



HSbooster.eu
TRAINING ACADEMY

Standards Users and Use of Standards

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Who are standards users?

Direct users of a standard (implementers)

- Direct users are standards implementers or organisations and persons that use or apply standards in various activities (e.g. research, design, production, service provision, conformity assessment, etc.).

Some examples are:

- Designers of products, services or processes conforming to the requirements of the standard.
- Testers test the products, services or processes against the requirements in standards or use test methods specified in a standards
- Consultants who prepare organisations for certification in accordance with specific standards
- Regulators – standards can be referenced in regulations

Indirect users of a standard

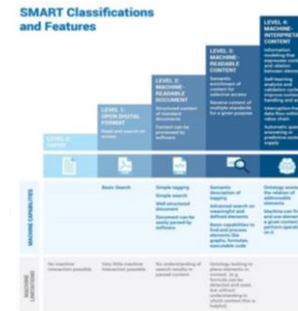
- all those affected by the standard's application, e.g. users of standard-compliant products and services.
- are primarily consumers or professional users of products, services, processes, or systems to which the standard applies.

These can also be interest groups:

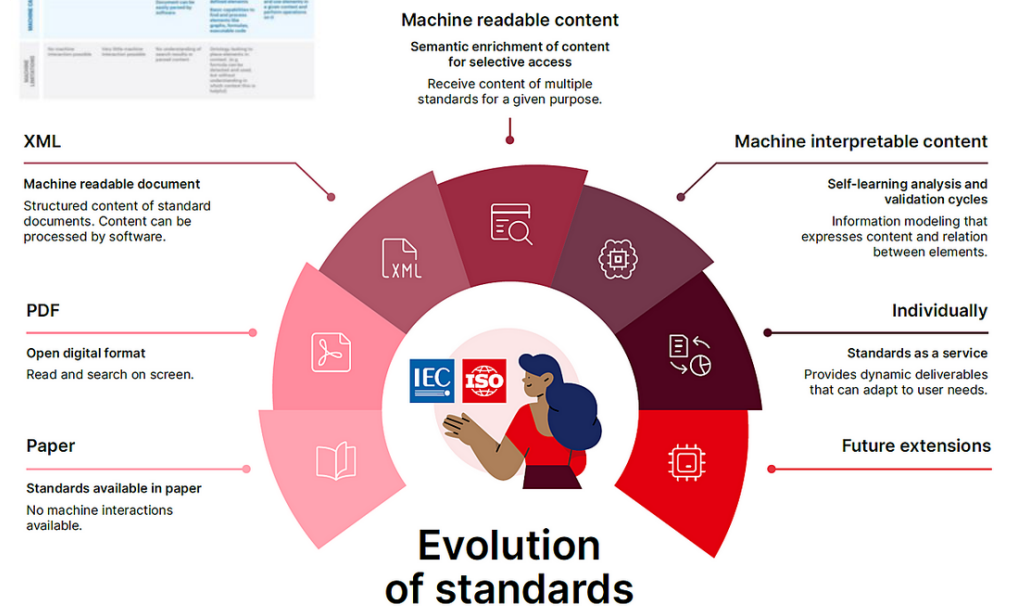
- consumer organisations,
 - trade unions (e.g. in the case of standards concerning occupational safety),
 - environmental organisations, etc. or
 - B2B users of the product, service or process for which standard is used.
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Future of standardisation

- People are the major influencing factors in standardisation.
- Standards originate from technical committees or working groups, where a group of individuals try to find a working solution to a given problem.
- We will need to look at the motivations, attitudes and views that influence these people's work to understand better why a particular specification emerged the way it did.(1)



What are SMART standards? SMART refers to the formats, processes, and tools necessary for a user (human and technology-based) to interact with standards.



Voice of standards users

“The high risk of a standard's failure in the open market if no users were involved in its development”.

International Federation of Standards Users

(IFAN). The IFAN is an independent, non-profit-making international association of national organisations for the application of standards, companies, professional and trade associations, academia, conformity assessment bodies, consultancies, and governmental agencies that are concerned with the use of standards.

