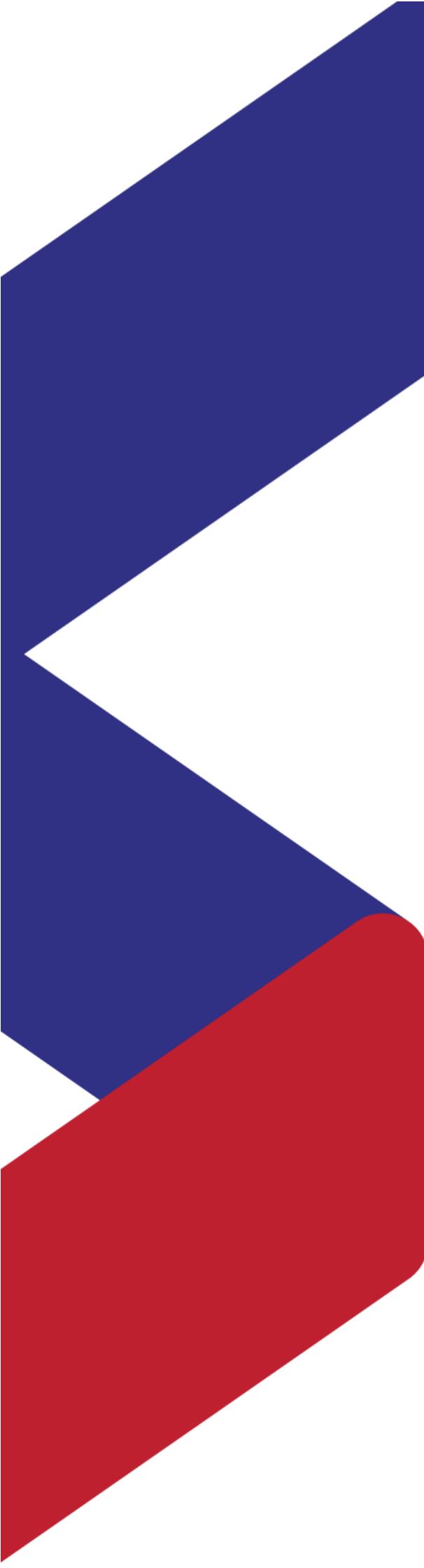
- Trust management in complexified environments
- GDPR / Californian policy
- Security intelligent trade-off (efficiency / security)
- Pilot Project in the field of Distributed Ledger Technologies (DLTs)⁵
- Digital divide

Next Steps

As for the next steps of the Policy Expert Group, following priorities were identified:

- Continuous off-line collaboration for formulating a common report (2 pages) with recommendations and outcomes from the workshop
- Cross-cutting informations between the Expert Groups
- Identifying key industrials, researchers to consult for validating the priorities of EU and US stakeholders on these fields
- Mapping EU / US agencies across the NGI thematics for ensuring the involvement of relevant stakeholders for tackling the challenges identified

⁵ <https://ec.europa.eu/digital-single-market/en/news/pilot-project-co-creating-european-ecosystem-distributed-ledger-technologies-social-and-public>



**CHAPTER 4 –
Science &
Technology
Expert Group
Meeting**

Scope of the Expert Group

As the ST Expert Group met physically for the first time in the lifespan of the project, it was necessary for all members to get presented to the overall vision of the Think NEXUS project and meet each other. Nevertheless, these introductory meeting had some key desired outcomes defined prior to the meeting. These desired outcomes were:

- Differences and similarities in EU/US visions and identification of future challenges, roadblocks and breakthroughs;
- What are the main differences and commonalities between EU and the US approaching Internet and associated technologies?
- Identification of bodies involved in NGI Research, experimentation, funding, regulation...
- Identification of possible interactions and collaborative actions.

In order to reach to the desired outcome and to facilitate the discussions, the chairs of the ST Expert Group have predefined a set of questions/topics for discussion around two thematic areas – Current Status and Future Internet -, that have been shared with all members prior to the 1st physical meeting. It is crucial to mention at this stage, that the floor was open for additional topics as the experts and attendees has the opportunity either to skip a question or add a topic for discussion. These questions were the following:

Current Status – Setting the Basis

- What are the Key Technologies related to NGI and which are the technological priorities per region (EU, US)?
- How EU and US support NGI? Through which mechanisms?
- Is there any active or foreseen collaboration mechanism between the two regions? Is there a need for such mechanism? Why?
- Are there any enablers or obstacles enhancing or preventing collaboration?
- Who are the most important players/stakeholders? NSF, NIST, NITRD, DG Connect? Private stakeholders?

