



**NSAI**

# ANNUAL REPORT 2018

NSAI TECHNICAL COMMITTEES  
INNOVATION MANAGEMENT – NSAI TC45

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## 1 Chairman's Statement

I am happy to present this second annual report on behalf of the NSAI TC45 committee for 2018.

2018 was an incredibly interesting year for Innovation and the development of the ISO Innovation Management System series of guidance standards, starting with meetings in London, Porto and then Japan. Our team attended these set of plenary and working group meetings for the development and near finalisation of the ISO Innovation Management System standard, ISO 56002.

Yes lots of dynamics, but key is that this planned new ISO guide standard is being adopted by the OCED in their famous 'Oslo Manual' used by governments and policy makers worldwide, as well as by many other leading global organisations including the The World Bank, UNESCO, World Trade Organisation and leading global companies and corporations. The direct participation of the European, Chinese and US Patent Offices in this ISO work will provide guidance to companies and research organisations on the role Intellectual Property (IP) has to play in strategic innovation management via the development, protection and exploitation of IP assets in the age of the knowledge economy. The endorsement of this ISO series of innovation management standards by the above leading global organisations will influence future activities and funding around innovation worldwide

This ISO series covers guidance on the early stage design driven processes and activities in exploring and investigating the unknowns and uncertainties at the front end of innovation. In the context of our work in NSAI TC45, innovation is interpreted in its broadest sense. It includes the successful implementation of a new or significantly improved product (good or service), process, business model or new organizational model – with the goal of generating economic and/or social value for organisations and society in general. However, successful management of innovation is still a challenge for many organisations, particularly SMEs that are limited in terms of time and resources. Systematic innovation management, as proposed by NSAI TC45 and the series of guidance standards that we are involved in developing with our International ISO and CEN partners, will help Irish organisations on their innovation journeys, and will help Ireland in meeting its goal of becoming a 'Global Innovation Leader'.

Our NSAI national mirror committee has representatives from leading organisations in Ireland interested in the strategy and tactics of how to bring a practical and systematic innovation framework into Irish companies, from micro to large businesses. Many are already kicking off pilot programs incorporating and aligned to this ISO framework - including Innovation for Growth (14G) for Enterprise Ireland and Invest Northern Ireland clients, Design for Growth for DCCol, targeting LEO's companies for micro enterprises. The ISO standards are also being incorporated in private training programs like IRDG's Lean Product Development program for SMEs and Multinationals. All are staring to align their activities with this global 'ISO guide standard' on what an innovation management system entails and detailing a practical framework on which to run a pilot to prove the process within a business.

2019 year will see the launch of the ISO Innovation Management System series of guidance standards, so I and the NSAI TC45 committee are looking forward to an exciting year ahead.

*Sean McNulty, Chair NSAI TC45*

## Introduction

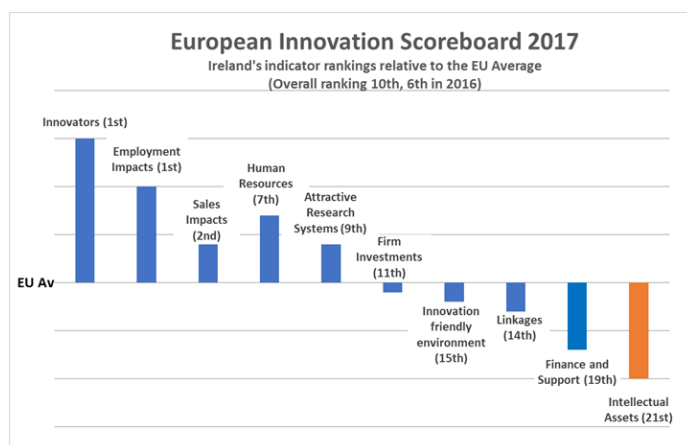
Standards on innovation management will allow International and Irish organisations, particularly SMEs, to share their best practices across various aspects of innovation management. This will facilitate collaboration and also develop the capability of Irish-based companies to innovate and to bring new innovations successfully to competitive global markets.

Innovation is key to global competitiveness and human and technological progress over the coming decades. International management system standards on innovation will help break down the existing cultural, structural and organisational obstacles among/between organisations. These standards will provide best practices to support the implementation of innovation policies and best practices in SMEs, public institutions, universities, research & innovation centres and non-profit organisations.