Small Business Standards (SBS). The SBS is the voice of European SMS in standardisation at the European and international levels.

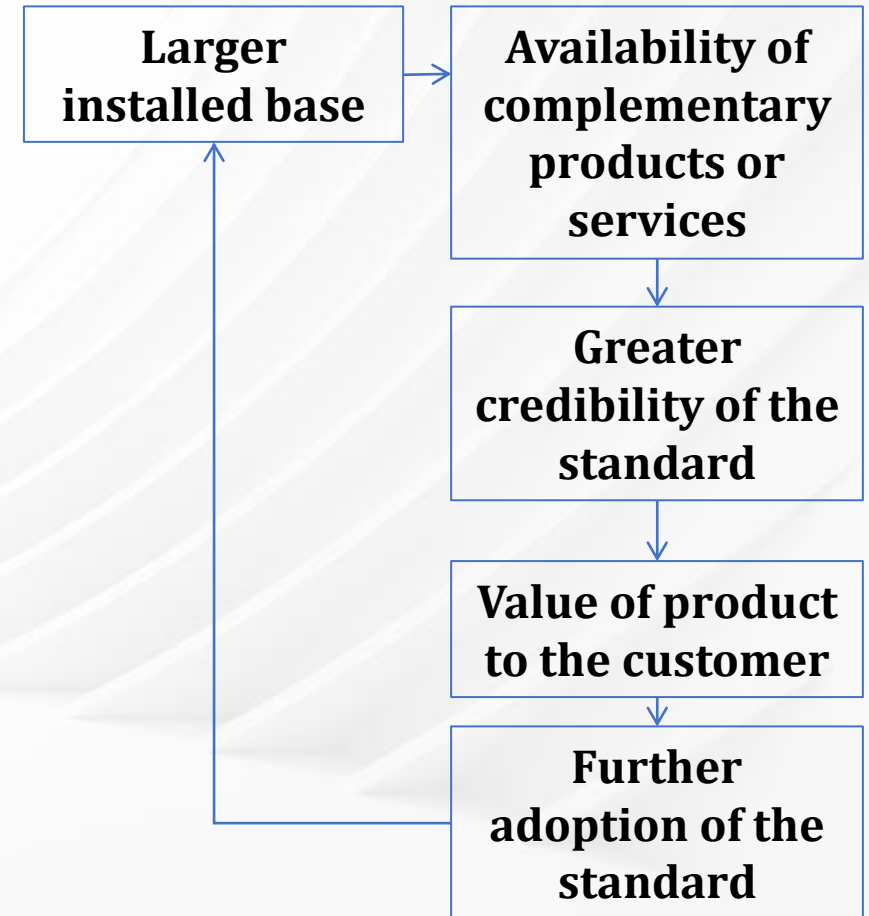
European Association for the Coordination of Consumer Representation in Standardisation

(ANEC). The ANEC represents the European consumers' interest in standards development. It is the European consumers' voice in standardisation.

Consumers International. Consumers International has liaison status with the Consumer Policy Committee of ISO and has the right to propose new work items that can lead to the development of new standards.

HOW DO STANDARD USERS INFLUENCE STANDARDISATION?

- Standards are developed to be used.
- The number of users of one solution is called the installed base.
- In standardisation, the installed base can be a group of users committed to using the standard or simply the number of users of a standard.
- In standardisation you can't do much alone.
- Cooperation usually expands installed base



Dynamic of standards (Grindley, 1995)

The bandwagon effect

- Investopedia: “the bandwagon effect is a psychological phenomenon in which people do something primarily because other people are doing it, regardless of their own beliefs, which they may ignore or override”.

