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New online services oriented to the conceptual design of industrial products through the application of Web 2.0

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Abstract

Experimental environment oriented to conceptual design of industrial products through the application of Web 2.0 technology can help to communicate a product on the network. Web 2.0 online applications will be able to develop a search strategy involving the use of specialized languages to respond user's needs. There are many Open Source applications in Computer Aided Design; however there is no on-line environment that allows the user to manage specific and specialized information about design processes conceptualization. The need for formal guidelines and techniques for creating an environment previously validated and justified will raise awareness for existing tools and applications that support the real work of design professionals and encourage the development of specific applications.

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1. Introduction.

Design is for many buyers a determinant component when buying an industrial product. A well design and industrially manufactured object has many advantages over other products and similar services as this last ones lack on communication skills, persuasion and conviction necessary to attract buyers. Therefore, design is a strategic element of competitiveness and technology to provide quick solutions with feedback that comes directly from end user (Skelton & Thamhain, 2005). The development of direct communication channels with end users of a product becomes increasingly necessary to understand the buying trends that may be in a globalized environment (Magal et al, 2011; Limniou & Whitehaed, 2010). Today, the use of communication technologies that have allowed companies to bring the user closer with the first generation of news sites, which have led to direct contact with the the users who can make of their direct purchase choices. (FUNDETEC, 2008). The incorporation of telematic means to the company has been oriented to the concept of innovation both in processes and in the media (FUNDETEC, 2009). In the processes with the addition of programs or applications that help a company's internal management, to facilitate communication with the client and / or suppliers the creation of production-oriented documents, etc ... In the media with the use of telematic means of an internal nature (intranets, internal communications networks, etc. ..) with an external (Internet). The business network that provides design services to industry, is situated on the area of SMEs with less than 5 workers either integrated into the company as a department or as external consultants in studies of

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multidisciplinary design. In all these, the so-called design process is the basis for control and product tracking or design service to be created and need a document control that allows to manage resources in an efficient manner not only related ones but maintain the life cycle of products traceability through the market (Lozano et al, 2006). With the professionalization of design studies in the Spanish business community in the last 10 years, and with improved business awareness of the benefits in the use of design and design management in companies as innovation factor in the creation of competitive products, we find that it is becoming more necessary to look for online resources that enable companies to optimize times and resources by managing applications adapted to their needs (Lozano et al, 2005).

2. The plataform OpenDesignNet, ODN.

The ODN platform is part of the technology research project called "Development and Implementation of products and services based in New Technologies for Collaborative Working Process Design and Product Development in SMEs (OPEN DESIGN SERVICES - ODS)" funded by the Ministry of Industry, Tourism and Commerce under the Plan Avanza I + D, and intends to bridge the gap between professional communication and design company that can use their design services. The overall objectives of the platform are:

- To implement generic methodologies to support the design process.
- To develop methodologies for traceability in the design process.
- To investigate and develop a experimental environment for collaboration and communication between the actors involved in the processes of design and development of new products.
- Dynamizing and validating the environmental services developed with companies.

At an educational level the platform offers the possibility to design student and future professional, to approach to new technologies of communication from the professional perspective to publicize their products on-line that also help them understand the importance in the use of electronic means for internal and external communication of their products facing a future customer.

2.1 User Profiles.

Overall, Experimental Environment "Open Design Services - ODS" will allow all actors involved in design and development of products, relationships and communication support for the process of creating new products, including the creation of a social network management and promotion of designs and designers.

The new professional services related to design (graphic designers, industrial designers, design managers, art directors, trend scouts ..) become key players in defining and creating products and services in-house. Therefore, and in previous research, we identified three types of potential users of the platform that covered the tasks or activities: students, professionals and business.

- **Students:** This group of users are students interested in design and promotion.
- **Professionals:** is the more numerous user group composed of product designers, industrial designers, graphic designers, interior designers, architects, engineers, skilled professionals of SMEs involved in production processes related to product design. Engineers, FP grade technical careers. Qualified professionals of SMEs involved in business and sales processes.
- **Business:** Are users with a corporate legal personality, interested in the processes of production, promotion, design and / or applicants or service providers to design..