To achieve this goal the work focuses on a management system for innovation. To define this management system, international experts will address: terminology, tools and methods such as open innovation, design innovation, strategic intelligence, intellectual property management, creativity management and also assessment of innovation management practices in all types of organisations.

## EU & National Innovation Policy

As illustrated in the summary diagram below via Enterprise Ireland<sup>1</sup>, while Ireland does relatively well in some aspects of innovation, we are well behind the EU average when it comes to the management of ‘intellectual assets’ – a key element in systematic innovation management, which is the focus of the work of NSAI TC 45.



Source: [European Innovation Scoreboard 2017](#) European Commission

Indeed, based on deliberations within the NSAI TC45 committee, EI now plans to include ‘standards, regulations and related certifications’ as key elements of a firm’s ‘Intellectual Assets’ that add real market value to innovative firms.

The stated vision of Innovation 2020 – the National strategy for research and innovation – is for Ireland to move from its current position as an ‘innovation follower’ in the current European Innovation Scoreboard, to a

<sup>1</sup> *IP Strategy and Innovation*, IP4Business Training. Sept 25, 2017. Joe Doyle – IP Manager Enterprise Ireland & Member of NSAI TC 45.

'Global Innovation Leader'. To help make this vision a reality, a key government strategy within Innovation 2020 is to '*promote standards and regulations as a source of competitive advantage*'. In this context, NSAI has been given the following specific Action under Innovation 2020:

*"Work with firms to stimulate and support the embedding of standards and regulatory compliance into their R&D (& Innovation) processes"*

The development and implementation of International standards in systematic (versus ad hoc) Innovation Management within Irish-based companies, particularly SMEs, will help NSAI via NSAI TC45 - working in close collaboration with our Enterprise Ireland colleagues and key national stakeholders - to deliver on this key action for Ireland over the coming years.

## 2 Scope of TC

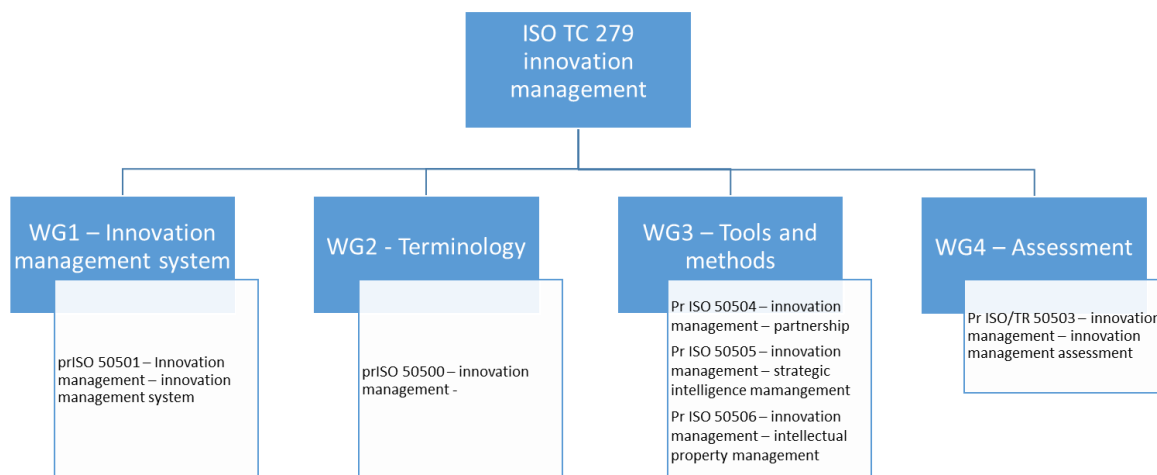
The NSAI TC 45 technical committee mirrors the following international committees:

Committee Name	Committee Title
<b>CEN/TC 389</b>	<p>Innovation Management.</p> <p>This committee produced the 7-part Technical Specification below:</p> <p>CEN/TS 16555 Parts 1-7</p> <p>Part 1: Innovation management system.</p> <p>Part 2: Strategic intelligence management.</p> <p>Part 3: Innovation thinking.</p> <p>Part 4: Intellectual property management.</p> <p>Part 5: Collaboration management.</p> <p>Part 6: Creativity management.</p> <p>Part 7: Innovation management assessment</p>
<b>ISO/TC 279</b>	<p>Innovation Management.</p> <p>This is now the active international TC on Innovation Management, following on from the initial work of CEN TC 389 outlined above.</p> <p>Refer to section 4 below for details on structure, work programme etc.</p> <p>In summary, the ISO TC 279 working groups are as follows:</p> <ul style="list-style-type: none"> <li>- WG1 "innovation management system"</li> <li>- WG2 "terminology, terms and definitions"</li> <li>- WG3 "tools and methods"</li> <li>- WG4 "assessment"</li> </ul>

## 3 Structure and Membership

### 3.1 Structure

The Figure below illustrates the structure of the ISO TC 279 Committee, which is mapped directly by NSAI TC45:



**NOTE:** During 2018, the above numbering scheme was changed, as outlined in the latest summary table below:

ISO Working Group	Topic(s) Covered	prStandards old numbering scheme	prStandards new numbering scheme
WG1	<b>Innovation Management System - Guidance</b> (IMS)	ISO 50501	<b>ISO 56002</b>
WG2	<b>Fundamentals and Vocabulary</b> (aligned with planned new rev of OECD Oslo Manual)	ISO 50500	<b>ISO 56000</b>
WG3*	<b>Innovation Partnership - Guidance</b>	ISO 50503	<b>ISO 56003</b>
WG4	<b>Innovation Management Assessment – Guidance</b>	ISO 50502	<b>ISO/TR 56004**</b>
WG3	<b>Intellectual Property Management – Guidance</b>	ISO 50505	<b>ISO 56005</b>
WG3	<b>Strategic Intelligence Management – Guidance</b>	ISO 50504	<b>ISO 56006</b>
WG3	<b>Idea Management - Guidance</b>	ISO 23249	<b>ISO 56007</b>

- Currently all ISO TC 279 documents are 'guidance' standards, without 'requirements' – hence not designed for conformity assessment / certification purposes
- \*WG 3 covers 'Tools & Methods'
- \*\* ISO/TR 56004, TR = Technical Report

## 3.2 Members

The table below includes the NSAI TC 45 members for the year 2018:

Organisation	Name	Role
Dolmen Design & Innovation (Managing Director, Dolmen)	<b>Sean McNulty</b>	<b>Chair</b> NSAI TC45
Enterprise Ireland (Intellectual Property Manager, EI)	<b>Joe Doyle</b>	Member
Ibec Technology Ireland Innovation Forum (TIIF), Manager	<b>Dave Feenan</b>	Member
Bord Na Mona (R&D and Innovation Manager)	<b>Hugh Henry</b>	Member
Innovation Consultant & Innovation Management Lecturer in Maynooth University MSc programme	<b>David Trevitt</b>	Member
Waterford Institute of Technology, Rikon Group (Innovation research & consultancy for SME clients)	<b>Dr Pat Lynch</b>	Member
Fujitsu (Head of Research and Development)	<b>Anthony McCauley</b>	Member
Innovation Consultant	<b>Stephen Smith</b>	Member (new, 2018)
SFI CONFIRM – National Smart Manufacturing Research & Innovation Centre (General Manager)	<b>Dr Bill O’Leary</b>	Member (new, 2018)
Innovation Consultant	<b>Eoin Flavin</b>	Member (new, 2018)
Enterprise Ireland (Innovation Development Manager)	<b>Declan Black</b>	Member (new, 2018)
Innovation Consultant GBI Ltd.	<b>Prof Gerry Byrne</b>	Member (new, 2018)
Innovation Consultant StrategicInnovation.ie	<b>Laurence Knell</b>	Member (new, 2018)
Ariadne Consultants	<b>Derek Bridges</b>	Member
NSAI	<b>Mary White</b>	Member
Dromone Engineering	<b>William Egenton</b>	Observer
IRDG	<b>Bernadette McGahon</b>	Observer
NSAI	<b>Paul Killeen</b>	Technical Secretary NSAI TC45

