Technology, innovation and social responsibility: the role of standardization

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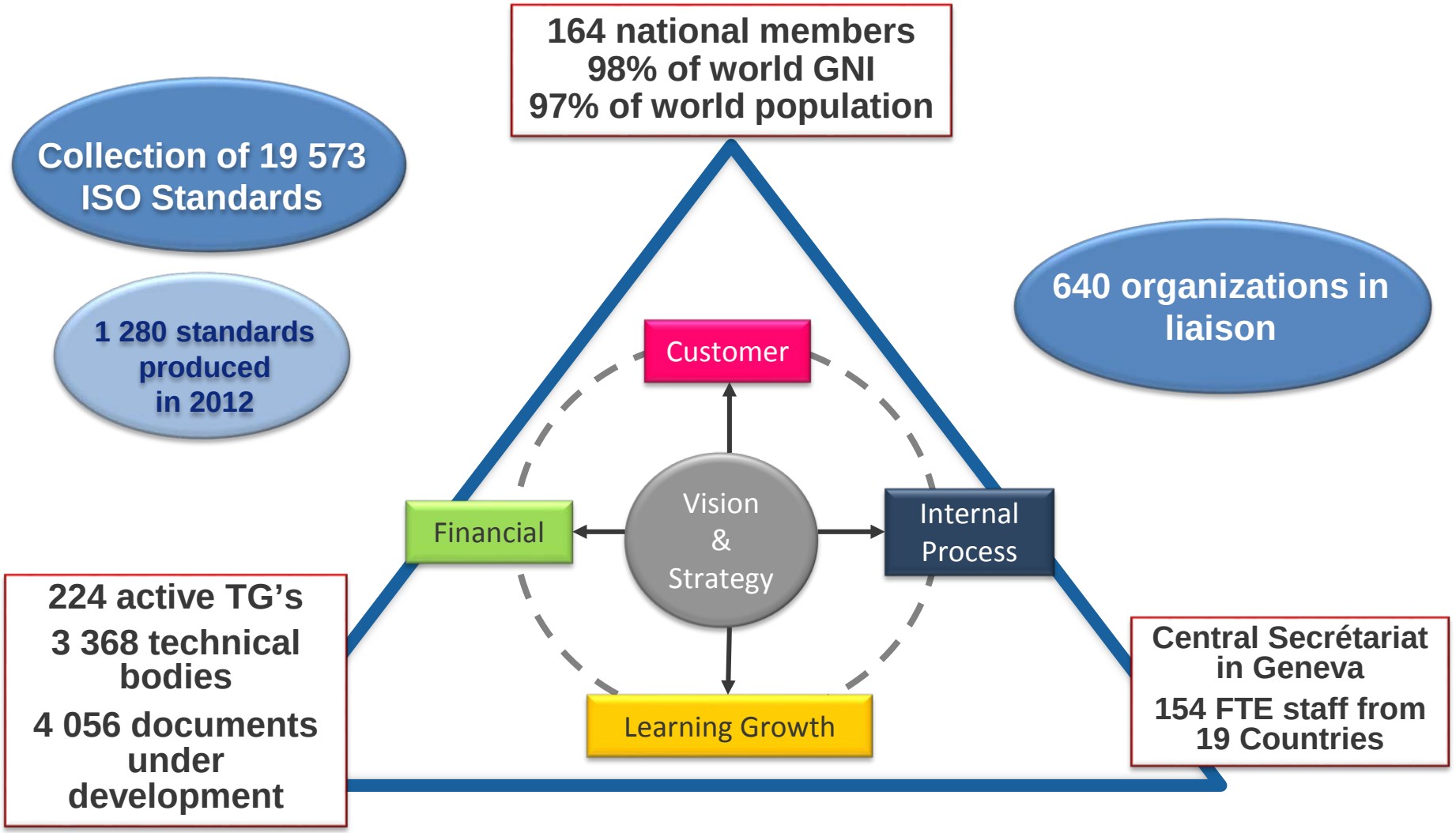
ISO – A Global System

