APPLICATION OF IPP TOOLS IN THE FURNITURE DISTRICT OF MARCHE REGION (ITALY):
AN ECODESIGN EXPERIENCE WITHIN AN ASPIRATION HOOD COMPANY

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Helsinki, 2005 June 7th
Context of the LAIPP project

- Integrated Product Policy (IPP)
- Wood furniture sector - Marche region (Italy)
- Application of IPP tools in firms (in particular SMEs)
- Integration of environmental tools and policies within the territory and involvement of all stakeholders (Public Administration, firms, Industrial Associations, Service centres, Research centres, etc..)
Objectives of the Integrated Product Policy (IPP):

- minimisation of environmental impacts of products and services by considering their entire life cycle;
- integration of environmental policies;
- close co-operation with all stakeholders in and around the supply chain;
- development of ‘green markets’ for product and services by introducing a range of instruments and incentives for producers on the supply side to encourage product innovation, and information tools for consumers on the demand side to encourage to buy more environmentally sound (‘green’) alternatives.
Why the Wood furniture sector of Marche region?

- The **wood furniture sector** is very relevant for the Italian and European economy
- In Italy mainly constituted by **small and micro enterprises** (the first 10 enterprises of furniture sector have a production share of 7.6%)
- It requires **specific help** for IPP implementation
- The **district of Marche region**: important for number of enterprises, homogeneity of the production typology (and consequently repetition of the actions) and concentration in a bounded area
LAIPP project: “Dissemination of IPP tools in the furniture industry”

Project financed by European Commission
Life04 ENV/IT/000588

- October 2004 - April 2007
- www.laipp-eu.com
- Different IPP tools, such as LCA, ISO 14001, POEMS, EPD®, ecodesign, will be applied to companies, according to their needs and interests, typology of production, level of environmental awareness, participation to green public procurement procedures, etc...
Partners 1: Public Institutions and entrepreneurial network

Marche region – Dep. of Economical development

Industrial Association of Pesaro Urbino

Municipality Pesaro

Sviluppo Marche S.p.A.
Partners 2: Scientific and Technical Bodies

COSMOB - Consorzio del Mobile S.p.A.
Service centre for furniture firms


Meccano S.p.A.
Centre of competence for the mechanical industry

Università Politecnica delle Marche
Faculty of Engineering - Mechanical Department
Parnters 3: Companies

Elica S.p.A.
Exhaust hood components

Grossi Lamiere di Grossi Donata
Metal articles

Mobilpref S.p.A.
Semifinished wood products

Scavolini S.p.A.
Kitchen furniture

Upper S.p.A.
Office furniture
Wood furniture sector: product chains considered

- **Kitchen (aspiration hood included)**

- **Office desks**
Activities of the LAIPP project (1)

- Survey on a large number of firms of furniture sector to generate a database for benchmarking on environmental performances;
- Life Cycle Assessment (LCA) on two productive sectors: office furniture and kitchen furniture, (aspiration hood included) that will involve six important firms and the respective product chains, with the target to develop sector specific LCA database and to analyse life cycle critical phases;
- Experiment ecodesign processes;
Activities of the LAIPP project (2)

- Development of Product Category Rules (PCRs) for two product groups and assignment of an Environmental Product Declaration (EPD®);

- Proposal of a model (and implementation) in the same firms of a Product Oriented Environmental Management System (POEMS);
Activities of the LAIPP project (3)

- Awareness and training activities on IPP themes in firms and on the territory;
- Create Green Public Procurement procedures;
- Development of Technical Guidelines (web site), to inform and support the companies and the stakeholders on IPP tools;
- Dissemination of the project results within the main furniture districts in Italy and in some European countries.

Two softwares tailored for SMEs will be used directly by the firms: eVerdEE (LCA tool) and TESPI (Ecodesign tool), available on line on www.ecosmes.net
Ecodesign through the TESPI approach

**TESPI** (Tool for Environmentally Sound Product Innovation)

- specialized for **SMEs** (simple and smart approach)
- user friendly: provided with a “help” explaining how to input data and complete the check list
- web based and reachable at [www.ecosmes.net](http://www.ecosmes.net)
- aimed at supporting an environmentally conscious design, taking into account the **product life cycle**, customers’ needs and the competitors’ products.
Ecodesign through the TESPI approach

The tool is structured in **two parts**:

1) **Quality analysis:**

The user identifies: the most **suitable product** to be analysed, the **reference customer**, the reference competitor’s **product**.

The user assesses: **customers’ needs and requirements**, and their relevance, **compares** the product with the competitors’ one.