### New Members, 2018

As outlined to in the table above, 6 new members joined TC45 during 2018

### 3.3 Liaisons, ISO TC 279

#### Organizations in liaison (Category A and B)

Acronym	Title	Category
CERN	European Organization for Nuclear Research	A
EPO	European Patent Office	A
FICPI	Fédération Internationale des Conseils en Propriété Intellectuelle	A
ISPIM	International Society for Professional Innovation Management	A
LESI	Licensing Executives Society International	A
OECD	Organisation for Economic Co-operation and Development, OECD	A
The World Bank	The World Bank Group	A
UNDP	United Nations Development Programme	B
UNESCO	United Nations Educational, Scientific and Cultural Organization	A
WIPO	World Intellectual Property Organization	A
WTO	World Trade Organization	A

As illustrated above, ISO TC 279 has a number of active liaison relationships with key international players in Innovation Management, including OECD, WIPO, UNESCO, LESI, World Bank and others who are actively following and participating in the ISO TC279 work programme. For example, per NSAI TC45 secretary discussions with the ISO TC279 secretary and Chair, the future revised version of the influential and highly cited OECD Oslo manual on innovation will be aligned with the outputs from ISO TC279. The Chinese and many other countries (34 Participating and 15 Observing members) are also heavily involved in ISO TC 279 work, such that many believe the outputs from ISO TC 279 could well be the basis for 'the next ISO 9000 series' of key International management system standards.

## 4 Summary of 2018 Activities

### 4.1 National

#### 4.1.1 Meetings

Committee members attended the following national meetings:

Meeting No.	Date	Notes
1	15-Jan-2018	<a href="#">N186</a> - Minutes & Actions
2	9-Aug-2018	<a href="#">N208</a> - Minutes & Actions
3	4-Sept-2018	Joint Ibec, NSAI & EI meeting in Ibec with innovative Irish-based companies on ISO DIS 56002 - Innovation Management System, Guidance
4	3-Dec-2018	<a href="#">N219</a> - Minutes & Actions

#### 4.1.2 National Work

See 'Notes' in table above



## **New NSAI Standards Innovation Award**

Introduced New 'NSAI Standards Innovation Award' as part of the annual NSAI Standards Forum

- Award for the integration of standards development and innovation in Irish-based companies, to support competitive advantage for Irish companies in global markets
- 2018 awardee was Sean McNulty of Dolman & Chairman of NSAI TC45 on Innovation Management for over 10 years – leading / co-ordinating a Swift, European CEN TS Series and ISO 56xxx Series of Innovation management standards

## **National Roll-Out of ISO 56xxx Series in 2019 – Initial Discussion**

- TC45 had initial discussions during 2018 on how the committee could support and promote the roll-out of the initial ISO 56xxx series of standards during 2019 and beyond, with an initial focus on ISO 56002 (Innovation Management System) which is due to be ready for publication sometime mid-2019
- Potential involvement of case studies / stories with EI roadshow and via EI 'Innovation pillar' within the EI 'Client Engagement Model' (CEM) that all EI Development Advisors are using with all EI clients. Also ISO 56002 (IMS) could potentially be incorporated into EI innovation 'diagnostic' as part of the CEM. The systematic and disciplined approach (versus 'ad hoc') to innovation management described in the ISO 56xxx series will help SMEs – per our EI member, 'structure is needed .... and it works'
- Various ideas and suggestions from all members for disseminating value of ISO Innovation Management System guide standard (ISO 56002):
  - Need to be tailored for SMEs, so they know how it works, follow a structure and why should this make a difference.
  - Overview for State Agencies so it makes sense and aligned to policy strategies.
  - Needs a marketing message / PR as to its value and benefits to all stakeholders in the value chain.
  - SWIFT version for more complete story and insight of how it is done and benefits of sticking to a standard for innovation.
  - Relevance to Industry 4.0 - key barrier is lack of knowledge around stakeholders and customer's hidden needs. Not just difference over current solutions, but creating a difference that has value and meaning for the target customer.
  - Use national RDI centres to deploy ISO 56xxx series
    - e.g. SFI Centres, EI / IDA Technology Centre & EI Technology Gateways
    - Some countries are considering use of ISO 56002 by nationally funded RDI Centres are requirement for funding
  - Enables disruptive thinking, applying new competencies into the business and a structure by which to do this.
  - Consideration for resource constraints in middle management right across the supply chain, internally and externally.
  - Show a clear link of Innovation into R&D.
  - Define the eco-systems and how all can add value.
  - Diagnostic audit for Innovation - which one and current offerings?
  - Relevance to Public Sector