December 2012

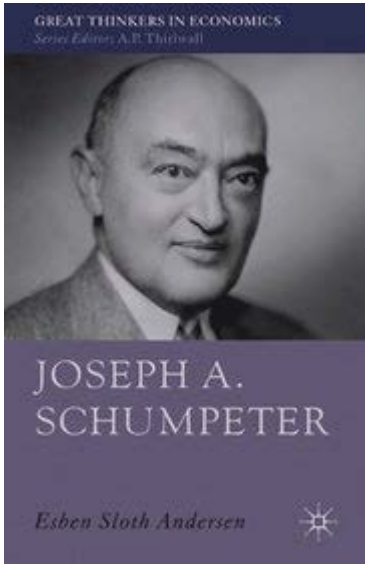


Innovation

- An innovation is the **implementation of a new or significantly improved** product (good or service) or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations (Oslo Manual 2005, OECD)

- According to Schumpeter:
  - I. Introducing a new good including a new level of quality of a good
  - II. Employing new processes of production (e.g. automation)
  - III. Successfully exploring new markets (e.g. export)
  - IV. Using “new” resources or raw materials (incl. supply chain)
  - V. Changing the setup or market position of an organization

  - **Inventions and innovations** can be separated
  - Key to innovation is (successfully) finding and employing new combinations of I-V



Standard

- Document established by **consensus** and approved by a **recognized body** that provides for common and repeated use, **rules, guidelines or characteristics** for activities or their results aimed at **achieving the optimum degree of order** in a given context

  (*NOTE: standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefit*)

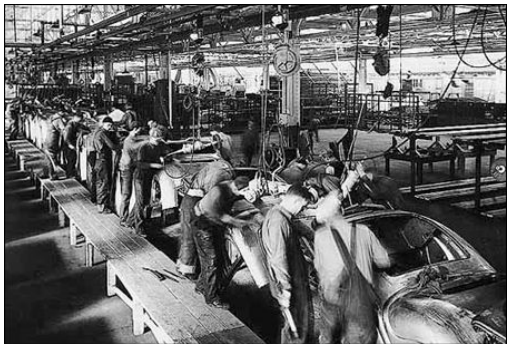
ISO/IEC Guide 2:2004

A knight (Jan I van Brabant) flying a heraldic flag in battle (illustration from Codex Manesse, ca. 1304 – German medieval songbook)

Standards are an essential element of the infrastructure of modern industrial societies

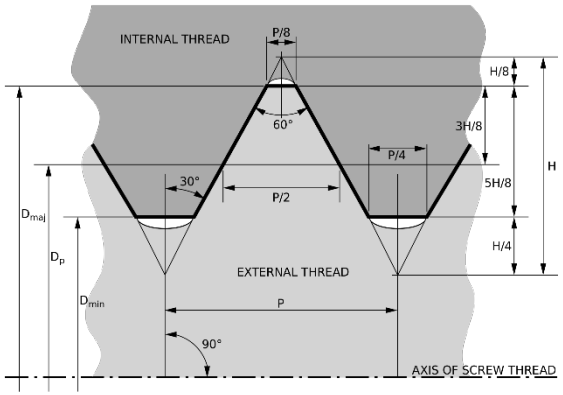
Ensuring:

- *reliable* ***measurement and testing***
- ***interchangeability of parts***
- ***interoperability*** *of components*
- ***codification of kowledge*** *re: characteristics and properties of materials and products, structure and organization of processes*
- *objective* ***criteria and methods*** *to assess health and safety requirements and environmental impact*



