The stakes of ICT Standardization

Jean-Philippe HUMBERT

14th October 2011

Agenda

I)   **The stakes of ICT Standardization?**

II) **The national context of ICT & Standardization**

III) **The advantages of ICT Standardization**

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II)   The national context of ICT & Standardization

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Introduction – Some definitions

➢ **Information and Communication Technologies (ICT)**

"*Information and Communication technology includes the specifications, design, and development of systems and tools dealing with the capture, representation, processing, security, transfer, interchange, presentation, management, organization, storage and retrieval of information and their related cultural, linguistic adaptability and societal aspects*" (*ISO/IEC JTC1 Long Term Business Plan – 2010-03-08*)

ICT is part of everyday life:

-→ 50% of citizens of the world today use ICT actively

-→ The majority of the world population is facing daily

(active or passive)

- Mobile phones

- Internet

- Various devices (leisure, health, education, government, etc.)

Introduction – Some definitions

➢ **Standardization**

Definition ISO/IEC

« *Proper activity in order to establish, facing real or potential problems, notions destined to a common and repeated use, aiming the achievement of an optimal order in a given context* »
(ISO/IEC Guide 2: 2004)

Definition European Union

« *Standardization is a VOLUNTARY activity, based on CONSENSUS and realized by all stakeholders for their purpose, in an attitude of openness and transparency, within independent and recognized standardization organizations, which leads to standards whose acceptance is voluntary* »
(2000/C141/01)

Definition ILNAS

« *The field of standardization consists in designing and providing reference documents delivering solutions to technical and commercial problems concerning products, goods or services, for a repetitive and continual application between economical, social, technical or research actors* »
(http://www.ilnas.lu)

The need of standards

In a world without standards:

- Each printer would have its own paper format
  - ISO 216:1975 (Writing paper and certain classes of printed matter – Trimmed sizes – A and B series)

- Each CD/DVD drive would have its own CD/DVD data format
  - ISO 9660:1988 (Information processing – Volume and file structure of CD-ROM for information interchange)

- Each appliance would have its own plug and socket format
  - Standardization work from IEC

- *etc.*

- *« Do it once, do it right, do it internationally »*

Introduction – Problematic

➢ **ICT**

&

➢ **Standardization**

What are the stakes of ICT Standardization?

Introduction – What are the stakes of ICT Standardization?

- ➢ **Application of standards: a good practice**

- ➢ **Participation in standards development: a « must »**

  - ➢ **Without participation: a lot of advantages are not reached**

  - ➢ **With participation: everything to gain**

    -→ **A lot of advantages...**

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ILNAS

Institut Luxembourgeois de la Normalisation, de l'Accréditation, de la Sécurité et qualité des produits et services

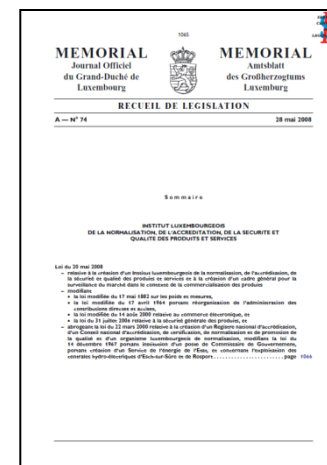### Date of creation

➢ Law of 20th Mai 2008

[http://www.legilux.public.lu/leg/a/archives/2008/0074/index.html]

Legal status

Public administration under the supervision of the Minister of Economy and Foreign Trade