- SMEs need to understand the machinery better of how its done - develop our own guidance SWIFT, 2 pager version and then more complete guide.
- Awareness there are a lot of small Multi Nationals, est. over a 100 with 50 to 100 employees
- Educational Course Masters alignment e.g. UL
- Think beyond the 'document' and put on the shoes of the SME - what will be of value to them?
- Get more academics engaged with ISO 56xxx so that they can incorporate elements into the undergraduate & postgraduate education and training programmes. There used to be a 'National Institute for Technology / Innovation Management' in UCD but no longer since director retired. Opening for new offering, based on ISO 56xxx series
- ICT Skillnet @ Technology Ireland, could incorporate ISO 56xxx series into the skills portfolio around innovation management. ICT Skillnet (via DF and team) are investigating use of ISO 56xxx as reference / foundation for innovation management training for companies

## 4.2 International/Regional

### 4.2.1 Meetings

Committee members attended ISO TC279 meetings as follows:

Committee Name	Location	Date	No. of Attendees
ISO TC 279, Innovation Management <ul style="list-style-type: none"> <li>• <b>Plenary</b></li> <li>• <b>WG1 "innovation management system"</b></li> <li>• WG2 "terminology, terms and definitions"</li> <li>• <b>WG3 "tools and methods" – Intellectual Property Management</b></li> <li>• WG4 "assessment"</li> </ul>	London	12-16 March 2018	2
ISO TC 279, Innovation Management <ul style="list-style-type: none"> <li>• <b>WG3 "tools and methods" – Intellectual Property Management</b></li> </ul>	Japan	15-19 October 2018	1

### 4.2.2 International/Regional Work & Standards Reviewed & Voting Results

#### **Innovation Management System – Guidance. ISO/CD2 50501, Voting.**

- All discussed voting and comments on key document '[ISO/CD2 50501](#)' ([N171](#))
  - Reviewed individual committee member comments submitted in advance of meeting
  - Agreed final committee comments & consensus vote as follows:
    - Approval with comments
    - Compiled Comments - refer to file [N180](#)

#### **Establishment of category A liaison with EuKTS**

- Vote 'YES' to the above
- EuKTS is an international non profit association established to support the development of knowledge transfer (KT) by increasing the standard, recognition, education, training and the mobility of the knowledge and technology transfer professionals across Europe and beyond

**New Work Item Proposal: Innovation management - idea management**

Reviewed and discussed following documents in relation to the new work item proposed via UK

- Idea Management - [Completed ISO Proposal Form](#) [N174](#)
- Idea Management - [Draft Outline Structure](#) [N175](#)
- Following discussions, NSAI TC45 Consensus Vote & Comments agreed as follows:
  - Approved as new project (stage 20.00)
  - NSAI nominated expert Sean McNulty

**Innovation Management System – Fundamentals and vocabulary (ISO 50500)**

- Reviewed [ISO/CD2 50500](#) ([N194](#), 2<sup>nd</sup> committee draft of ISO 50500 - Fundamentals and vocabulary) from ISO TC279 WG 2
- Agreed final committee comments & consensus vote
  - Approved with [comments](#) file (circulation of the draft as a DIS) [N206](#)

**Innovation Management System – Guidance (ISO 50501)**

- Discussed, commented and voted on DIS Ballot - Public Enquiry stage - for document 'ISO/DIS 50501', Innovation Management System – Guidance [N203](#)
  - Approved with [comments](#) [N207](#)
- As this is first ISO 505xx series document to enter the DIS / 'Public Enquiry' stage, members agreed to seek inputs from national stakeholders outside of our NSAI TC45 committee to comment on ISO/DIS 50501
- Agreed that for this 'public review & comments' process, TC45 used NSAI 'Your Standards Your Say' portal to get any additional external comments in advance of planned ISO meeting in Japan in October
- Agreed that IBEC Technology Ireland Innovation Forum (TIIF @ibec, managed by Dave Feenan) would host joint NSAI / IBEC / EI event in IBEC in September with TIIF targeted / invited innovative companies to get their inputs on the initial ISO 50501 DIS in advance of planned ISO meeting in Japan in October, and to see if some companies / individuals may be interested in engaging in our NSAI TC45 committee. Successful meeting held in Ibec offices with leading innovative Irish-based companies – received valuable inputs and comments that were included in NSAI TC45 submission to ISO.