Standards support innovation by

Applying, at the right time, **critical design constraints**



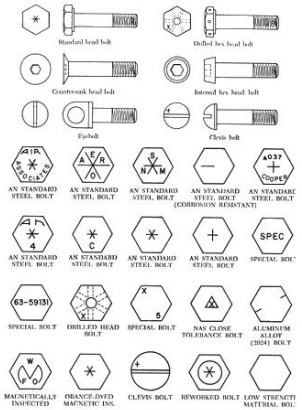
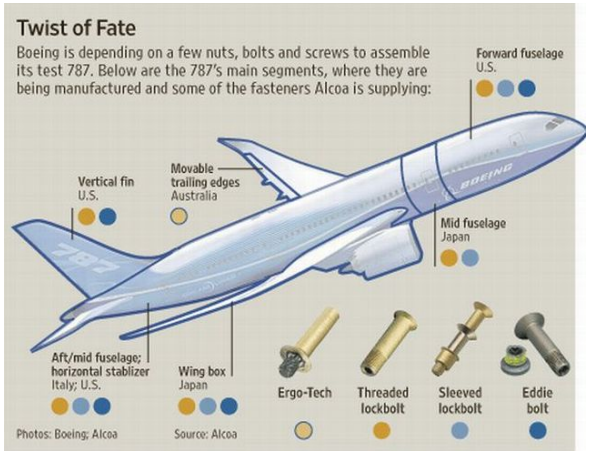
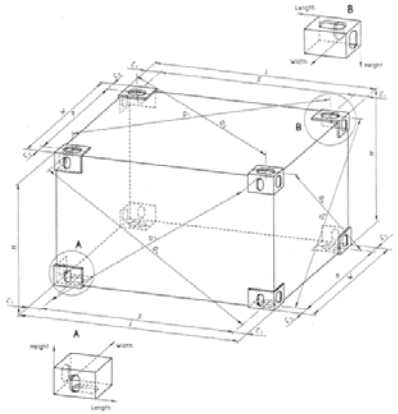


FIGURE 6–1. Aircraft bolt identification.

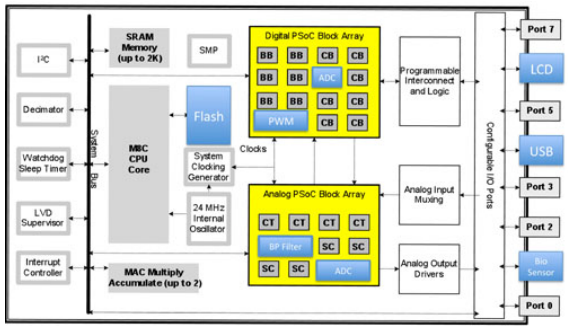


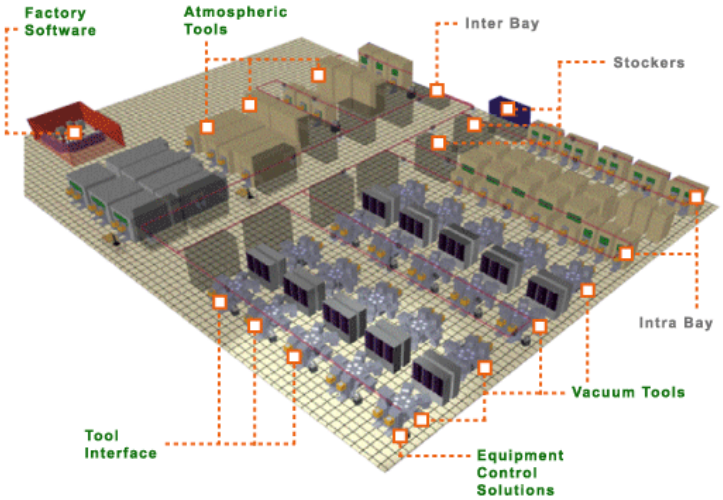
Enabling the **dissemination of technology**



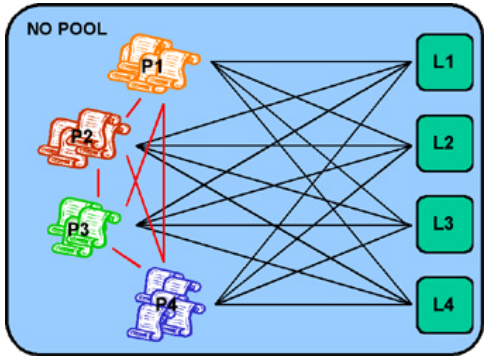
Standards support innovation by

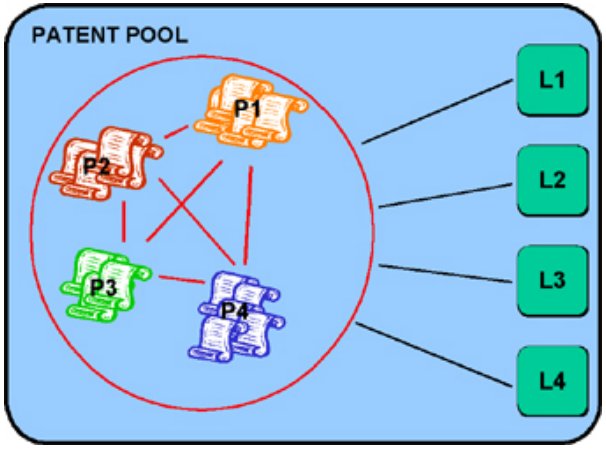
Allowing to **share investment and risk**