The user identifies: **parts that make up the product**; for each part he makes an estimate about the contribution to the satisfaction of each customer’s need.
Ecodesign through the TESPI approach

2) Environmental check list:

The user fills in a check list in order to assess the environmental performances of the product. A set of environmental aspects has been selected, to make the application easier and time-saving. The environmental aspects are classified in life cycle phases (pre-manufacturing, manufacturing, distribution, use, end of life).

Each environmental theme is related to one or more eco-design strategies (not visible from the user at this phase of the analysis).
Application of TESPI in the company ELICA S.p.A. on a cooking aspiration hood

Elica was founded in 1970, is located in Fabriano (AN-Italy). In 2000 Elica became a group taking over other enterprises trying to control the product chain. Elica group has about 2300 employees and is certified UNI EN ISO 9001 since 1998 and UNI EN ISO 14000 since 1999.
Application of TESPI on a cooking aspiration hood

1. Create a team in ELICA for the application of TESPI

Quality analysis consisted on the following steps:

2. Elica chose a final customer at a medium-high level interested on environmental aspects and the product that competes with the ‘Artica’ aspiration hood.

3. Elica identified the customer needs and assessed their relevance (look, easy cleaning, aspiration flow, silence, illumination capacity, user friendly, reliability, safety).
4. “ARTICA” aspiration hood was divided into parts, to determine which one presents the most critical aspect and needs the most urgent redesign interventions. The aspiration hood consists of 16 main parts, whose characteristics and functions were described in the ‘description field’ of the TESPI input form.

5. Elica made an estimate about the contribution of each part to the satisfaction of each need.
Application of TESPI on a cooking aspiration hood

Identification and ranking of the customer needs

<table>
<thead>
<tr>
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<th>Code</th>
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<tr>
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<td>5</td>
<td>704</td>
<td>illuminazione</td>
<td>3</td>
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<td>facilità di pulizia</td>
<td>3</td>
<td>706</td>
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<td>707</td>
<td>affidabilità e post-vendita</td>
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<td>708</td>
<td>sicurezza</td>
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**Insert needs**
Input the customer’s needs and define their relevance (1 not much relevant, 5 very relevant)

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**Insert a need or modify a need by clicking its code.**

<table>
<thead>
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<th>Code</th>
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<th>Description and function</th>
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**Tool for Environmentally Sound Product Innovation**

**Modify study/variant > Study/variant selection > Needs**

**analisi Artica 50812485**

**recchioni marco**

**Logout**

**Friday May 20 2005**
Application of TESPI on a cooking aspiration hood

The environmental analysis consisted on the following steps:

6. Elica collected information about the environmental aspects of the product and analysed them with the tool, to identify which are the most critical aspects of the life cycle.

7. The analysis consists on choosing among three statements the one that suits best.
Environmental analysis: example

- The use of harmful materials was identified as a critical aspect of the aspiration hood life cycle.

- for each part of the aspiration hood, ELICA indicated if the content of harmful substances is: a) zero/negligible, b) low, c) high.

Moreover, this aspect of the environmental check list has been treated taking into account the ROHS directive for electrical equipment (EC 2002/95), for this reason a meticulous estimation of which part of the aspiration hood contained the restricted materials was needed.
Application of TESPI on a cooking aspiration hood

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<td>Comment</td>
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</table>
The 1st graph gives an overview of the most important customer’s needs and how ‘Artica’ is good at satisfying each need, in comparison with the reference competitor.
The 2nd graph is the graphic elaboration of the environmental checklist. It suggests which the most suitable ecodesign strategy is.
3rd graph summarises both the quality and the environmental aspects of the product ranking all its parts in order of relevance. The electric engine seems to be the most critical component.
4th graph: shows most critical aspects of each part of the product and allow investigating it in detail.
Conclusion

Thanks to the application of Tespi

- Elica has scored the most important costumers’ needs, and has compared its product with the main competitor’s one.

- Suggestions have been obtained on how to improve the environmental performance of the whole product by following the eco-design strategies which are most suitable for the product.
Conclusion

Thanks to the application of Tespi

- It has been underlined that the reconsideration of the transport methods and logistics would be necessary in order to reduce the environmental impact in the distribution phase.

- Elica has identified which parts of the product need an improvement effort. The redesign of the hood will have to consider: 1) reduce the use of harmful materials 2) reduce the environmental impact of the end of life management 3) increase the silence of the aspiration hood.
Acknowledgment:
This work has been possible thanks to ELICA company
www.elica.com

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