Benefits of Standards
Links Between Research, Standardization and Innovation
The Case of Smart Pedestrian Network (SPN)

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Agenda

- Introduction, Standardization Awareness
- Benefits of Standards
- Link Between Standards Research and Innovation
- Success Stories
- The Case of the Smart Pedestrian Network Project
Standardization Awareness

- CEN Purpose
  - Foster the economy of the European Union (EU) in global trading,
  - the welfare of European citizens and the environment
  - by providing an efficient infrastructure to interested parties
  - for the development, maintenance and distribution of coherent sets of standards and specifications

- https://www.youtube.com/watch?v=-N2hh-o7dlE
- https://www.youtube.com/watch?v=HnrK4CEoxw4
Steps of Standards development

• Standards are voluntary agreements that stakeholders are making on a product, a service or a process.

• Together, these parties form a so called technical committee that develops the standard.

• This committee is guided by CEN, which has an advisory and facilitating role.
Steps in Standards development

- Proposal
- Preparation
- Establishing committee
- Developing Standard
- Publication
- Implementation by users
- Evaluation
Benefits of standards

- Increased productivity and innovative efficiency.
- Standards allow faster uptake of innovative solutions and enhance the economic value of research and innovation projects.
  - Dissemination of research results
    - A normative document will become a reference and will ensure that research results are well-known, thus enhancing recognition of the researcher’s results.
  - Opportunity to network
    - Participating in a precise standardization topic alongside other stakeholders allows you to increase your network and to identify potential scientific or commercial collaboration.
Benefits of standards

• Faster and easier access to market
  • Taking into account existing standards within research projects guarantees that, if a product is
developed afterwards, this product will respect existing standards and have a better access to
the market.
  • Moreover, translating research results or innovation into normative documents can provide
technical validation and facilitate access of innovation solutions to the market.
    • terminology in a new area,
    • new measurement methods,
    • application of new technologies,
    • organisation of innovative services,
    • good practices etc.

• Possibility to access European or international markets
  • Developing an EU standard means potential access to the entire EU market (more than 500
million inhabitants).
  • The European Standardization Organizations (ESOs) also have agreements with the
International Standardization Organizations (ISO and IEC).
Benefits of standards

• Helping access to public procurement markets
  • Standards codify state of the art innovative products and services, and are often used as references in public procurement schemes.

• Codification of the state of the art
  • Existing standards can codify and spread state of the art developments to various technologies.
  • The need for additional standards can lead to the identification of new research needs and thus new ideas for research projects.

• Interoperability
  • Standards provide a basis for the integration of technologies into complex, innovative systems and solutions, and assist in ensuring interoperability.

• Reassure consumers
  • Standards can offer reassurance to consumers in the application of new technologies, for example through the assessment of risks, the measurement of performance, etc...
Linking Standardization Research and Innovation
Success Stories

Green transport The project EASYBAT aimed at providing interfaces for switching a battery in and out of an electric car quickly and safely (the connector interfaces between the car, the battery, the communications network, and the battery cooling system).

Design specifications that meet European industry and safety standards.

The objective of the project was to have a next generation, commercially available solution for battery switch integration components and design plans that allow for different types of batteries.

To achieve the expansion into new markets, the project has contributed to the development by CENELEC of CWA 16688, “Battery swap systems interfaces for electric vehicles”.

NEN was as a subcontractor in the project in charge of organizing the Workshop process.
Success Stories

Information and Communication Technologies

The project inTime aimed at generating additional value through adding a business layer on top of the then existing my Open Factory communication infrastructure, already standardized in the German PAS 1074:2007.

The key objective of inTime was to improve delivery reliability in each customer-supplier relationship balancing production in the overall network.

To codify this approach and shorten access to market, inTime triggered the development of CWA 16504 ‘Simplified multilateral EDI - Secure electronic data interchange in non-hierarchical networks’.

NEN was a partner in the Consortium and held the secretariat of the workshop that developed the CWA. http://data.fir.de/projektseiten/intime/
Smart Pedestrian Network (SPN) Project

Smart Cities are walkable

Partners

Cities

Co-Funding

ERA-NET Cofund
Smart Urban Futures Call

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 736744.
The Problem

- World of global warming and unsustainable growth, new approaches to transportation and mobility must be considered.
- Substitute vehicle use with active means of transport.
- Promoting walking where and when possible is a plausible solution to our problem.
- Lack of awareness of appropriate walking routes as well as the lack of knowledge of the many benefits that active mobility can have both to ourselves, and to our planet.
- In order to promote walking, information and communication technology (ICT), can be of great help.
- Current smartphone navigation applications unfortunately fail to address the particular needs of pedestrians
- Engineering a smartphone application for walking so that we promote active mobility, and social inclusion.
- Municipal authorities could also have a system of evaluating the pedestrian network conditions and be supported in their decision making for more sustainable urban planning.
Why do we need the **Smart Pedestrian Navigation System**?

- **Heart Disease**
- **Obesity**
- **Avoid Routes with Uneven Ground & Obstructions**
- **Avoid Unsafe Areas**
- **Suggest Routes with Street Amenities**
- **Tourist/Out of Town Suggestions**
- **Pedestrians Alert to Municipality**
- **Promote Walking2Health**

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*Images of various scenarios related to pedestrian navigation and health promotion.*
## Key Partners
- Municipalities
- App Stores (Apple/Google)
- Advertisers
- Local establishments/
  Businesses
- Pedestrians
- Volunteers
- SPN Consortium

## Key Activities
- Develop the System (multiple Partners
  • Deploy on Cloud
  • Collect Street Information
  • Report to Municipalities

## Key Resources
- Cloud Servers
- Volunteers
- Salaried Road surveyors
- Municipal Data
- GIS
- Social Media

## Value Propositions
- Safer, walkable streets
- Healthier People
- Happy Tourists
- Increase of House Value
- Increase of Tourist Value
- Increase of Citizen Satisfaction
- Municipal Authorities make better public expenditure decisions

## Customer Relationships
- Social Media
- Email
- Word of Mouth

## Channels
- App Stores (Apple/Google)
- World Wide Web
- Municipalities

## Customer Segments
- Pedestrians
- People with Disabilities
- Tourists & Out of Towners
- Older people
- Women & Children
- Obesity related Ill people
- Municipalities
- Advertisers

## Cost Structure
- Cloud Servers
- Salaried Street Surveyors

## Revenue Streams
- Municipalities
- Advertisers

## Social & Environmental Cost
- Negligible (electricity to run servers)

## Social & Environmental Benefit
- Longer, happier Life
The Problem & The Solution

SPN then accounts for amenities users require/need along their walking routes.
The Problem & The Solution

User receives notifications regarding incidences/problems that emerge along their selected routes.
The Proposed Big Data Urban Environment System for Municipal Organizations
Business Model System Architecture for a Smart Pedestrian Network Application
SPN Benefits in a System Dynamics Model
SPN Project link to Standards

- Criteria with the potential for developing standards
  - Accessibility
  - Connectivity
  - Sociability

- Standards for Vulnerable Road Users (VRU) under development by CEN TC278
References

- [https://www.cencenelec.eu/Pages/default.aspx](https://www.cencenelec.eu/Pages/default.aspx)
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