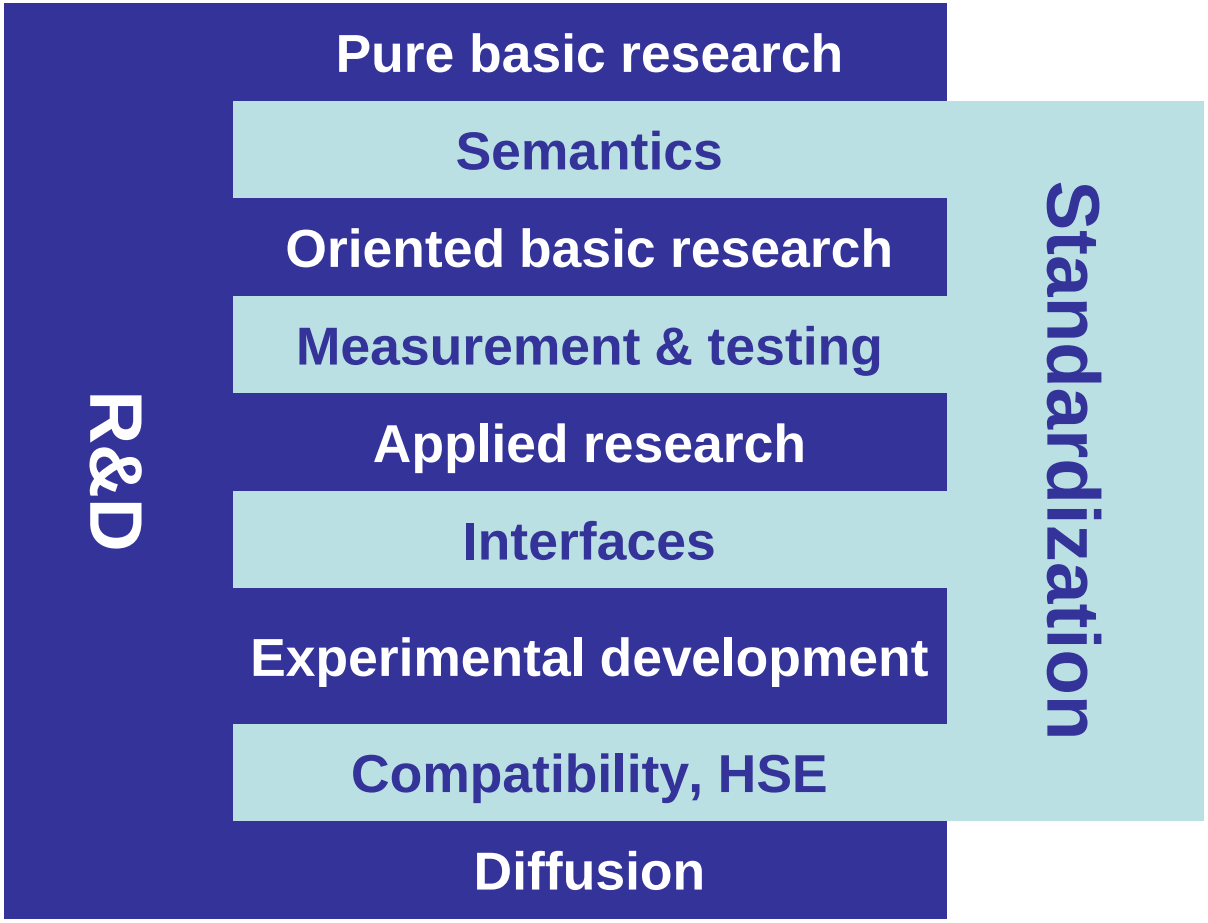


Helping to **remove undue proprietary interests** and **barriers to trade**





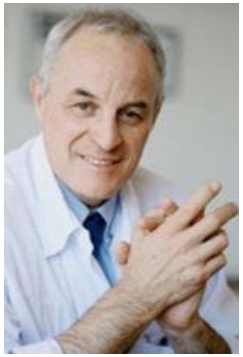
Role of standards in the research and development process



