
Standards as Enabler of Innovation in Public Procurement

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Definition of Innovation in the Oslo-Manual 2005 (Eurostat/OECD)

An **innovation** is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations (either new to the firm, the market or the world).

Innovation activities are all scientific, technological, organisational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations.

A **product innovation** is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.

A **process innovation** is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.



Definition of Standardisation by the European Commission 2007

Standardisation is a **voluntary process** for the development of technical specifications based on **consensus** amongst the interested parties themselves: industry in first place, but also a variety of users, interest groups and public authorities.

Standardisation presents the following characteristics:

- The process results in the publication of standards, and other deliverables with a more restricted consensus, such as workshop agreements;
- Standards are made available to the public free of charge or against a fee;
- The implementation of standards may be free, or in some cases subject to payment of a compensation to owners of intellectual property rights;
- The usage of standards remains voluntary.



Definition of Standardisation by the European Commission 2007

Formal standardisation includes the following organisations:

- At national level, ... national standards bodies are the recognised members of the system ... ;
- At European level, there are three recognised European Standards Organisations (ESOs), CEN, CENELEC and ETSI.
- There are 3 recognised international standards organisations ISO, IEC and ITU.

Industry engages in **informal standardisation**,

- e.g. professional associations, fora and consortia,
- in the ICT area some consortia, e .g. like IETF, W3C, OASIS, IEEE, have a more important impact than formal bodies
- some of the most relevant consortia, e .g. IEEE, cooperate with formal standards bodies



Functions of Standards

Type of Standard	Positive Effects	Negative Effects
Compatibility / Interface / Interoperability	<ul style="list-style-type: none"> • Positive network externalities (e. g. telecommunication) • Avoiding lock-ins (from old to new releases of software) • Increased variety of systems or products (e.g. IT systems) and more efficiency in the supply chains 	<ul style="list-style-type: none"> • Monopoly power by proprietary standards
Minimum Quality/ Safety	<ul style="list-style-type: none"> • Correction for adverse selection (no racing to the bottom in quality) • Reduced transaction costs (e. g. lower contract costs) • Correction for negative externalities (e. g. environmental standards) 	<ul style="list-style-type: none"> • Raising rival's costs (too ambitious standards discriminate suppliers of lower quality)
Variety Reduction	<ul style="list-style-type: none"> • Economies of scale due to mass production of one specification (also in earlier stages of the supply chain) • Building focus and critical mass in emerging industries and technologies 	<ul style="list-style-type: none"> • Reduced choice • Market concentration to suppliers of mass products
Information	<ul style="list-style-type: none"> • Facilitates trade due to higher transparency • Reduced transaction costs since specifications are defined 	<ul style="list-style-type: none"> • Raising rival's cost by too ambitious standards

Source: based on Swann 2000



Standards as Drivers for Innovation

- Standards are able to promote the diffusion of innovative products, which is most important for the economic impact of innovation
- Standards level the playing field and promote therefore competition and innovation
- Standards are crucial for innovation in network industries, since compatibility standards are the basis e. g. for communication networks (e. g. GSM)
- Standards are crucial for the substitution of old by new technologies in network industries, since (forward and backward) compatibility allow the coexistence of old and new technologies (e g. GSM and UMTS) necessary for adopters of new technologies
- Standards are crucial for the definition of new platform technologies as basis for competition and innovation in downstream markets (e. g. GSM as platform for numerous mobile services), but also for increase of efficiency and competition in upstream markets
- Standards reflect also user needs and promote therefore the purchase, i. e. the diffusion, of new products by early adopters
- Standards set minimum requirements for environmental, health and safety aspects and increase trust in innovative, possibly more risky products necessary for early adopters



Standards as Barriers for Innovation

- Standards are the outcome of a consensus process of all interested parties and represent more the smallest denominator being no strong incentive for innovation activities compared to more challenging technological specifications defined in governmental top-down regulations
- Standards which are technology-specific and over-prescriptive instead of technology-neutral and focusing on functionalities and performance characteristics do not create leeway and competitive incentives for alternative innovative solutions
- Proprietary standards of single or groups of dominant players may prevent the access of competing technologies to the market and therefore innovation
- Standards which create lock-ins in existing technologies and do not specify interfaces or allow compatibility with follow-up technologies hinder consecutive innovations in an industry



Impacts of Innovation in Public Procurement

Positive impacts

- Higher quality (Service, Infrastructure, Customer requirements)
- Competition between regions
- Lower cost over the whole life cycle of a technology (Life Cycle Costing, subsequent cost)