Future Internet and Collaboration Opportunities

- What will the internet look like in 5 years, 10 years? What are the main technical challenges? Where is the most potential?
- Which are the NGI related technologies that both regions need to put emphasis on? Is there room for collaboration? Why collaboration is needed?

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- In which areas (verticals) you see room for collaboration? i.e. digital divide, fake news, etc..

Participants

The Science & Technology Expert Group included 21 attendees in total, 7 from the EU and 14 from the US. 8 out of the 21 members are permanent members of the Expert Group, while the rest were external attendees who wish to get engaged into future activities of the Expert Group.

NAME	ORGANISATION	REGION
Nikos Sarris (Chair)*	ATC SA	EU
Peter Van Daele (Co-Chair)*	IMEC	EU
Vasilis Papanikolaou (Deputy Chair)*	ATC SA	EU
Martin Serrano*	National University of Ireland Galway	EU
Stephen Farrell*	Trinity College Dublin, The University of Dublin	EU
Xavier De Foy	InterDigital	EU
Stefano Lami-Moscheni	Italian Embassy in the US	EU
Florence Hudson*	Northeast Big Data Innovation Hub	US
Tariq Samad*	University of Minnesota	US
Heather Flanagan*	Spherical Cow Consulting	US
Ken Calvert	NSF	US
Tamer Nadeem	Virginia Commonwealth University	US
Jonathan Fink	Portland State University	US
JJ Jamison	Juniper Middleware And Grid Interagency Coordination Group	US
Jerry Sobieski	NORDUnet	US
Sebastian Barillaro	NIST	US
Muhammad Khan	Arkansas Tech University	US
Khalil Yazdi	Yazdi and Associates, LLC	US
Chris Greer	NIST	US
Georgeta Aragoiu	Presidential Innovation Fellow	US
Katherine Wolf	Pacific Northwest National Lab (PNNL)	US

*Science & Technology Expert Group Permanent Members.

Meeting Agenda

11:00-11:10 Introductory Session

11:10-11:30 Tour de table

11:30-12:30 Discussion Session 1: Current Status and Setting the Basis

12:30-13:30 Lunch

13:30-15:30 Discussion Session 2: Future Internet and Collaboration Opportunities

Photos

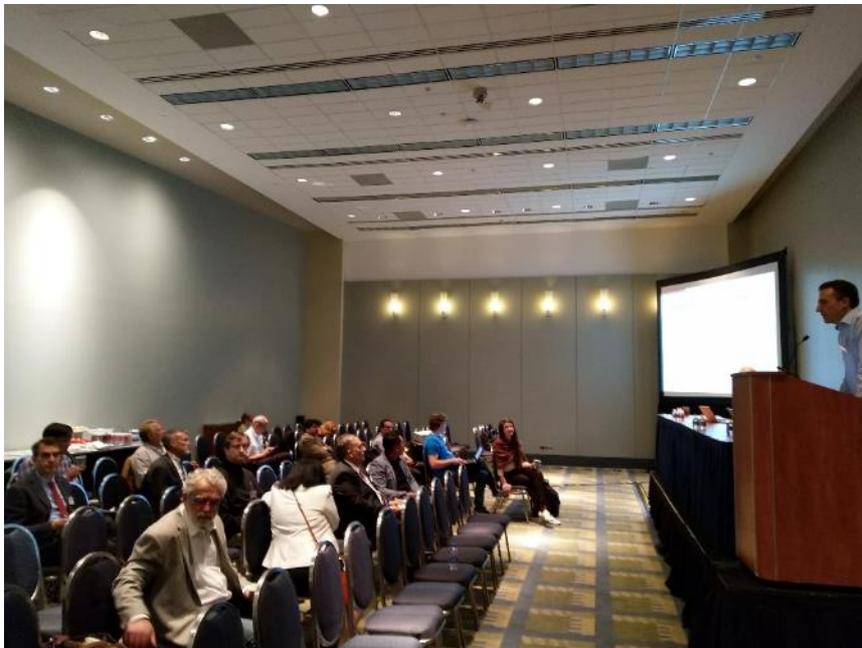


Figure 13: Nikos Sarris, ATC (Chair)



Figure 14: S&T Expert Group Participants (1)