Total

26 employees

A COMPETENCY NETWORK DEDICATED TO COMPETITIVENESS AND CONSUMER PROTECTION
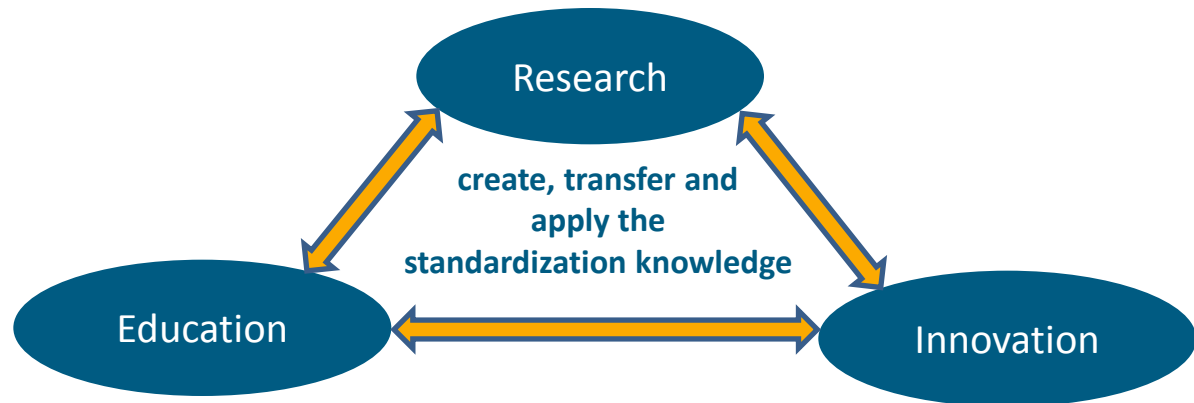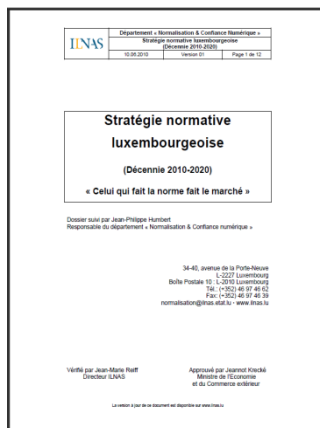
ILNAS – Standardization business development

- ILNAS is the Luxembourg's standards body

- **Main target of the Luxembourg's standards body:**

« *A new momentum for standardization in Luxembourg* »

   - To facilitate acces to the standards (Reading notion)

   - To make easier and encourage the participation in standardization (Writing notion – « Builder »), for:

        -→ Anticipating & and predicting future evolution

        -→ Winning in competitiveness

        -→ Facing up to international competitors

ILNAS - Standardization Strategy for Luxembourg 2010-2020

• Initiated by the governmental program in 2009

• Established by ILNAS for the next decade and approved by the Minister of Economy and Foreign Trade

• Based on:

➢ The matching between EU 2020 strategy and governmental program 2009-2014

➢ The economic approach linked to national needs identified per sector

➢ The guiding principle: « Setting standards means setting the market »

➢ The « knowledge triangle »:

Research

create, transfer and apply the standardization knowledge

Education

Innovation

ILNAS - Standardization Strategy for Luxembourg 2010-2020

GOALS

➢ Better support the national economy in terms of competitiveness, visibility and performance

➢ Promote a homogenous standardization culture at the national level

➢ Improve the international position of Luxembourg in standardization organizations

➢ Launch an innovative and federative way for the national standardization process

FOUNDATIONS

➢ **Pillar I**: A sector-based normative approach as a support for the national economy (*e.g.,* ICT domain)

➢ **Pillar II**: Innovation and research development in the frame of standardization

➢ **Pillar III**: A sector-based development of the Luxembourg's standards body

➢ **Pillar IV**: Standardization training and public awareness

➢ **Pillar V**: The establishment and development of the Economic Interest Grouping "Agence pour la normalisation et l'économie de la connaissance"

➢ http://www.ilnas.public.lu/fr/normalisation [Standardization strategy for Luxembourg (Decade 2010-2020)]

