Department of Enterprise, Trade and **Employment**

Cork Smart Gateway
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Subject: Submission on behalf of the Cork Smart Gateway to the Open Consultation on the National Smart Specialisation Strategy

The Cork Smart Gateway initiative was established by Cork City Council, Cork County Council, Muster Technological University represented by the Nimbus Research Centre, Tyndall National Institute and University College Cork represented by the School of Computer Science and Information Technology (CSIT) and is supported by Industry partners from it@Cork, Cork Chamber of Commerce and Energy Cork. Therefore, the Cork Smart Gateway represents a group of organisations that aim to promote the sustainable development of an innovation ecosystem in the region to increase economic activity, provide better public services, promote collaboration and engagement, and enhance the quality of life for all who live, work, and visit Cork.

General:

The **Cork Smart Gateway welcomes and strongly supports the National Smart Specialisation Strategy and its consultation** as it aims to collect the views of stakeholders with an interest in the development of the national and regional enterprise innovation landscape and boost regional innovation, contributing to growth and prosperity of each regions' strengths which matches the Cork Smart Gateway's objectives.

Moreover, the Cork Smart Gateway supports "Digitalisation and Digital Transformation" as one of the cross-cutting issues in national innovation, as digital technologies, data and applications are considered enablers of innovative projects for the region.

In responding to this consultation and due to its location, the Cork Smart Gateway has considered the SOUTHERN SECTORAL STRENGHTS, and therefore this aspect is taken into consideration regarding the following Cork Smart Gateway's observations and suggestions.

In relation to p.19 and the question:

"Do you agree with the suggested areas of strength for the three regions as set out above? Are there other areas of strength in the three regions to be highlighted?" (p.19)

The Cork Smart Gateway agrees with the ICT sector considered as dominant in the SouthWest. The ICT sector is indeed *supported by research and tech centres such as Tyndall, IPIC, IMaR, MCCI, CAPPA and Nimbus and the clusters Cyber Ireland and IT@Cork*.

However, it is important to include the role of universities and its respective schools and departments that support to the development of the ICT sector. These are the School of Computer Science and Information Technology (CSIT) from University College Cork (UCC) and the Department of Computer Science from Munster Technological University (MTU).

Moreover, staff from both universities and from Tyndall National Institute are involved in national research centres and only one of them (Confirm: Smart Manufacturing) has been acknowledged in the stakeholder consultation paper. The following research centres have significant research activity based on the Southern Region and we believe this should be included in the National Smart Specialisation Strategy as strengths:

- CONNECT: Centre for Future Networks.
- Insight: Centre for Data Analytics
- Lero: The Irish Software Research Centre
- ADVANCE CRT: Centre for Research Training in Advanced networks for Sustainable Societies
- CRT-AI: Centre for Research Training in Artificial Intelligence

Additionally, these centres specialise in areas that should be also included *as **Emerging Areas of Opportunity*** for the region motivated by the impact and collaborative projects with industry that they are involved:

- Artificial Intelligence, Data Analytics, & Algorithmics

Having secured over €140 million funding that comes from the Government (an allocation that forms part of a six year-round of funding), industry and international sources such as the European Union, the Insight Research Centre contributes to Ireland's plan to prepare its businesses and workers for tomorrow by keeping Ireland at the cutting edge of innovation in this important sector. Insight was established through an initial SFI investment of €43 million

and has delivered an economic impact of €593m to the Irish economy. For every €1 of state investment, €5.54 is returned to the economy on an overall leveraged basis.

- Networks, Computer Architectures, & Software Systems

The main areas of study under this broader theme are: Software Engineering, Cloud Computing, Network Technologies, Wireless Networking, Internet of Things (IoT), Mobile Computing and Distributed Systems, whose research output and innovation contribute to the scientific state-of-the-art and directly assist in the growth of the Irish economy.

The Science Foundation Ireland funded Enable research programme on Smart Communities aims to "connect communities to smart urban environments through the Internet of Things." Enable is a collaboration among three SFI research centres CONNECT, Lero and Insight in close collaboration with industry partners focusing on four main domains: smart buildings to improve energy usage, increase sustainability, track occupants and objects and make buildings more resilient; smart mobility addressing mobility challenges that urban communities face including congestion management, parking management and resulting air pollution; smart environments that address a range of challenges focused on water management, air pollution, and contamination; and, smart networks, underpinning network technology, e.g., resilient, optimised, scalable, secure and privacy-aware edge network community service enablement. Enable's research outputs contribute to the digitalisation of urban systems and services towards smart cities and communities.

- Security, Privacy, & Ethics

While the stakeholder consultation paper cites the existing cluster in cybersecurity in the Southern Region, the Cork Smart Gateway suggests that it should be stated as an Emerging Area or Opportunity itself.