Figure 15: S&T Expert Group Participants (2)

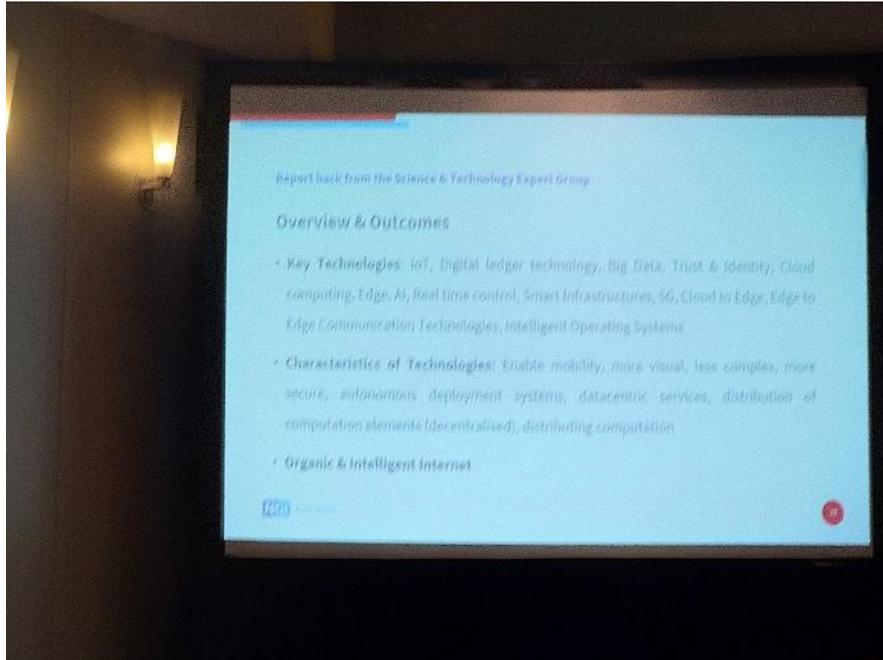


Figure 16: S&T Expert Group Outcomes

Key Messages and Outcomes

The overall approach of this 1st Expert Group meeting, was to allow all members to brainstorm mainly based on the pre-defined set of questions. However, it was obvious that in many cases additional topics popped out during the discussion.

One of the first key topics that all Expert Group members raised, is the fact that overall S&T polices need to synchronize with technology developments as in many cases policies are considered to be obsolete. Moreover, the need of a joint funding scheme between EU and US should be of high priority as both regions need to collaborate and not to compete to each other. Another point relevant to policy makers, is that there seems to be a communication/coordination bottleneck between policy makers from both regions and funding agencies, which need to be addressed.

Adding to the above, most Expert Group members agreed that current networks are struggling to support NGI related research experiments as they are commercial focused and need to be significantly updated. In parallel with the previous statement, all members concluded that Joint Experimentation Testbeds & Networks are needed while the need of engaging big players (platforms such as Google, Amazon, etc.) to offer infrastructure for research is vital.

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An agreement also reached among all experts regarding to which are the key NGI technologies and also which are the most important characteristics that these technologies should have, in order to serve the purpose of the future internet.

Last but not least, all Expert Group members agreed to the fact that standardisation bodies, industrial representatives and user representatives should also be included in the NGI discussion.

In conclusion, the Expert Group agreed that there are many options for transatlantic collaboration, and it was discussed which topics and areas are most suitable for collaboration initiatives. Thus, topics that are not too reliant on the involvement of competing companies (e.g. that address world-wide societal challenges, or that focus on low-TRL fundamental research) are promising candidates. The meeting led to a fruitful discussion of numerous important aspects that helped both sides to understand in more detail the initiatives, the players, and their focus on the other side.

Overview & Outcomes (in a nutshell)

- **Key Technologies:** IoT, Digital ledger technology, Big Data, Trust & Identity, Cloud computing, Edge, AI, Real time control, Smart Infrastructures, 5G, Cloud to Edge, Edge to Edge Communication Technologies, Intelligent Operating Systems
- **Characteristics of Technologies:** Enable mobility, more visual, less complex, more secure, autonomous deployment systems, data-centric services, distribution of computation elements (decentralised), distributing computation
- **Organic & Intelligent Internet**

Key Suggestions (in a nutshell)

- Formal Collaboration Mechanism between EU and US is needed for getting great results
- The need to engage Standardisation bodies, Industrial Stakeholder Groups and User Representatives Groups
- Policies need to synchronize with technologies
- Identify Key Application Areas: Connected Healthcare, Global Challenges, Disaster Relief
- Need for a joint branding: introduce NGI terminology in the US funding environment.