Agence pour la normalisation et l'économie de la connaissance - ANEC

Legal status

Economic Interest Grouping (EIG)
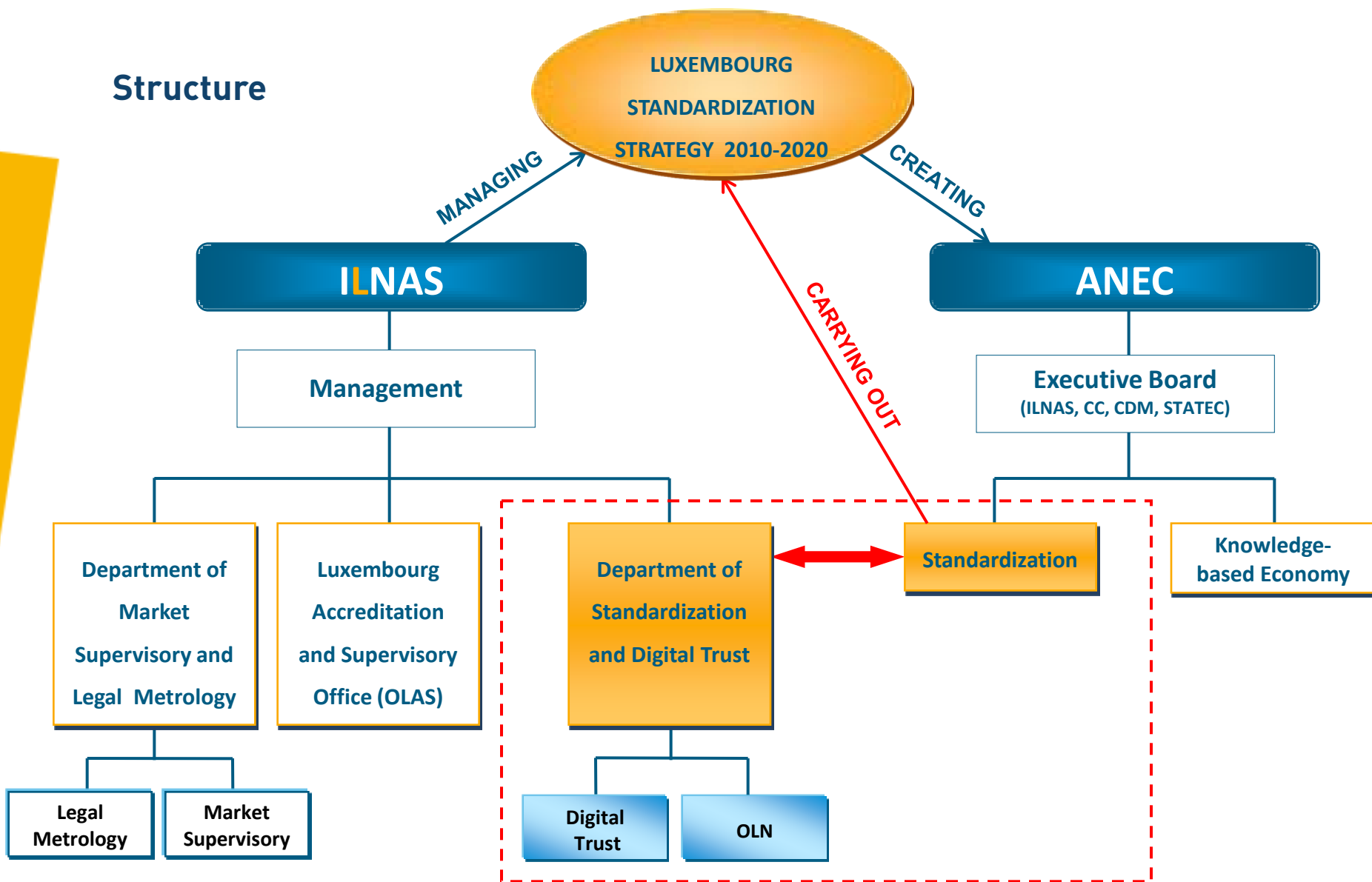
Date of creation

October 4th, 2010

Object

Promoting, increasing awareness and developing trainings in the field of standardization and applied research in order to support the companies' competitiveness in Luxembourg

Partners

Contact: anec@ilnas.etat.lu

Structure

LUXEMBOURG STANDARDIZATION STRATEGY 2010-2020

MANAGING

CREATING

CARRYING OUT

ILNAS

ANEC

Management

Executive Board
(ILNAS, CC, CDM, STATEC)

Department of Market Supervisory and Legal Metrology

Luxembourg Accreditation and Supervisory Office (OLAS)