**Confirmation of European Innovation Management Technical Specifications**

- [CEN/TS 16555, Parts 2 to 7](#) [N148](#)
- Agreed to 'extend for another 3 years', until related ISO docs published, at which point CEN TC 389, that developed the CEN TS series, will have to decide on whether to adopt the ISOs as ENs/European Standards

**Appointment of Chairperson of ISO/TC 279**

- TC45 voted (with the majority of countries) for reappointment of current Chairperson of ISO/TC 279, Mrs Alice De Casanove from Airbus

**Innovation management - Tools and methods for innovation partnership - Guidance**

- ISO/FDIS 56003
- Approved (with minor comments)

### 4.3 Regulatory Development/Update

Not applicable.

## 5 Irish Publications/Reviews

### 5.1 Publications

The Committee did not publish any Irish specific deliverables this year.

### 5.2 Reviews

#### **NSAI SWiFT 1**

- Per NSAI procedures on the 'systematic review' of published standards, TC45 discussed whether to maintain or withdraw NSAI SWiFT 1 ([N181](#)) – 'Guide to good practice in innovation & product development'
- Agreed should maintain, as useful brief overview and reference for SMEs, complementing planned ISO 56xxx series

## 6 Work programme for 2019 onwards

The NSAI TC45 strategy is to continue to actively engage in the development of the various emerging ISO TC 279 standards over the coming year and beyond. For example, 4 members of TC45 plan to attend the key upcoming ISO TC 279 Plenary & Working Group meetings in Stockholm in May 2019.

A particular focus during 2019 will be the National roll-out of the initial ISO 56xxx series of standards, including *ISO 56002, Innovation Management System - Guidance*. As alluded to earlier, such a broad roll-out will support and enable NSAI actions under Innovation 2020 and Enterprise 2025, and the national vision therein of positioning Ireland 'Global Innovation Leader'. The widespread introduction of systematic (vs ad-hoc) innovation management practices as outlined in the ISO 56xxx series will also help indigenous Irish SMEs to deliver much needed improvements in productivity and international competitiveness.

Below is a summary of the current officially approved work programme for ISO TC 279.

## ISO/TC 279

### Innovation management

Filter: ☐ Published standards ☒ Standards under development ☐ Withdrawn standards ☐ Projects deleted

#### Standard and/or project under the direct responsibility of ISO/TC 279 Secretariat (5)

Stage

ISO/DIS 56000 [Under development]	40.20
Innovation management -- Fundamentals and vocabulary	
ISO/FDIS 56002 [Under development]	50.20
Innovation management -- Innovation management system -- Guidance	
ISO/AWI 56005 [Under development]	20.00
Innovation management -- Intellectual property management	
ISO/AWI 56006 [Under development]	20.00
Innovation management -- Strategic intelligence management -- Guidance	
ISO/AWI 56007 [Under development]	20.00
Innovation management -idea management	

## 7 Additional Information

### Drivers / Leaders in Standards Development

The diagram below via the NSAI TC45 secretary illustrates how active engagement by Irish experts in standards development - as part of the innovation management process - can deliver real value for Irish companies; particularly for 'drivers' / leaders in the standards development process.