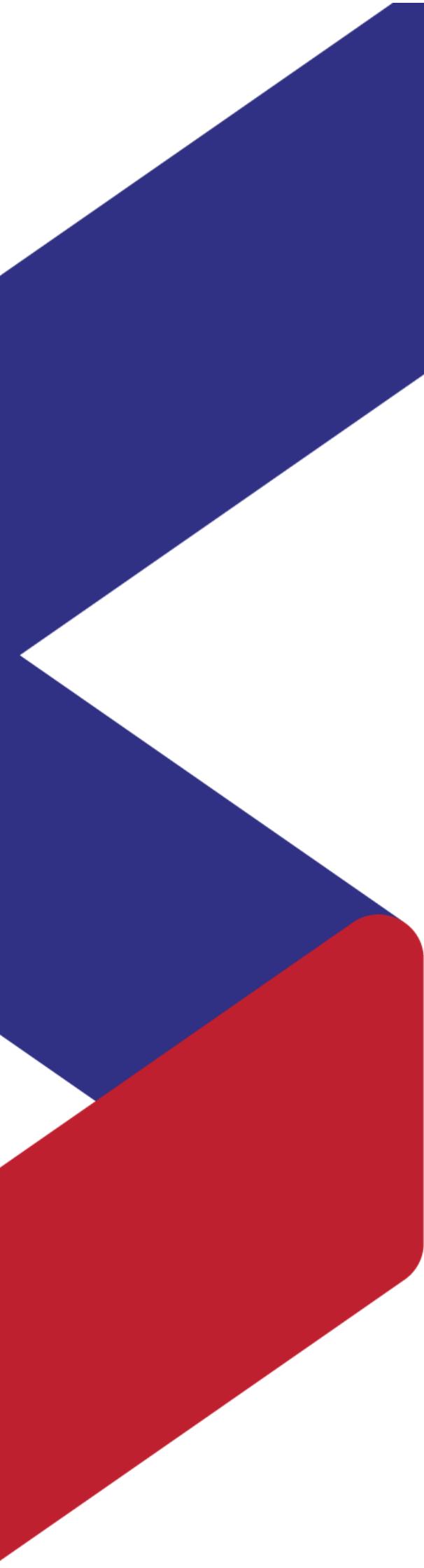
Next Steps

Action plan for Expert Group

- Annual physical meetings

D2.4 1st Thematic Workshop Report

- Continuous off-line collaboration for formulating a common report (2 pages) with recommendations and outcomes from the workshop
- Encourage participation from additional members from external organizations
- Collaboration with EU and US networks and associations (e.g. IEEE)
- Organise networking opportunities in relevant events to encourage EU-US research and commercial collaboration



**CHAPTER 5 –
Innovation &
Entrepreneursh
ip Expert Group
Meeting**

Scope of the Expert Group

Science and Technology are the backbone in the fast evolution of the Internet as we know it, having the Policy as the steering force towards the longer-term vision. In this scenario, Innovation and Entrepreneurship are the operating areas where the actual exploitation of emerging technology is tangible in market value, having its economical and societal impacts. They are the key building blocks of competitive and dynamic economies, being the enablers to transform the technological excellence of Internet into economic performance, competitiveness, growth and application into societal challenges (e.g. privacy, trust, openness and inclusivity) and vertical domains (e.g. health, smart cities, industry 4.0, retail among many others). Countries and regions with vibrant innovation and entrepreneurship ecosystems tend to higher productivity rates, leading to increased economic growth and more robust job creation. Innovation fosters shared prosperity by stimulating formal employment and increasing wages. About two-thirds of Europe's economic growth over the last decades has been driven by innovation.

The mission of this Expert Group is to assess the dual vision of the Next Generation Internet with regard to the Digital Economy in the next 15 years and create a narrative capable of resonating both in Europe and the USA. Pinpointing shared 'pains' that can be addressed in a more effective and powerful manner in the global market by joining forces, challenging rivalling innovation powerhouses. According to the European Commission's 2019 European Innovation

Scoreboard⁶, the EU continues lag behind South Korea, Canada, Australia and Japan, but compared to last year, it has overtaken the United States. However, China is catching up at two times the EU's innovation performance growth rate, while losing ground relative to Japan and South Korea.