Department of Standardization and Digital Trust

Standardization

Knowledge-based Economy

Legal Metrology

Market Supervisory

Digital Trust

OLN

Luxembourg, platform player in the field of ICT

1 - The use of ICT in Luxembourg

Luxembourg is world's second « most connected » nation (New International Telecommunication Union Survey – 2010)

➢ **Access of households to information and communication technologies systems (ICT)**

- Access at home to a computer - 90%

- Access to Internet - 90%

- Households using a broadband connection - 78%

Source: STATEC - Luxembourg in figures - 2011

➢ **Equipment of enterprises**

- Enterprises using IT - 98%

- Enterprises with Internet access - 96%

- Enterprises with Internet access and website - 70%

- Internet connection used by enterprises – Broadband - 90%

Source: STATEC - Luxembourg in figures - 2011

2011

LE LUXEMBOURG EN CHIFFRES

STATEC
Institut national de la statistique et des études économiques

FR   SAVOIR POUR AGIR

Luxembourg, platform player in the field of ICT

2 - ICT in the Luxembourg economy

ICT is one of the most competitive economic sectors in Luxembourg:

➢ **Communication infrastructures of high quality**

Excellent connectivity, storage and optimal safety conditions

➢ **European headquarters of some world leading ICT companies**
Examples: Skype, Amazon, iTunes, RTL, PayPal, etc.
(Source: http://www.investinluxembourg.lu/ict)

➢ **Ten data centers**
(Source: The future of data centres in Europe – Luxembourg: where else?, 2010, PWC)

➢ **Significant proportion of ICT specialists**

➢ **Many ICT events**
Examples: European summit on the future Internet, Eurocloud Congress, ICT Spring Conference

➢ **Proliferation of ICT awards**
Examples: Eurocloud Luxembourg Awards, Grand Prix PaperJam ICT 2012

➢ **Many companies, associations, administrations in the field of ICT**
Examples: Visual Online, EPT, Luxtrust, eBRC, Telindus, LuxCloud, LuxConnect, Fedil-ICT, APSI, Eurocloud, Microsoft, Cetrel, Sogeti, Dimension Data, Numericable, CTIE, Siemens, IF Online, Luxembourg for Business – Proud to promote ICT, itSMF, Oracle, SecureIT, IBM, Lu-Cix, etc.

Carte schématique : Connectivité internationale

Source: Deloitte 2007, Enquête

Multiplication of actors in the field of ICT in Luxembourg

Luxembourg, platform player in the field of ICT

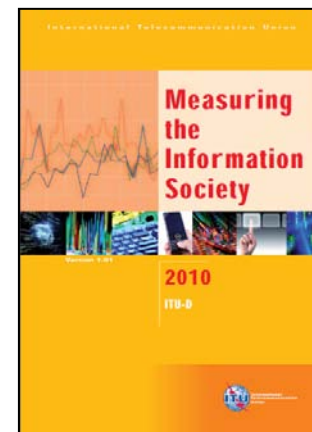## 3 - Luxembourg at an international position in the field of ICT

Study by the International Telecommunication Union (ITU)

Luxembourg is ranked among 159 countries:

- Second place for the most advanced ICT economies
- Fifth position for the countries offering the lowest prices for ICT services
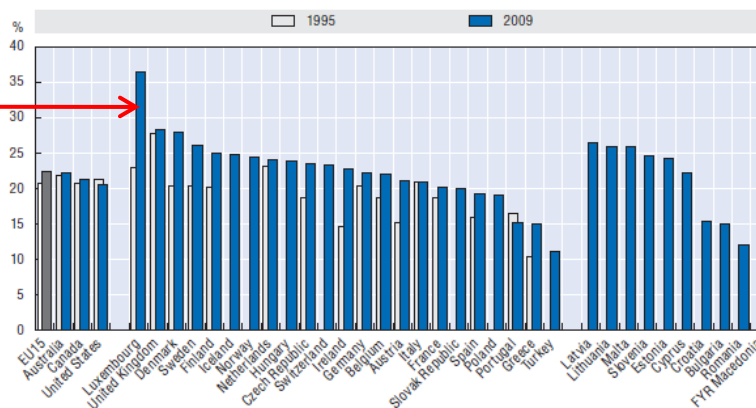
Source: 2010 report: Measuring the Information Society – The ICT Development Index/UIT

