

Situation Analysis Report

EXECUTIVE SUMMARY

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0. Introduction

Design for Sustainability (onwards DfS) is the systematic integration of environmental, social and economic considerations in the development of product and product-service combinations that meet consumer needs. It covers strategies ranging from incremental to radical innovation, and its objective is to fulfil clients' needs or demands in an economically feasible way, within the limits of the carrying capacity of the supporting ecosystems and in the framework of equity in society. DfS considers all stages of the product development process; the total life cycle of the product; the societal expectations; the stakeholder dialogue; sustainability assessment methodologies and existing organization-orientated sustainability management practices.

In this framework, the overall objective of the SInnDesign project (Sustainable Innovation through Design) is to develop training materials and tools for the implementation of DfS in products belonging to the habitat domain, including the furniture, textiles and construction materials sectors in Austria, Denmark, Portugal and Spain, leading to innovative and competitive solutions.

This project, as a follow up of a previous Leonardo Project, InEDIC - Innovation and Ecodesign in the Ceramic Industry concluded in 2011 (contract N.º 2009-1-PT1-LEO05-03237, www.inedic.net) and ECODESIGN PILOT (<http://www.ecodesign.at/pilot>), will have a special focus on the transfer and application of the these two projects' results on the training materials and tools to be developed.

The aim of the Situation Analysis report is to identify companies' activities, needs and perspectives, along with VET institutions and other relevant institutions' training offer and materials in the field of DfS in the three selected sectors. The final result of this situation analysis will be the identification of gaps between competence needs and existing training materials and improvement aspects with regard to the previous two projects' training concepts, contents and tools; this result will be used for the elaboration of the SInnDesign National and Sectoral Training Strategies and for the design and development of the training materials for Design for Sustainability.

1. Characterization of the habitat domain and main innovation trends

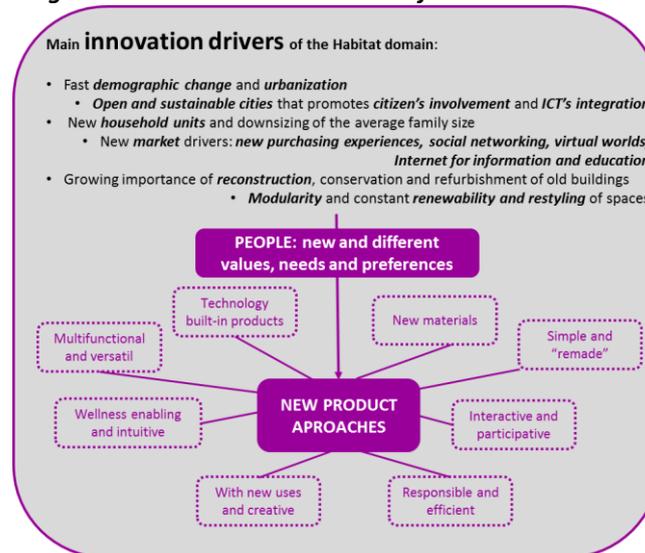
The habitat domain, composed mainly of furniture, decoration, home textiles, lighting, and building materials industries, has undergone an important evolution in recent years as a reflection of the changes occurring in current global context. In fact, according to the Habitat Trends Report 10/11 elaborated by the Habitat Trends Observatory (Spain), this sector shows a high level of sensitivity to the transformations in the socio-cultural and economic international context, producing an important impact on the way companies create, design, manufacture and sell their products. These changes have triggered different reactions among users and in the markets, putting a special focus on the design process, as an essential tool for companies to become more innovative and competitive. Specifically, as for the furniture,

construction materials and textiles sectors in Europe, target sectors in SlnnDesign project, the following overview can be summarized:

- **Overview of the furniture manufacturing sector:** The number of enterprises in the European furniture sector has been reduced with 13% during the financial crisis and employs in 2010 around 1 million workers in 130.000 companies generating an annual turnover of around € 96.000 million. It is a labour-intensive and dynamic industry, dominated by SMEs and micro firm enterprises. In addition, the European furniture sector faces enormous competition from countries having low production costs, in particular in the low- and mid-range price segments, where the EU share in world furniture trade has significantly dropped in the last decade.
- **Overview of the construction materials manufacturing sector:** Until the financial crisis, the manufacturing of construction materials subsector in Europe performed well with regard to turnover, value added, and employment. In 2007, the distribution channels of manufactured construction products consisted of approximately 190.000 wholesale enterprises in the EU27 employing almost 1.5 million persons and generating a € 462.000 million turnover. This subsector was also severely affected by the financial crisis and lack of demand in construction. Moreover, it is also facing considerable competitiveness challenges with regard to the rising costs of energy and raw materials.
- **Overview of textiles manufacturing sector:** The European textile and clothing industry is an increasingly diversified, innovation and creativity driven industrial sector which in 2011 realized a total turnover of € 179.000 million and employed 1.8 million people in more than 190.000 companies; specifically, in the textile sector there are approximately 62.000 companies and the turnover represents € 80.000 million. Concerning the home textiles European sub-sector, the production volume is approximately € 3.647 million. The increasing importance of the markets in emerging economies together with the development of new uses and applications for textile fibres and products in many different areas are key aspects in the sector.

Within this context, it is important to highlight the main transformations experienced by societies and cities in Europe, considered as key factors for innovation in the habitat sector, and therefore, in the three specific sectors of study; this is, as main innovation drivers for the direction of the industry and the design of products.

Figure 1. Main innovation drivers of the habitat domain



Source: *Habitat Trends Report 2010/2011, Habitat Trends Observatory.*

2. Current training offer on DfS and needs of competences from VET institutions

In order to assess the current training offer on DfS and the existing needs of competences from VET institutions, a documentary analysis has been carried out, as well as 10 qualitative interviews. The following conclusions can be drawn up:

While the **DfS concept has started being introduced very timidly in VET training offer**, the university offer presents broader incorporation of sustainability contents, mostly through the master courses. However, **current training offer still covers partially DfS contents and not in an integrated way, persisting the importance of the environmental topics in comparison to the social dimension**. This statement is confirmed after analysing a list of several social aspects related to DfS, derived from the core subjects and topics included in the ISO 26000 (Guidance Standard on Social Responsibility), and confirming the **limited coverage** of them by the existing offer. The analysed DfS topics are the following ones, in relation to:

Human rights:

- Design of goods and services which are inclusive and thus combat discrimination (e.g. age or handicap)
- Design of goods or services to the purchasing ability of poor people

Labour practices:

- Design for health and safety at work

The environment:

- Design for prevention of pollution
- Design for sustainable resources use
- Design for climate change mitigation

- Design for climate change adaptation
- Design for biodiversity

Fair operating practices:

- Use of raw materials and components selected according to environmental and social criteria (sustainable purchasing)
- Respect for property rights through the observation of codes of ethics for design professionals

Consumer issues:

- Fair marketing, factual and unbiased information (regarding the environmental and social profile of the product)
- Design for consumer's health and safety
- Design for sustainable consumption (design strategies related to: product durability; easy repair and maintenance; consumption of resources during use; shift from products to services)
- Safeguard of consumers' rights of privacy in market studies and analysis
- Design of products that satisfy basic needs, targeting communities where such needs are not fulfilled
- Disclosure of sustainability information regarding the product (target: consumers): results of LCA, sLCA and LCC studies; environmental claims; ecolabels and other sustainability-related labels

Community involvement and development:

- Promotion of the local culture by integrating local skills, materials and technologies in the PD process
- Involvement of local communities in the PD&D as a contribution to employment creation and skills
- Preference for local suppliers of materials and components that will be integrated in the product

This list of DfS topics has been contrasted at the same time with interviewed VET institutions and several business associations (see chapter 2 of this Executive Summary), being many of these topics considered as **highly relevant for the Product Design and Development process** (onwards PD&D process), especially in the future. As well as this, the analysis of the identified training offer shows that in most of the cases, aspects of the **three sectors are not covered**, lacking the vision of the habitat sector in its integrity.

In addition to that, most of the times **the objective of the training contents is gaining basic knowledge**, using too generalist materials and contents combined with quite traditional methods and learning techniques, **not providing in deep and specialised knowledge and skills on DfS for the habitat sector**.

Apart from the reduced training offer, it is observed a **lack of competences in VET institutions to provide training in DfS**, specialised in the field of the habitat in its integrity. In general, **VET institutions recognise the need of knowledge and skills on**

the matter, concretely, **on many of the social related issues** mentioned in the previous DfS list topics. Usually that knowledge or competences are acquired by teachers through external specialized consultants or companies. At the same time, in case of the majority of VET institutions, there is not a real nearness about companies' needs on DfS and currently, it is perceived that neither companies nor students demand training on DfS.