The first Think NEXUS workshop aimed to highlight:



Figure 17: 2019 Innovation Scoreboards

⁶ Cf. https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en

D2.4 1st Thematic Workshop Report

- What are the **natural strengths and weakness of the European and US ecosystems separately**? Before thinking how to collaborate, it is crucial to set a baseline on those topics that we believe we do right and those to be improved;
- What are the **impediments and -especially- the opportunities** that will **empower a stronger joint Transatlantic collaboration**?

Participants

In overall terms, the Expert Group relies on the expertise of a total of 20 experts, 12 from them from Europe and 8 from the USA. During the first workshop, 11 participants contributed to the discussions of the group at some point.

NAME	ORGANISATION	REGION
Jose Gonzalez (Chair)*	interinnov	EU
Daniela Coutinho (Co-Chair)*	SPI	EU
Joné Vaitulevičiūtė*	Startup Wise Guys	EU
Jennifer Austin*	Risky Business	EU
Raimund Bröchler*	Intrasoft	EU
Yolanda Ursa	INMARK	EU
Wilfred Pinfold*	URBAN.SYSTEMS	US
Shivakumar Mathapathi*	Dew Mobility/ Santa Clara University	US
Jonathan Litchman*	The Providence Group	US
Camille Sailer	European American Chamber of Commerce New Jersey	US
Georgeta Dragoiu	Presidential Innovation Fellow	US

* Innovation & Entrepreneurship Expert Group Permanent Members.

Meeting Agenda

11:00-12:30 Session #1 – Open Participation

- Objective: go through a quick assessment on the perspective of the experts according to their experience at local level (EU or US)
- Starting point and rules (10 mins)
- Roundtable (75 mins)
 - Each expert to share his/her perspective on topics related to their activities (early stage startups, venture capital, grant schemes, acceleration, open innovation, etc.) and related to their local landscape (Europe/USA depending on the expert)
 - Criticism is encouraged
- Wrap-up (5 mins)

13:30-15:30 Session #2 – A closer look into joint collaboration

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- Objective: identify the drivers and blockers for a mutual and beneficial cooperation
- Starting point (10 mins)
- Roundtable (90 mins)
 - Biggest motivations and benefits for a joint partnership/activity in the other side of the Atlantic?
 - Biggest obstacles to move forward?
 - What are the key market areas?
 - Best instruments for joint collaboration (public or private)?
- Collecting inputs (15 mins)
- Wrap-up (5 mins)

Photos



Figure 18: Innovation + Entrepreneurship Expert Group roundtable

Key Messages and Outcomes

The open discussion format of the session allowed each expert to participate actively, being able to provide their point of view freely, being encouraged to address friction points in terms of bilateral collaboration.

Some of the most relevant aspects that were considered are:

- **Concept of innovation.** Definitions matter; it's hard to have effective understanding and build on concepts without them. One of the basic discussions that took place was about the vision of 'innovation' itself, and the role that private and public sectors should play in it, which slightly differs in each ecosystem - Innovation of the market versus technological innovation. Innovation in the USA has a clear go-to-market implication.
- **Role of public administration.** Public agencies struggle to manage a landscape where technology changes at so rapid a pace that it is not realistic to consider the government as a thought leader in innovation. However, there are 2 potential aspects where policy can have a significant role: 1) allow innovation to happen, as regulation can get in the way of disruption; 2) identify how to bring society into the equation, highlighting the social issues and making them relevant. Technology sector may face the risk to lose the trust

from the citizens if cases like privacy breaches and unauthorised exploitation of personal data continue. Policy should be adapted to a local vision.

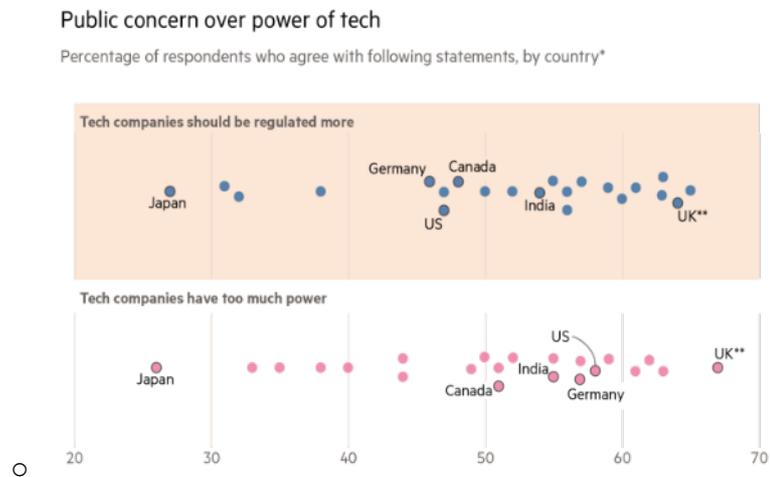


Figure 19: Public concern over power of technology
(Source: YouGov-Cambridge Globalisation Project)