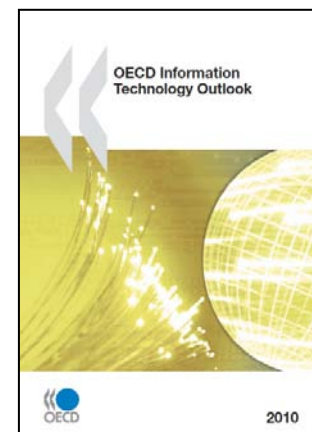### Study by Organisation for Economic Co-operation and Development (OECD)

Luxembourg is the OECD's country with the highest proportion of people working in the field of ICT

Figure 3.12. **Share of ICT-intensive occupations in the total economy, intensive users, 1995[1] and 2009[2]**

Source: OECD Information Technology Outlook 2010

Context: European and international level - ICT Standardization

ICT Standardization is a priority for the European Union:

➢ **Commission White Paper "Modernising standardization in the field of ICT" - 2009**

- Use of ICT standards in public procurement
- Promote synergy between research, innovation and standardization
- Take into account intellectual property rights in the establishment of ICT standards
- Establish better cooperation between the fora / consortia and standards bodies
- Strengthen dialogue and partnership with stakeholders

Source: http://www.eurosfaire.prd.fr/7pc/doc/1254755952_com_2009_324_03_07_2009.pdf

➢ **"A digital strategy for Europe" ("A digital agenda for Europe") - 2010**

- Improve the ICT Standardization and interoperability
- Improve the confidence and security
- Increase access to a fast Internet connection

Source: http://ec.europa.eu/information_society/digital-agenda/documents/digital-agenda-communication-fr.pdf

➢ **Communication from the European Commission to improve the standardization - 2011**

- Europe will push for more international standards
- Develop a light and fast way for ICT standards developed by standards organizations to be recognized
- Develop standards for services associated with high-tech products

Source:
http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/668&format=HTML&aged=0&language=FR&guiLanguage=fr

Context: European and international level – Structures of ICT Standardization

International level

ITU = International Telecommunication Unit (1865)

ISO = International Organization for Standardization (1946)

IEC = International Electrotechnical Commission (1906)

ISO/IEC JTC1 = Joint Technical Committee 1 (1987), 1st joint technical committee between ISO and IEC for ICT

European level

CENELEC = European Committee for Electrotechnical Standardization (1973)

ETSI = European Telecommunications Standards Institute (1982)

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The advantages of standardization

«*Why to participate in standardization?*»

-→ <u>At the industry level, by participating you can</u>:

- Plan for the future

- Knowledge on upcoming work
  - Standards as a part of your strategy
  - Inside knowledge

- Have the opportunity to get an inside view of the standards most relevant to your goals

- Have the opportunity to influence the future of your industry

- Have the opportunity to be at the standards-making table alongside other industry players, regulators customers and partners
  - Allow participants to collaborate fo competitiveness
  - Get access to what your competitors are saying on a particular subject
  - Opportunity to collaborate with your customers and partners

The advantages of standardization

« *Why to participate in standardization?* »

-→ <u>At the industry level, by participating you can</u>:

- Opportunity to influence the outcome of a standard to make sure that all interests are taken into account

- Get a voice in the development of new standards

« *Our business is highly dependent on data sharing and interoperability... To be on the leading edge and ready to go where our customers are, we have to be in a position to anticipate where the standards are going and be strategic in building them into our platforms* »

-→ *Mr Tom Grissen – CEO of Daon (ISO Focus+, February 2011)*

The advantages of standardization

«*Why to participate in standardization?*»

-→ <u>At the governement level, by participating you can:</u>

- Get a valuable additional information to regulation

- Get a means for ensuring best pratice while facilitating trade

- Have a say on specifications of interest in different domains

- Bring the national interests and concerns to the decision makers

- Facilitate dialogue between countries, industry players and other stakeholders

« *Our Swedish experiences over the years have taught us that there are important benefits from participating in the international standardization process, Among other things, an active participations ensures that national priorities ans circumstances are reflected in International Standards* »