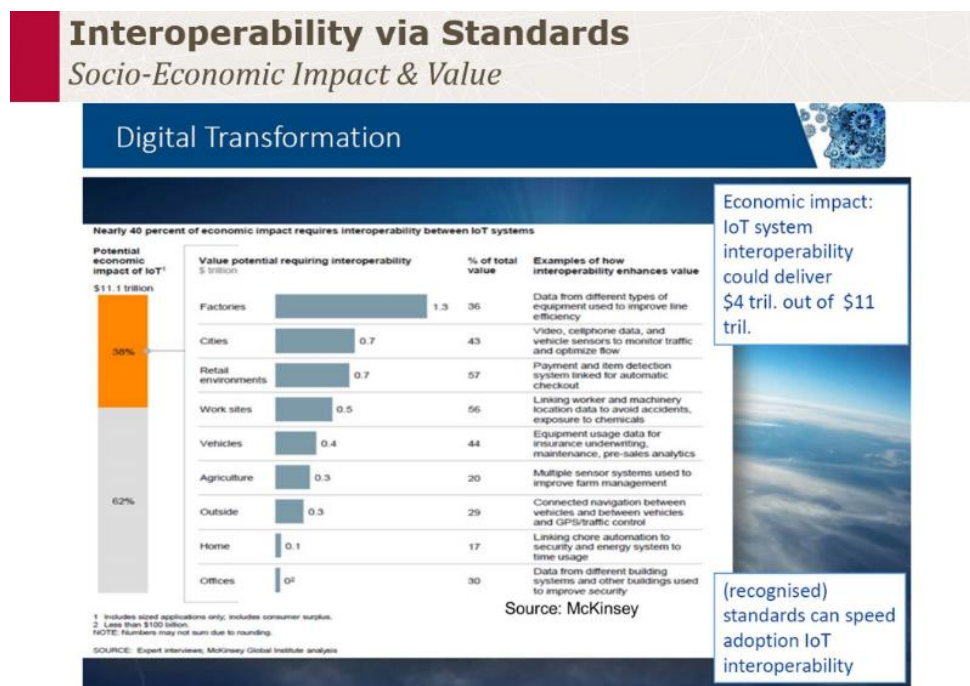


## Standards Create Real Value - Key Enablers in Digital Innovation & Transformation

As new digital innovations transform traditional sectors of the economy ranging from smart agriculture, digital manufacturing to Smart Cities & Communities, interoperability via standards is a critical. The is probably most easily illustrated in context of the Internet-of-Things /IOT. According to McKinsey2:

*Interoperability between IoT systems is critically important to capturing maximum value; on average, interoperability is required for 40 percent of potential value across IoT applications and by nearly 60 percent in some settings.*

Standards are key enablers of interoperability, and companies that embed standards development within their Innovation Management System can generate and capture significant value from their integrated innovation & standards development activities – as illustrated in the diagram below (chart from McKinsey report alluded to above):



As well as the direct business value delivered by interoperability-standards as outlined above, organisations that incorporate standard-essential patents (SEPs) into international standards can generate very substantial revenue and profits from SEP licensing. For example, license royalty income for 2G, 3G and 4G standards is approximately EUR 18 billion per year<sup>3</sup>. Innovative Irish start-ups and SMEs in IOT and other emerging technology areas that actively engage as ‘drivers’ in the standards development process and get their innovative ideas and IP into new and evolving standards could also reap substantial SEP-licensing rewards.

<sup>2</sup> *The internet of things: mapping the value beyond the hype*. McKinsey Global Institute, June 2015.

<sup>3</sup> *Setting out the EU approach to Standard Essential Patents*. European Commission, 29.11.2017 COM(2017) 712 final.

## Training for Committee Members During 2018

### ***Operation of a Standards Committee***

- Outlined the NSAI procedure / policy around National Standards Committees, like NSAI TC 45 – as outlined in NSAI policy document P-ST-01 ([N168](#)).
- This policy outlines the procedures for the establishment, selection, operation, conduct, review and disbandment of a new NSAI Standards Consultative Committee (in line with Section 10 (2) of NSAI Act, 1996). Appendix A summarises the functions of NSAI consultative committees, and Appendix B the responsibilities of committee members.

### ***Meeting Sign-in & Intellectual Property Terms***

- NSAI form 'F-ST-09' – the sign-in form that attendees complete / agree to when participating at NSAI standards committee meetings. See [N170](#).
- This form includes a copyright exploitation-rights assignment statement (whereby the copyright of standards documents resides with NSAI); the form also refers to patent disclosures to ensure experts make early upfront disclosure of any patents or patent applications that they intend to introduce into standards meetings / discussions via NSAI and related international standards development organisations (ISO, IEC, ETSI etc)

### ***Standards Development Process***

- Provided overview of the general [ISO Standards Development Process](#) for new and existing members, including related 'stages' and related 'stage codes' so that all TC45 members are aware of where the various current ISO TC279 draft standards are positioned in this general process. See [N193](#) for summary of the various ISO stages.
- Based on the above general process overview, presented **summary table** ([N209](#)) showing the status of each of the ISO TC 279 draft standards, including ISO 56003 (innovation partnership) and ISO TR 56004 (Assessment) which are due to be published in February 2019 – as the first standards to be published in the new ISO 56xxx series.