The importance of including a profile to design and engineering students was established under two basic criteria related on the one hand with their professional future and the fulfillment of professional skills that will be useful in the immediate future and they are:

- The need to publicize the new tools applied to the design process from an environment that was friendly and feasible.
- Impact assessment on the use of new technologies in a web2.0 website specialized on-line on the design that allows them to promote and publicize their designs or services directly.

3. General structure of the platform OpenDesignet. ODN.

The philosophy of the experimental environment focuses on the use of collaborative work in distributed work environments that allow the design and product development with the collaborative participation of various actors involved in the product life cycle located in geographically dispersed sites. On the other hand, has adopted a development philosophy based predominantly on Open Source and the combination of the most effective technologies of the current Web. The general structure of the ODN platform includes the following scenarios:

- The Collaborative Design Workshop.
- The Design Explorer.
- Business Unit.
- The Agora Experimental Design Collaborative.

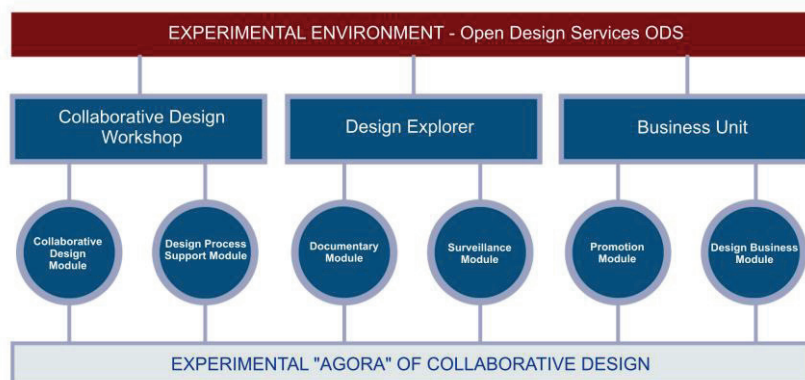


Figure 1. Estructura general de la Plataforma “Open Design Services”.
Source: GlobalMetanoia S.L.2011

3.1 Collaborative Design Workshop.

Its goal includes studying the possibilities of implementing specific web applications design, development and collaboration in design projects, to develop this two modules: The module collaborative work: Consisting of a virtual space for online interaction of different actors working collaboratively in the design process by assisting in the different phases (Concept Design, Detailed design, Technical Office, and put into production). Support module

processes: This is the creation of virtual spaces and experiment with applications that provide greater reliability to designs and processes.

3.2 Design Explorer.

Under this concept are grouped modules Monitoring and Documentation. Monitoring Module: Search experiment with IAD solutions with which to create space monitoring automated design processes. The module Documentary: This involves the research and development of virtual hosting themed documentary and user-defined criteria and automatically fed and other users of the ODS environment.

3.3 Business Unit.

This unit aims to test and experiment with applications that allow support actions that facilitate the generation of new services in e-commerce application to design this structure for two modules: Module promotional design: This involves the validation of technologies to support and offer among other features, the generation of communities of practice, creation of Social Networks Specialist, Business listings, catalog of products and services. The business opportunities module: It consists in experimenting with tools to generate business around the design..

3.4 The Experimental Agora for Collaborative Design.

In this unit, we will experiment with collaborative tools Open Source Web environments that improve and streamline the activities or tasks related to management product design, product conceptualization in the face of marketing as a service to the company or promotion by the designer from a customizable environment. The biggest challenge for the development of Open Experimental Design Environment Services ODN is trying to incorporate applications and libraries in Web environments such technologies: CAD (Computer Aided Design), CAE (computer aided engineering), CAM (Computer Aided Manufacturing) CAPP (Computer Aided Process Planning) and MRP (Manufacturing Resource Planning), etc ...



Figure 2. Open Design Net Platform.
Source: GlobalMetanoia S.L.2010

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