-→ *Ms Ewa Björling – Swedish Minister for Trade (ISO Focus+, February 2010)*

The advantages of standardization

«*Why to participate in standardization?*»

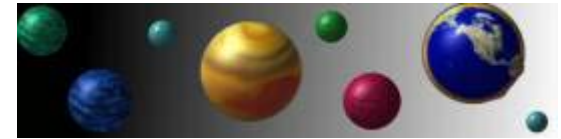-→ <u>At the consumers level, by participating you can contribute:</u>

- By providing data on safety aspects and ensuring that safety is properly addressed

- By giving examples of how products and services are actually used (or misused) in practice

- By checking that the performance requirements and test method reflect the way products and services are actually used

« *Consumers need to participate effectively, both nationally and internationally, in policy and in technical work. To do this consumer organizations have to overcome many challenges... »*

-→ *Mr Joost Martens – Director General of Consumers International (ISO Focus+, October 2010)*

![ILNAS logo] ![Ministère de l'Économie et du Commerce Extérieur] ![ANEC logo]

The advantages of standardization

«*Why to participate in standardization?*»

-→ <u>At the international organizations level</u>, by participating you can:

- Bring benefits to all parties

- Coordinate efforts

- Be involved in the development of widely accepted International Standards

« By participating in the ISO standards process, the UPU has a voice in the development and evolution of ISO standards that impact the post office »

-→ *Mr Edouard Dayan – Director General of Universal Postal Union (UPU)*
(ISO Focus+, April 2010)

The advantages of ICT Standardization – From the functional point of view

Without standards for ICT, it would be impossible to exchange information and communicate with networks and services

- Standardization allows to:

    - Ensure interoperability between systems and equipments
    - Increase user confidence

- ICT Standardization has many advantages for the company:

    - Improvement of competitiveness
    - Economies of scale
    - Lower costs

The advantages of ICT Standardization – From the economic point of view

ICT Standardization represents a considerable economic stake

Example: The area of mobile telephony and software to ensure the leadership of their respective standards

➢ **An effective standard in the field of ICT can:**

- ▪ Make life easier for consumers
- ▪ Promote sustainability
- ▪ Strengthen competitiveness and technological advance

Example: The new standard charger for mobile phones adaptable to all models as an example of the advantage of standards in everyday life
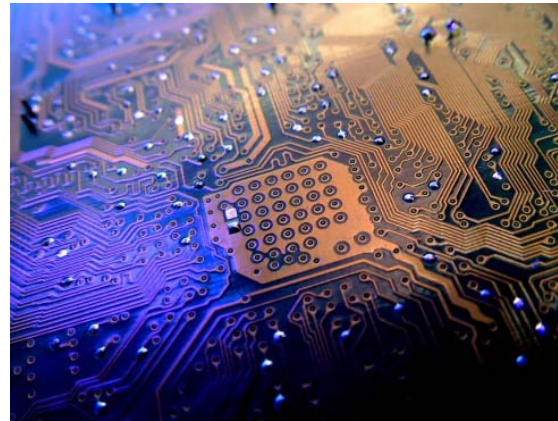
➢ **ICT Standardization has a global outlook:**

- ▪ Vision of future developments
- ▪ Forecasting needs
- ▪ Validation of current projects
- ▪ Development and prospective adapted
- ▪ Market Access
- ▪ European and international positioning

The advantages of ICT Standardization – From a societal perspective

ICT Standardization will lead to:

- Stimulate innovation

- Reduce administrative costs

- Facilitate the emergence of a truly digital society

- Enhance interoperability between:

  - ✓ Devices

  - ✓ Applications

  - ✓ Data repositories

  - ✓ Services

  - ✓ Networks

The advantages of ICT Standardization – ISO/IEC JTC1

➢ The richness of ISO/IEC JTC1 – [The Delta Value as an IS Provider (JTC1 Document N 10015)]
    [http://www.iso.org/iso/jtc1_home]

Economical and commercial qualifications

An important justification for the development of ICT standards is related to economy, both directly and indirectly