Cork is widely recognised as a leading hub for cybersecurity being selected by major cyber and tech-focused companies such as Intel, IBM, Trend Micro, FireEye, Dell, and Johnson Controls. Cork is fast developing capability and capacity in this burgeoning tech sector where over 1,000 highly skilled professionals are already working and developing that talent pool that is core to Cork's success and there are over 10,000 tech graduates from UCC and MTU.

UCC's School of Computer Science & IT leads a number of EU, SFI and industry funded security research projects and MTU's NIMBUS Centre hosts cutting-edge cybersecurity systems research. Both universities have cybersecurity as an integral part of their undergraduate and post graduate education. These two highly rated academic institutions offer a broad range of options, including security management and law, digital forensics, malware analysis, applied cryptography, offensive security, network security, system security and forensics.

MTU is currently leading the Cyber Skills Project with academic partners across Ireland that aims at addressing the critical skills shortage of cybersecurity professionals in Ireland.

Additionally, investigators, PhD researchers, research fellows and management and operations staff from these research centres contribute with their skills and capabilities within the South-West Region, hence, responding to the question "*What are the skills, assets and capabilities within your region? "* on p.19.

In relation to the section "CURRENT DIGITALISATION POLICY AND PROGRAMMES IN IRELAND", and the questions stated in p.24 that read:

- **Is digitalisation impacting your sector or region? How?**
- **Could your business or sector benefit from new digital technologies? What support would you need to adopt these technologies?**
- **How can we improve the alignment of the country's ICT and digitalisation expertise, initiatives and investments?**

Digital Economy

Digitalisation is impacting the Cork region, mostly those who feel unable to engage with the new digital world due to lack of skills or resources. To tackle this challenge, Cork City Council and Cork County Council digital strategies were developed to support citizens and businesses to better engage with the digital economy. These should be acknowledged as part of the Current Digitalisation Policy and Programmes in Ireland.

Additionally, business could benefit from new digital technologies. With the ever increasing trend towards online spending, small Irish businesses need further support in eCommerce and therefore, additional funding for the Local Enterprise Offices Trading (LEOs) Online Voucher Scheme should be considered a priority.

Green initiatives

The Cork Smart Gateway has also identified that while there is a wide range of grants that help to upgrade homes by making them more energy efficient, more of these incentives should also be directed at businesses, such is the case of EcoMerit, a leading Irish environmental certification company that has been helping Irish business to improve their environmental performance for over 10 years, through a continuous improvement model of certification focussing on waste, water and energy consumption. As part of a Sustainable Energy Community registered with the SEAI, EcoMerit Member companies enjoy enhanced access to grants and finance whilst improving their own sustainability in Ireland. EcoMerit's Oversight provides assurance that the environmental certification in line with best practice.

Open Data

The advocacy and use of open data would also improve the alignment of the country's ICT and digitalisation expertise, initiatives and investments.

Open data increases the transparency of public sector organisations, and it is also seen as a driver for economic growth. Therefore, Cork's local authorities through the Cork Dashboard and the Cork Economic and Community Data Monitor, support citizens, public sector workers and companies with real-time information, time-series indicator data that enable them to gain detailed, up to date intelligence about the region that aids everyday decision making and fosters evidence-informed analysis.

Collaboration

Additionally, it should be noted that there is a strong relationship in the Southern Region between agencies and stakeholders creating an environment of working groups that support the region's capabilities and strengthen the relationship between Industry and Higher Education. Nonetheless, the Cork Smart Gateway would like to suggest the creation of Regional Thematic Forums where research and industry could meet to showcase and discuss ongoing Industry - HEI research projects and potential new ones.

In relation to the section of INNOVATION DIFUSSION and the question: How can we enhance collaboration between industry and the higher education sector?"

The National Smart Specialisation Strategy should also take into consideration the recently launched Science Foundation Ireland's 2025 strategy that focuses on investing in future skills and building on Ireland's research base to maximise the benefits of that research for both the economy and society. This is of particular relevance in fostering digitisation of industry as part of the Industry 4.0 concept, more investment in R&D is needed to support the large number of manufacturing companies in the Southern Region in moving towards the stronger adoption of the industry 4.0 concept. While the strategy indicates that Ireland leads in integration of digital technologies, which is the case for many multi-nationals, there are many small, indigenous manufacturing companies that are lacking behind and require support.

In this context, the Cork Smart Gateway suggests further support on:

- Guidance for SMEs and businesses to understand the benefits of working with research. Often a company might have an idea for a product or process, but it might lack the expertise to investigate and develop it. Thus, advocating and promoting programmes that allow those companies to bring in investigators with the skills and knowledge needed to explore possibilities and develop innovative solutions to the challenges they face is essential.
- Increasing funding for education programmes as part of the springboard programme for example or the number of industrial placement PhD projects, programmes, and scholarships.
- Growing the network of innovation centres.

- Sponsoring "Final Projects Open Days" where Industry stakeholders have the opportunity to understand the advantages of working with research.
- Continuity of Industry-Academia collaborations beyond a completed project to help companies to bring the project's innovations to market.

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