The bandwagon effect in standardisation might be simply explained as a phenomenon that once one standard (or solution) gains a certain installed base, the others tend to use the same standard. Reasons for this phenomenon are: ,

- availability of the standard (solution) prevent "reinventing the wheel";
- availability of information and experiences related to standards implementation influence acceptance of a standard;
- reducing uncertainty (feasibility of a solution is proven);
- network externalities (defined as benefits or harms that a producer has from a product when the number of users using that solution increases or decreases , or "a good is often more valuable to any user, the more others use compatible goods").

See more at <https://www.investopedia.com/terms/b/bandwagon-effect.asp>

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HOW DO STANDARD USERS INFLUENCE STANDARDISATION?

- Look at your computers; there's a good chance you're using a QWERTY keyboard. In that case, you are an indirect standards user – a user of the solution that is called the QWERTY layout.
- The QWERTY layout is also called the de facto standard.
- De facto standards are informal and/or unwritten standards that represent solutions that are in general use.
- If you try to search for the QWERTY standard, you can come across numerous documents, among others, the ISO/IEC 9995 group of standards, which defines the keyboard layouts for text and office systems.
- It is an example of how de facto standards can become formal standards.

CASE STUDY: QWERTY KEYBOARD

- In 1868 Christopher Latham Sholes (1819-1890) patented the first typewriting machine with commercial success.
- The Remington Arms Company took over the production of the first commercial machine, and sales began in 1873.
- This typewriter has long been the most important and widely used tool for administrative work.
- However, this product has had an increasingly pronounced problem: the vowel keys used very often while typing were breaking due to frequent use.
- James Densmore proposed a new layout that would slow down typing and prevent excessive damage to keys.
- Another interpretation is that Densmore's intention was not to slow down typing but to reduce the pressure on the keys by placing the most frequently used keys in pairs at two different ends of the keyboard. Which consequently slows down the typing.
- The new layout became common and represents today's QWERTY layout

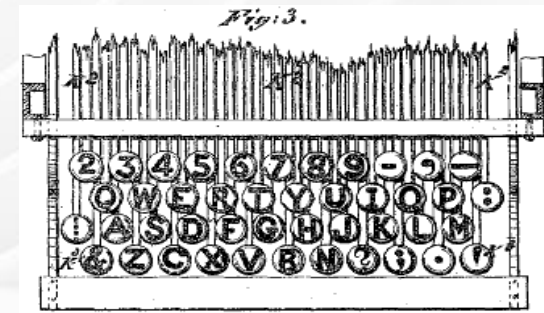


Fig. 1. The first commercial typewriter and display of QWERTY layout [\[1\]](#)

QWERTY layout is de-facto standard

- The motives and intentions of James Densmore have long been forgotten, and most computer keyboards in use today are QWERTY.
 - Today QWERTY keyboards are synonyms for those made following standards issued by the ISO, ANSI, and JSI.
 - Numerous standards address various aspects of keyboards. Standards that refer to the position of letters on an electronic keyboard have been developed from the early 1970'
 - Today, this area is covered mainly by the ISO/IEC 9995. In it, you can find the QWERTY layout
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Why QWERTY when a better solution has long existed?

- August Dvorak (1894–1975) was a famous American psychologist and professor of educational psychology at the University of Washington.
- In 1937, Dvorak and his colleagues published a book on typing behaviour.
- Based on his research, in 1940, Dvorak proposed a new simplified layout with several features that contributed to increased typing speed, reduced typing errors, and increased comfort.