Source: Knut Blind (Chair of Innovation Economics, Technical University of Berlin, Germany and head of the research group "Public Innovation" at Fraunhofer FOKUS, Berlin, Germany)

International Conference on Standardization and Innovation

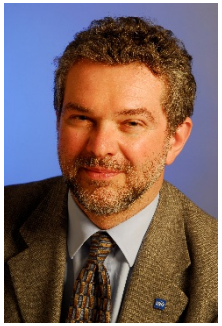
13-14 November 2014 @ CERN, Geneva












Standardization and Innovation

http://www.iso.org/iso/standardization_and_innovation.pdf

What is sustainable development?

The Brundtland report (1987) defines:

Sustainable development is ***development that meets the needs of the present without compromising the ability of future generations to meet their own needs****.*

It contains within it two key concepts:

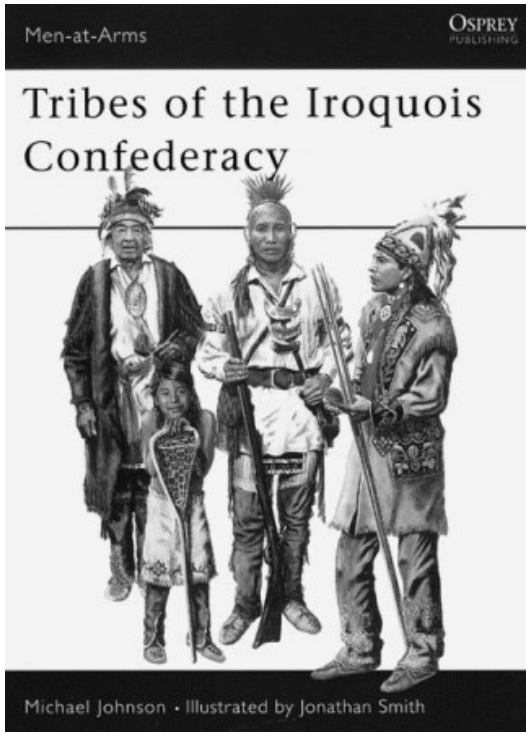
- *the concept of* ***'needs'****, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of* ***limitations*** *imposed by the state of technology and social organization on the environment's ability to meet present and future needs*

Great binding law of the Iroquois nations

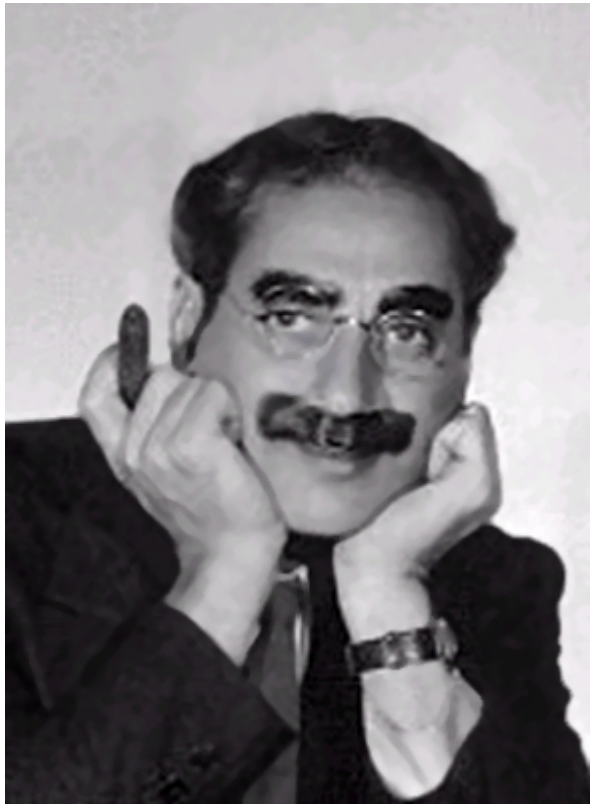
" *In all of your deliberations in the Confederate Council, in your efforts at law making, in all your official acts,* ***self interest shall be cast into oblivion****.*

Cast not over your shoulder behind you the warnings of the nephews and nieces should they chide you for any error or wrong you may do, but return to the way of the Great Law which is just and right.