In the case of Europe, the European Commission has a much stronger influence over the innovation ecosystem as a consequence of the weighty public funding instruments, such as H2020 – near EUR 80 Billion investment programme in research and innovation, and its regulatory strategy (e.g. the General Data Protection Regulation - GDPR). A few experts consider this should not be the way to go as this top-down approach may create inefficiencies in the system and leaks in terms of resources.

- **Future of Work.** Europe and the USA often have a different interpretation of the achievements/KPIs when it comes to the market impact of innovation. One good example is the discussion around the ‘Future of Work’ – creating new and better employment opportunities and jobs should be a top priority when adopting new technologies, or it is efficiency what matters the most?

The future of work encompasses changes in work, the workforce, and the workplace

△ Current work options ▲ Future work options

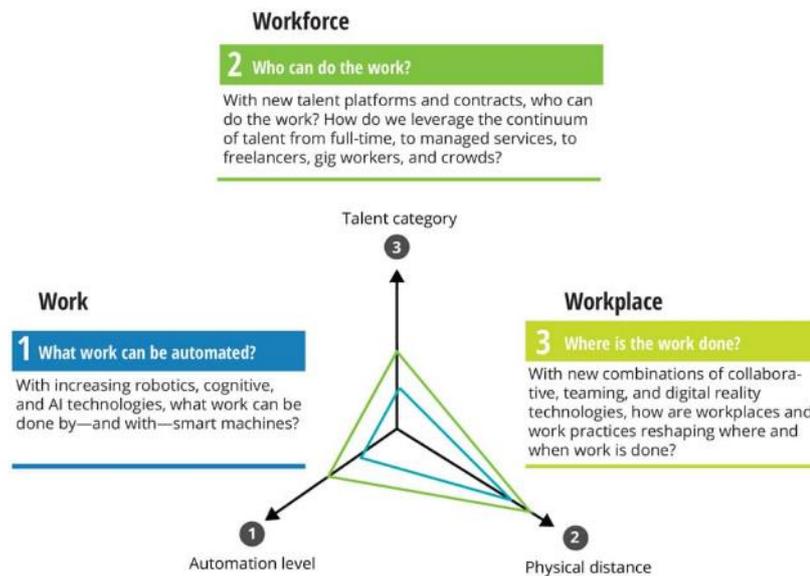


Figure 20: Three dimensions of the Future of Work (Source: Deloitte Insights)

This misalignment is often produced by the origin of the funding. In Europe, where the influence of public investment is higher, social impact is an aspect to be highly considered as part of the implementation plan. In the USA instead, this is seen as a result of good operation. We can choose to use advances in technology merely to drive more efficiency and cost reduction, or we can consider more deeply the ways to harness these trends and increase value and meaning across the board—for businesses, customers, and workers.

- **Single Market.** While the US already works as a unified market removing key differences between online and offline worlds, breaking down the barriers to cross-border online activity, the readiness of the European ‘Digital Single Market’ vision still lags behind. Up until now, EU citizens and businesses have often faced barriers when using online tools and services. These barriers mean that consumers have restricted access to some goods and services, businesses cannot reap all benefits from digitisation, and governments and citizens cannot fully benefit from this digital transformation.
- **Cultural gaps.** Regardless the multiple efforts towards a EU-US collaboration, there is a cultural divide that prevent an effective and stronger Transatlantic partnership. Europe has already achieved a mature level of collaboration among its member countries, often facilitated by common frameworks. However, when it comes to working with US partners, there are a number of significant differences in terms of culture, such as:

- Semantics: as already mentioned with the concept of innovation, there are misalignments in terminology between regions. Key actors often use different vocabulary and some relevant US-born concepts are not yet mature enough in Europe - one good example of it is the concept of 'unicorns', i.e. privately held startup companies valued at over \$1 billion.
- Communication: the ways in which Europeans and Americans drive communication is different – especially through email and remote conference calls. US partners tend to be more straightforward and keep a more active exchange after an initial meeting, while Europeans are slower movers, with a tendency to longer messages and meetings.
- Entrepreneurship in universities: the culture of entrepreneurship in universities still lags behind in Europe compared to the USA. The exploitation of knowledge from research to market in the form of spin-offs and new startups is something that is gaining traction more and more in Europe, while it is a mature practice in the USA, which goes even further and looks at STEM education in high schools - educating students in four specific disciplines (science, technology, engineering and mathematics) in an interdisciplinary and applied approach.
- Culture of failure: One of the defining differences between entrepreneurial cultures in the United States and Europe is their respective approach to "failure". Europe has an attitude problem towards entrepreneurship because of its high potential for failure. By contrast, celebrating failure has achieved cult status in Silicon Valley - "fail often, fail fast".

Partners in both ecosystems interested in fostering a bilateral collaboration must understand this cultural divide and make efforts to adapt to each other to meet halfway. One of the proposals suggested was to educate US partners into the European mindset.

- **Joint narrative.** The USA and Europe's continued leadership in technology and innovation risk falling behind China, Russia and emerging economies in the mid-term if we are not able to develop an Atlantic narrative. It is crucial to identify shared 'pains' and propose strategic plans that will allow us to target priorities and objectives towards the Digital Economy and the evolution of Internet. It is important to recognize — and then reinforce — the fundamental principles and programmes that can underpin like-minded cooperation and global competitiveness in Focus Areas such as 5G and Artificial Intelligence around privacy, openness, trust and diversity.
- **Collaboration scheme.** One of the main conclusions of the Expert Group was the lack of a proper and agile platform for collaboration between regions around technology

innovation. A balanced instrument -not 100% sponsored by public or private funds, as this approach does not fully fit neither region- that could support and drive non-partisan leadership on forward-looking Transatlantic partnerships around innovation and entrepreneurship. Current efforts in EU-US collaboration are polarised in two streams: 1) frameworks for applied research and infrastructure, where the Next Generation Internet has great allies in the National Science Foundation (NSF) and National Institute of Standards and Technology (NIST); 2) think tanks with in-depth focus on policy-making and economics, such as the Atlantic Council⁷, the German Marshall Fund of the United States (GMF)⁸, the Center for Strategic and International Studies (CSIS)⁹, among others.

There is a need for a bottom-up framework where partnerships are not designed by a third part but by the ecosystems themselves.

Next Steps

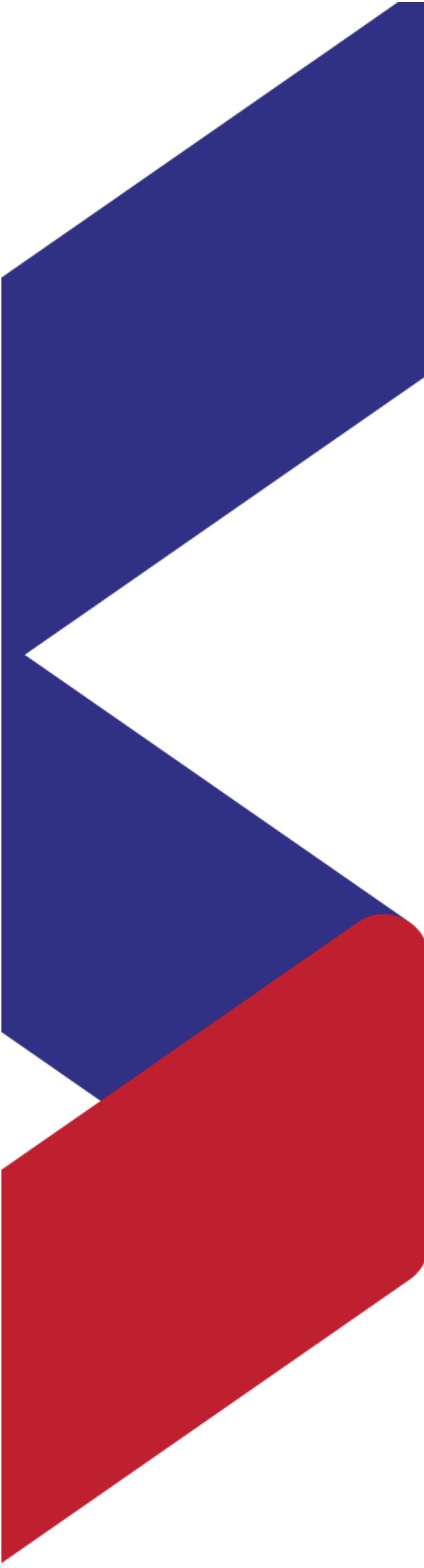
Like the other Expert Groups, Innovation + Entrepreneurship will leverage the first assessments carried out by Think NEXUS, plus the inputs from the first workshop to focus on 3 main lines of action:

- Maintain a continuous dialogue among the experts from both regions around the topics of mutual interest, involving those members who could not participate in the workshop. This is the only way to develop a common narrative across ecosystems. The challenge is to find a suitable digital tool to encourage offline discussions – e.g. Slack;
- Identify and explore funding mechanisms capable of complementing the resources within Think NEXUS. There is an opportunity to bridge the gap in discussions around emerging technology happening between applied research and policy, where this expert group can provide an added value. For that, the members of the group will need to find resources that will allow a much broader impact and active contribution from the experts in both sides;
- Generate inputs in the form of contributions to blog posts, books and articles that will define the baseline of work and outcomes of the group.

⁷ Cf. <https://www.atlanticcouncil.org/>

⁸ Cf. <http://www.gmfus.org/>

⁹ Cf. <https://www.csis.org/>



CHAPTER 6 – Conclusions

D2.4 1st Thematic Workshop Report

The **1st Think NEXUS Workshop**, took place in the Walter E. Washington Convention Center, **Washington D.C. on 10th July 2019** and was attended by **41 attendees** in total, 28 from the US and 13 from the EU, representing research and innovation, academia, policy and the industry.

Participants from both regions identified and agreed on **the importance of NGI for the lives of their citizens** (data privacy, security, trust etc.) taking into account the “fast pace” of technological evolution in the present era, therefore **the need for collaboration between EU and US is of highest priority**. Collaboration should focus on some **key application areas**, such as connected healthcare, global challenges, disaster relief, that are critical for the wellbeing of the global population. However, the need for **collaboration on technologies**, such as IoT, Digital ledger technology, Big Data, Trust & Identity, Cloud computing, Edge, AI, Real time control, Smart Infrastructures, 5G, Cloud to Edge, Edge to Edge Communication Technologies, Intelligent Operating Systems, etc., is also key and should not be overlooked.

An additional key observation that has been highlighted by all expert groups, is the need of **establishing and supporting a transatlantic ecosystem** related to NGI, which should include actors and stakeholders from the whole NGI spectrum: Policy Makers, Funding Agencies, RTOs, Multinationals, SMEs, Standardisation bodies, Industrial Stakeholder Groups and User Representatives Groups. Establishing this kind of ecosystem will allow stakeholders from both regions to **understand misalignments between policies and practices, will develop a “common” vocabulary among all stakeholders** and will **synchronize developments and works between the two regions**, thus enhancing communication and collaboration. This will also allow the establishment of **Joint Experimentation Testbeds & Networks**, which are needed by researchers and innovators in order to develop technologies and innovations, critical to NGI.

The need for collaboration is also critical as **USA’s and Europe’s continued leadership in technology and innovation risk falling behind** China, Russia and emerging economies in the mid-term. It has been identified as crucial, to propose and implement strategic plans that will allow **both regions to target priorities and objectives towards the Digital Economy** and the evolution of Internet. It is important to recognize — and then reinforce — the fundamental principles and programmes that can underpin like-minded cooperation and global competitiveness in focus areas such as 5G and Artificial Intelligence around privacy, openness, trust and diversity.

Last but not least, a common outcome that derived from all three different Expert Groups is the **urgent need of a structured collaboration instrument between the two regions**, that will support joint work on NGI. A balanced instrument -not 100% sponsored by public or private

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funds, as this approach does not fully fit neither region- that could support and drive non-partisan leadership on forward-looking Transatlantic partnerships around innovation and entrepreneurship, is needed in order to boost collaboration and allow room for innovation.

Overall, the first Think NEXUS workshop gave the chance for expert group members and participants to meet for the first time and bring forward for discussion a number of key matters and topics, allowing the definition of needs and challenges to be tackled in future works of the project. All expert group leaders have also defined a first set of follow up activities and actions for the expert groups, to be implemented in the following months, that aim to contribute towards the above-mentioned challenges.



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