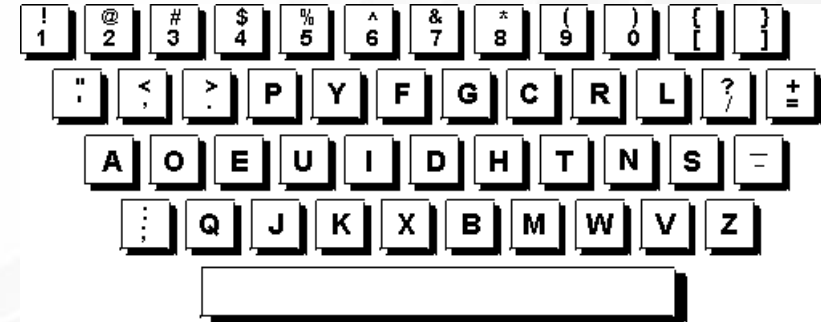


Fig. 2. Dvorak simplified layout

The layout was designed for the English language and allowed 70% of the work to take place in the areas of the keyboard most comfortable for the human hand, unlike the QWERTY keyboard, where only 32% takes place in the comfortable zone. ^[1] Today, buying a simplified Dvorak keyboard in specialised computer equipment stores is possible. Most electronic keyboards on computer screens or mobile devices have options that allow the use of the Dvorak layout as well.

Why was Dvorak's solution not built into our computers?

- There are many reasons, but one might be that PCs need to replace typing machines and attract an installed base of typing machines or devices with a dominant QWERTY layout.
 - Switching costs – the cost of transitioning to a new solution (e.g., training costs for using the Dvorak layout) could have prevented users already using the QWERTY from switching to the new solution and buying PCs.
 - Producers of computers may be worried that the new layout will not be accepted in the market, so they continued with the QWERTY.
 - Why did the QWERTY layout find its place in standards (e.g. ISO, ANSI, JIS) instead of the scientific solution of Professor Dvorak?
 - The dominant practice of SDOs before the 1980s was to include only proven solutions (solutions existing on markets) in standards, and SDOs were reluctant to have innovative solutions in standards.
 - Standards are developed to be used.
 - A successful standard is a standard that is accepted in the market.
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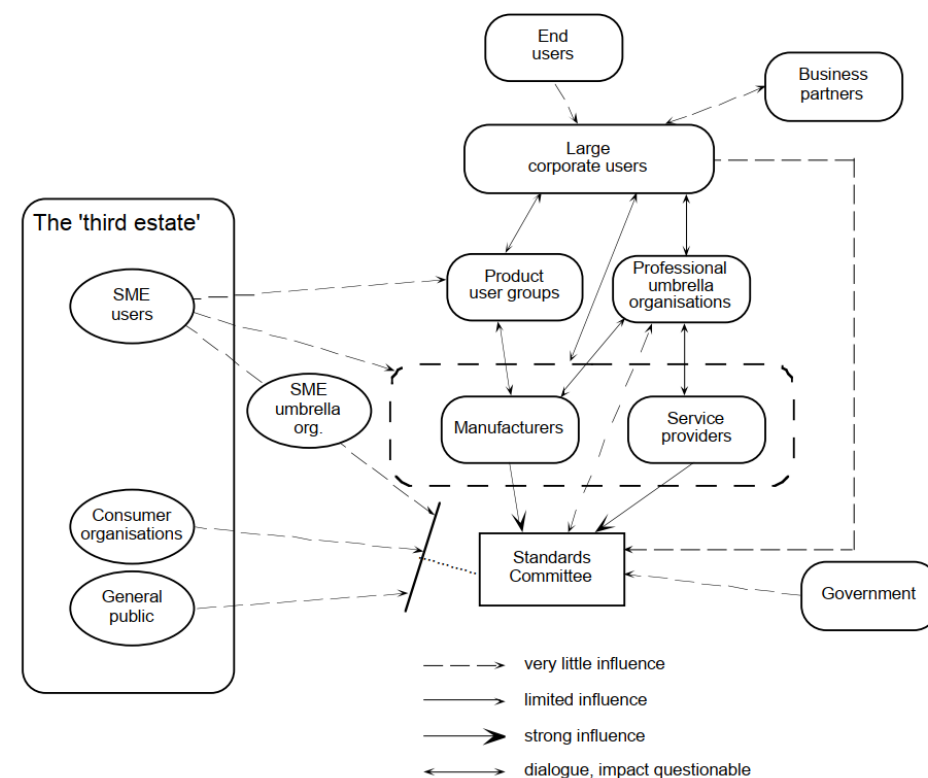
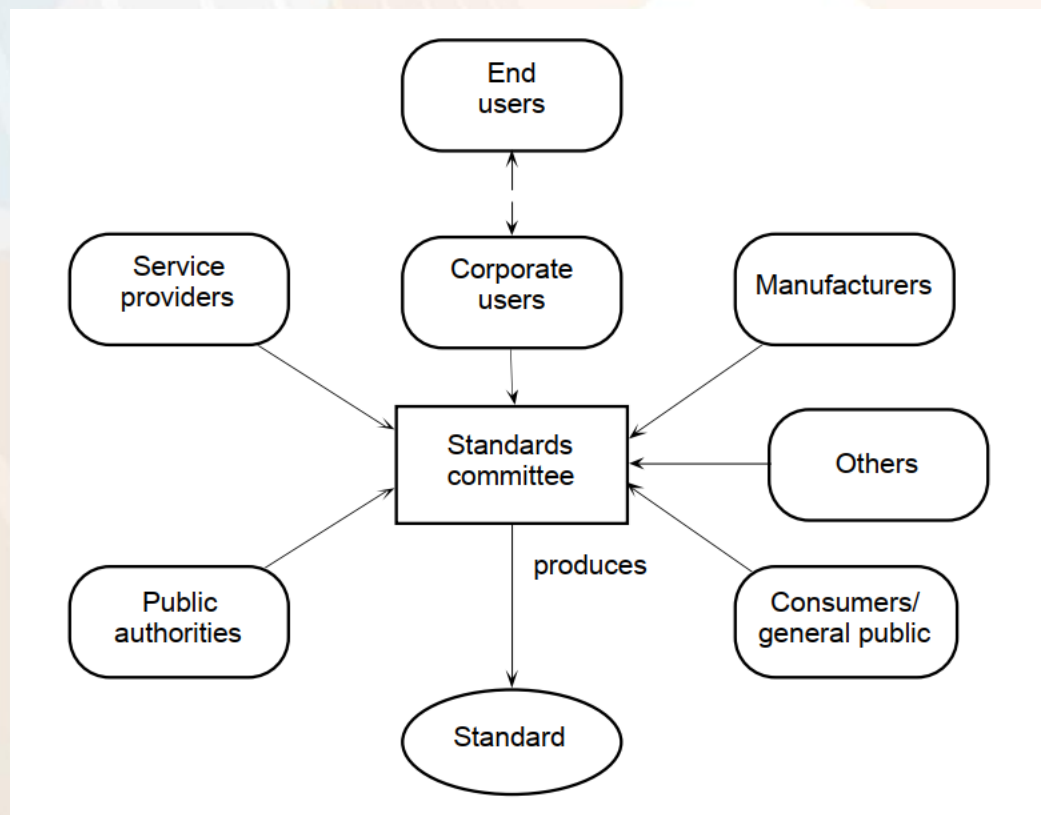
“Lock-in” phenomenon

- Once an installed base is created, users remain loyal to a particular standard even when a solution becomes technologically obsolete or when a new, better solution becomes available.
- In this case, standard conversion (switching to a new, technologically better solution) becomes expensive and time-consuming, and uncertainty about whether consumers on the market will accept the solution becomes the basis for abandoning the new solution.
- This will lead to the lock-in, in which obsolete or incumbent technologies prevent the take up of potentially superior alternatives.
- A large installed base of one solution can also hinder innovation.
- The consequence of this phenomenon is that **standardisation can only be successful if the costs of switching to a new solution are lower than the expected revenues.**

A dominant design

- A dominant design is one that attracts significant market share and a design that achieves a dominant market position.
- The market determines what becomes the dominant design.
- It forces imitative competition design reaction and can trigger the industry to standardised solutions and mass production.
- The QWERTY layout has established itself as the industry's de facto standard due to its general market acceptance.
- The QWERTY was included in ISO/IEC 9995 standards as a proven solution.

Power of standard users



Inadequate knowledge about the value of standards
and of the potential value of active contributions to standards development

1st Mentimeter session

Please name three things that describe the power of direct and indirect standards users?

THANKS!

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