Look and listen for the welfare of the whole people and ***have always in view not only the present but also the coming generations****, even those whose faces are yet beneath the surface of the ground –* ***the unborn of the future Nation***."



“***Why should I do anything for future generations — what have they ever done for me?***”



Achieving Sustainable Development goals

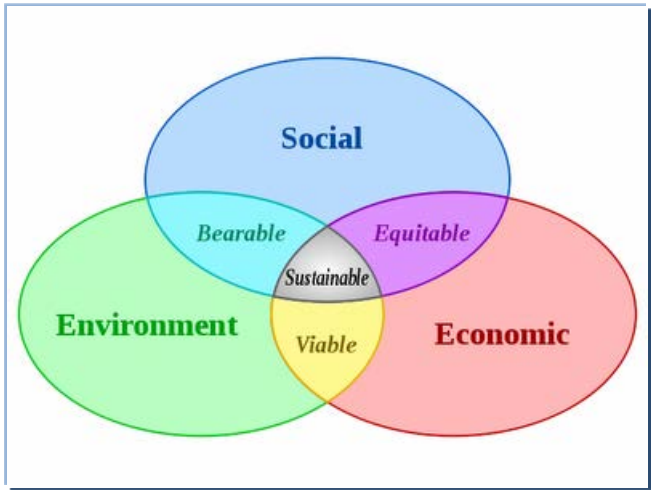
- It is a difficult and complex task
- Many challenges to be addressed (cultural, financial, economic, political, technical)
- It requires changing mentalities, deep rooted economic models, models of behaviour of citizens and organizations
- **Dialogue, engagement and cooperation** among all the concerned parties are essential factors

Standards

Can be important tools that support the implementation of good practices in a broad variety of contexts

The vision

Standards are an essential element of the infrastructure of industrial societies – in a similar way, standards can be an essential component of the **emerging infrastructure of a sustainable world**



Contributing to re-thinking:

- *Use and / or creation of **Materials***
- *Products **design** and **lifecycles***
- *Impact of human activities on the environment*
- *Economic and social models, with a view to **preserve natural capital** and **increase human and social capital***

Standards and sustainability

Standards can contribute to sustainability:

- *Directly:* when they specifically address sustainability issues
- *Indirectly:* when they relate to testing, products, procedures, services, management systems that impact sustainability in specific areas

Many standards developed by ISO and National Standards Bodies cover sustainability issues

Many other organizations are active in this domain – IGOs, NGOs, think tanks

Addressing sustainability in standards

ISO Guide 82:2014 – *Guidance for addressing sustainability in standards*

Key concepts covered:

- *Issues to consider (in relation to sustainability) before establishing a technical committee or its plan of activity*
- *Approaches (systemic approach, lifecycle approach, precautionary approach, risk-based approach, stakeholder approach,…)*
- *Principles (accountability, transparency, respect of stakeholder interest, ethical behavior, ..)*
- *Assessment of relevance and significance of sustainability issues (to a specific standard)*
- *Provisions to address sustainability issues (guidance or requirements – examples covering various contexts)*

ISO standards and guides directly covering sustainability issues – examples

ISO 26000:2010 – Guidance on social responsibility

ISO Guide 82:2014 – Guidance for addressing sustainability in standards

ISO Guide 64:2008 – Guide for addressing environmental issues in product standards