Negative impacts

- Higher purchasing price
- Higher risks
- Possible small number of suppliers

➤ Standards may help to foster the positive impacts and reduce the negative impacts

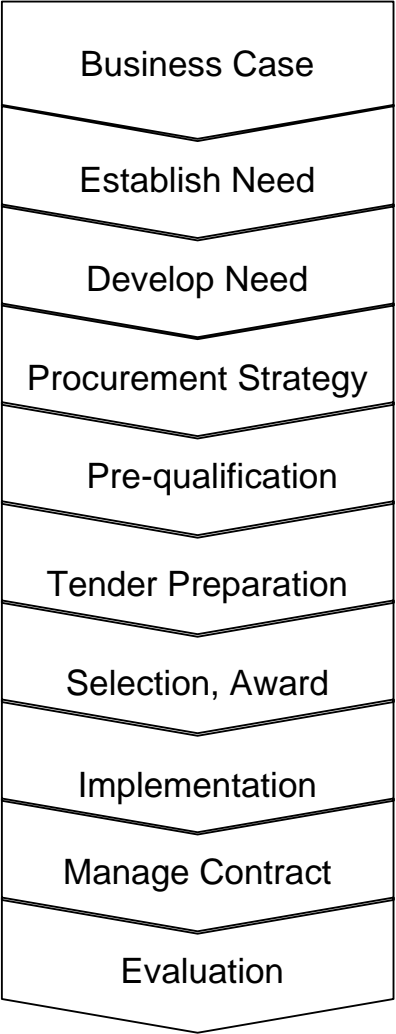


Innovation Promoting Functions of Standards in Public Procurement

- Reduction of costs (via mass production) by the implementation of standards
- Securing interoperability with existing infrastructures (including transition from old to new technologies), i e. no or low costs for gateways or converters and reduced cost for repair and maintenance
- Pushing competition intensity and therefore the innovative pressure among competitors for public tenders
- Reduced risk of competition and innovation reducing lock-in to a specific supplier
- Direct innovation incentive for some companies through the implementation of specific (especially newly released) standards referenced in tenders (= innovation diffusion)
- Risk reduction for the public procurer related to costs but also related to health, environmental and safety risks produces leeway for the procurement of products and services with innovative characteristics
- Positive spill-over on innovation promoting procurement processes in the private sector



Possible Role of Standards in the Different Stages of the Procurement Process



Before Procurement

- Earlier supplier involvement in selecting the standards
- Communication of long-term plans to the market regarding the referencing of standards
- Early cross-functional dialogue (incl. all involved actors)
- Unsolicited proposals and the role of standards
- Standards to solve IPR issues
- Input and output specification
- Consider contracting strategy (incl. involvement of SMEs; appropriateness of partnering)

During Procurement

- Evaluation of proposals by using standards
- Reducing risk by standards
- Evaluate variant bids in relation to standards
- Include appropriate provision for innovation in contract

After Procurement

- Risk and reward sharing by standards
- Manage incentives by using standards
- Continuous improvement via taking account new standards

Source:
based on
Office of
Government
Commerce
(2004)



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Standards as Option for Public Procurers

- Public procurers have in general the following objectives:
 - procure at lowest purchasing cost
 - procure according to best value for money defined as “the optimum combination of whole life costs and quality to meet the user requirement”
 - lowest risk regarding cost and for environment, health and safety
- Referencing standards helps public procurers to achieve these objectives because
 - standards allow the exploitation of economies of scale, i.e. production at lower cost
 - standards promote competition between tenderers and avoid lock-in to a specific supplier in following-up procurement activities
 - standards guarantee compatibility to existing infrastructure, I e. no or low costs for gateways or converters, and reduce cost for repair and maintenance
 - standards set minimum requirements for quality and safety and facilitate the observation of their implementation and the solution of liability cases
- Cost and risk reducing impact of standards create additional leeway for the procurement of products with innovative features connected with higher risk and cost



Challenges

- Various justifications and opportunities to reference standards in public procurement processes in order to promote innovation in the sense of the diffusion of new products and in the sense of the development of innovative features in existing products
- Challenges are
 - dealing with deviations from referenced standards allowed in the existing legal framework
 - convince the public procurer about the benefits of making use of standards, which can be realised from the very beginning of the whole procurement process not only after the completion
 - inform the public procurer about the world of standards
 - increase awareness about differences between innovation promoting and hindering standards
 - make world of standards transparent and accessible
 - clarify referencing consortia standards
 - involve public procurers in standard setting (especially in services)



Thank you for your attention!