These findings are understandable, since the DfS concept as here defined, and its operationalization, is relatively recent. This is precisely the most innovative aspect of SInnDesign: with a highly specialized partnership and the possibility to pilot test the training materials and DfS tools, the project results will be a very important contribution to building capacity in DfS and promoting its adoption by businesses.

In summary, the following gaps have been identified:

Table 1. Needs identified in VET offer and institutions

NEEDS IDENTIFIED ON VET OFFER CONTENTS
Low introduction level of DfS training offer
DfS training is partially covered (E.g. through optional subjects)
Lack of triple dimension vision
Sectoral vision needed
Lack of specific contents (too generalist contents)
Social related issues that are relevant/will be relevant for the Product Design and Development process
NEEDS IDENTIFIED IN VET INSTITUTIONS
Need to develop DfS skills and knowledge among the VET institutions' professional
Need of increasing awareness of students on DfS

3. Current DfS practices and needs of competences from companies and business associations

On the other hand, 13 business associations have been interviewed and 53 companies from the three sectors have been surveyed, with the aim of analysing their current practices and needs of competences in relation to DfS. The following conclusions can be summarized:

The principal characteristics and patterns of the companies that have participated in the survey are as follows; the survey confirms that most of the companies are **responsible for the entire design of their products** (although sectoral differences exist), having full competence in the decision making of their design processes. However, **just a few companies integrate environmental and social considerations systematically in the products design process**, and **many do not know how to do it**, existing an important lack of life cycle perspective of the products (except in the biggest ones).

It is observed that the **performance of environmental related practices is much more spread in comparison to social related practices**. Furthermore, **companies are not**

aware of social related issues that could become relevant in the future for the PD&D process, as stated by the results obtained after contrasting the previous DfS topics list with business associations and companies. As for the main reasons to perform DfS, market reasons in relation to **gaining competitiveness, differentiating the offer and other economic reasons**, and **resource efficiency**, seem to be the most important ones.

According to the analysis carried out, it is confirmed that the **economic benefit of DfS must be clearly demonstrated** in order to get companies involved on DfS performance. In addition, **final clients and value chain requirements** may act as important driver to promote the integration of DfS in companies.

However, it is observed that a **strategic long term vision that involves the whole company is needed for the introduction of DfS** as an integrated process, guaranteeing at the same time the involvement of top management and other staff.

As for the companies' **design teams, their composition depend on the size of the company**; teams composed of just one individual professional are common in small companies, while 2-3 or more people are usual in bigger ones. In this sense, and regarding the internal know-how and training needs of the companies, **design teams' professionals' training background may be both based on Vocational Education and Training and on University studies**. It is important to highlight how **DfS training is not common among those professionals**.

This way, the analysis shows that **training and building capacity on DfS is not very usual** in many companies and in addition to that, there is a **high unknowledge about existing know-how and training needs in DfS** in companies in order to determine the specific needs. At the same time, it is confirmed that **companies seem to be interested in participating on DfS training initiatives; however, most of the companies demand social related knowledge and skills**, since they understand that environmental aspects are covered in a higher proportion, at least in the production stage.

As for the main **needs related to social dimension**, the following ones have been identified both by companies and sectorial business associations. These needs are ranked by high need level to lower need level and are based on the DfS list topics mentioned previously:

- Universal and accessible design.
- Design in relation to consumer issues.
- Design for health and safety work.
- Design in relation to fair operating practices.
- Design in relation to community involvement.
- Design of goods and services in relation to human rights.

With regard to the training materials characteristics, training materials should be **simple and easy to use, specific to sector and type of products**, including practical examples ("learning by doing"), and to be **motivating for both top management and other workers**.

To sum up, the following gaps have been identified:

Table 2. Needs identified in companies

NEEDS IDENTIFIED IN COMPANIES
Lack of integration of the design process in the management system
Lack of integration of triple dimension in the design processes systematically
Lack of life cycle perspective
Lack of awareness on the importance of DfS
Lack of awareness on the importance of social related practices
Lack of awareness of the opportunity and benefit of DfS for the company to improve its results
Lack of a long term vision strategy to involve the whole company for the introduction DfS as an integrated process (involvement of top management)
Lack of knowledge about the existing know-how and training needs of DfS

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