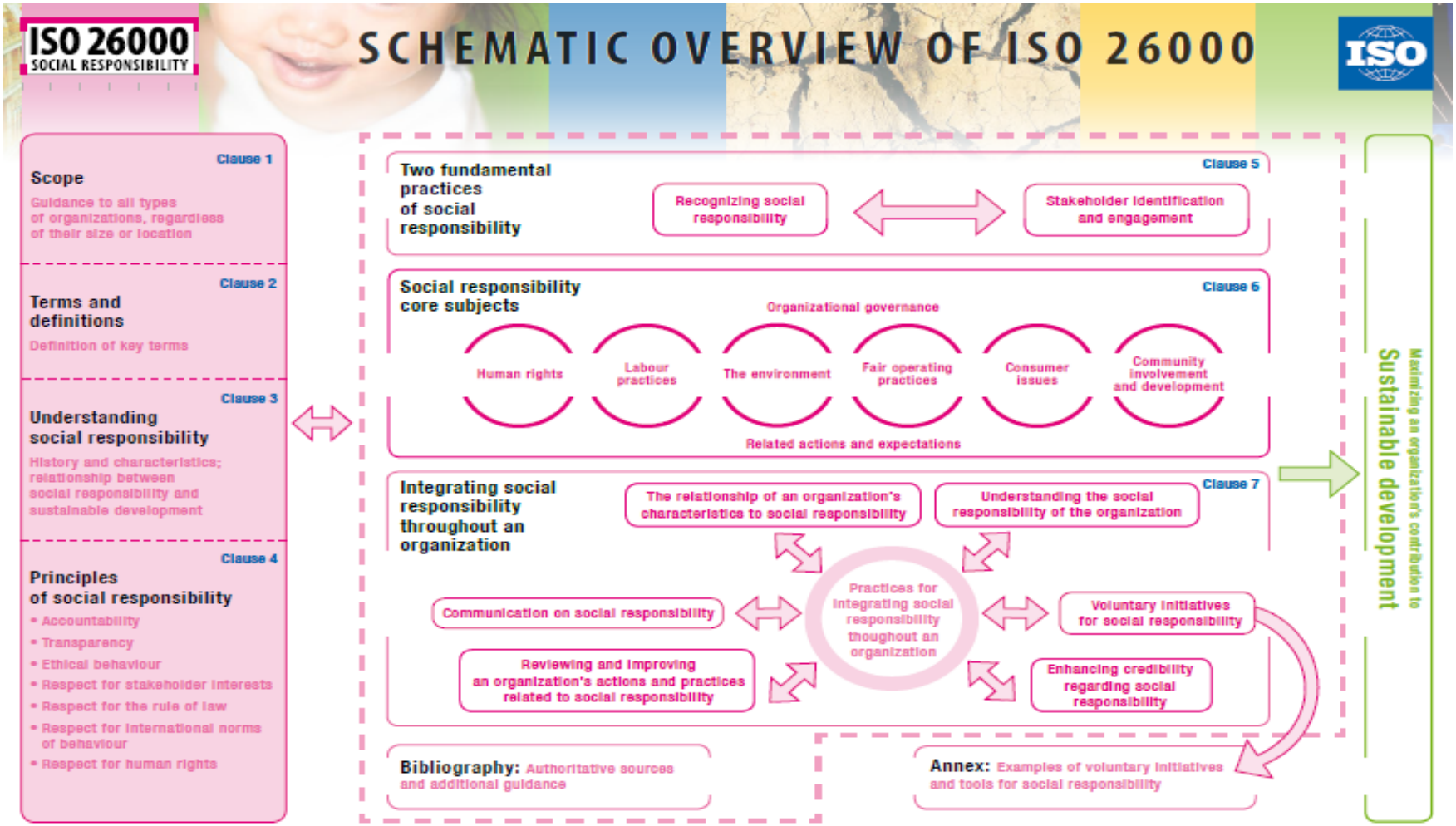
ISO 14000 series of standards and principles related to the environment and environmental performance

Suit of standards developed by **ISO/TC 59**, *Buildings and civil engineering works*, and by **ISO/TC 205** , *Building environment design*

Provides guidance to all types of organizations, regardless of their size or location, on:

- concepts, terms and definitions related to social responsibility;
- the background, trends and characteristics of social responsibility;
- principles and practices relating to social responsibility;
- the core subjects and issues of social responsibility;
- integrating, implementing and promoting socially responsible behaviour throughout the organization and, through its policies and practices, within its sphere of influence;
- identifying and engaging with stakeholders; and
- communicating commitments, performance and other information related to social responsibility.

ISO 26000: Schematic overview



Thank you!

www.iso.org