Direct economic effects are, for example:

• A standard means business
• Re-usability, which reduces the cost of development, production, testing, etc
• Market size: standardization fosters competition, and markets with competition grow often bigger than markets without competition

Some indirect economic effects are:

• A standard is a tool for market access
• Shared and reduced risk in market development,
• The creation of tools for development, testing, etc, in case a market is large enough
• User comfort with vendor products embodying standards

The advantages of ICT Standardization – ISO/IEC JTC1

➢ The richness of ISO/IEC JTC1 – [The Delta Value as an IS Provider (JTC1 Document N 10015)]

Technical qualifications

A second important justification is technical:

• Interworking of equipment

• Interchange of data via networks and media

• Shared use of data by different applications

• Hardware and software interfaces

• A standard provides unambiguous information

• A standard demonstrates leadership in technology

The advantages of ICT Standardization – ISO/IEC JTC1

➢ The richness of ISO/IEC JTC1 – [The Delta Value as an IS Provider (JTC1 Document N 10015)]

Political and public interest qualifications

The third justification is often combined with legal or regulatory arrangements, for example:

• Security

• Safety

• Environmental protection

• Cultural aspects

• Linguistic aspects (character sets, locals, etc.)

The advantages of ICT Standardization – A structure at the national level

➢ ILNAS – Digital Trust Department

➢ Missions

- Build confidence to become more competitive on ICT market

- Increase confidence in electronic trading

- Support the paperless to improve and simplify many processes at the national level

- Enhance and support the instruments of digital trust

- Framing the field of digital trust through research and innovation

➢ Services

- Accreditation and Supervision of Certification Service Providers (CSP) issuing qualified certificates

- Management and update of the CSP's trusted list PSC [National level]

- National monitoring and management of ISO / IEC JTC1 "Information technology " [Presidency]

- Active collaboration with academia and research

The advantages of ICT Standardization – A structure at the national level

➢ ILNAS – Digital Trust Department

➢ National development of ISO/IEC JTC1 – Standardization:

- ILNAS registration (Digital Trust Service) to ISO/IEC JTC1, as participating member (P), February 2009

- Monitoring the activities of 18 technical subcommittees of ISO/IEC JTC1 (whole normative ICT), transcript changes, advances and relevance to the Grand Duchy of Luxembourg

- Formalization of an information update for any decision/action in the field of digital trust at the national level

- Communication at the national level (in relation to international meetings of JTC1 [Yearly participation]), among others specifically on the areas of safety and quality of information

- Management of relations and trade with other ISO/IEC JTC1 participating members (35 participating members (P) and 56 observer members (O) at 09/27/2011)

The advantages of ICT Standardization – ISO/IEC JTC1 Plenary Meeting

➢ **ILNAS – Digital Trust Department**

➢ ISO/IEC Plenary Meeting – Some contacts:

- **Agoria ICT** [**BELGIQUE**]

- **Chungnam National University [COREE SUD]**

- **Electronics and Telecommunications Research Institute [COREE SUD]**

- **Korean Agency for Technology & Standards [COREE SUD]**

- **Ubiquitous Media Contents Alliance [COREE SUD]**

- **Ecma International [SUISSE]**

- **Federal Network Agency [ALLEMAGNE]**

- **Finnish Standards Association [FINLANDE]**

- **Hewlett Packard [FRANCE]**

The advantages of ICT Standardization – ISO/IEC JTC1 Plenary Meeting

➢ **ILNAS – Digital Trust Department**

➢ ISO/IEC Plenary Meeting – Some contacts:

- **IBM [ALLEMAGNE]**

- **Lebanese Standards Institution [LIBAN]**

- **Netherlands Standardization Institute [PAYS-BAS]**

- **Microsoft Middle East & Africa [MAROC]**

- **Microsoft Corporation [ETATS-UNIS]**

- **Microsoft [IRLANDE]**

- **Microsoft [NOUVELLE-ZELANDE]**

- **Orange [FRANCE]**

- **Paris Descartes University [FRANCE]**

Thank you for your attention

Contacts

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« Standardization: an essential tool to boost competitiveness »