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Ciro Mazarella

*University of Trento, Faculty of Sociology, Italy, ciro.mazarella@studenti.unitn.it*

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# INVOLVING END-USER IN IT-SYSTEM DEVELOPMENT: THE CASE OF ONLINE ANNOUNCEMENT CONFIGURATOR

Mazzarella, Ciro, University of Trento, Faculty of Sociology P.zza Venezia 41, 38100  
Trento, ciro.mazzarella@studenti.unitn.it

*In this exploratory paper I propose to analyse the importance of design games in participatory design techniques in the development of a technology in a public administration. The importance of end-users is one of the participatory designs' cornerstones and design games are, without doubt, one of the most effective instruments in the researchers' hands to realize their involvement.*

*My subject of analysis is a public administration in which, during a paper prototyping session, workers try to create a web interface of online announcement configuration. The configurator is a technology used in a public administration, in particular in an Italian region, in the publication of announcements in which the administration announces its decision to find contractors to entrust services, labor or supplies. The announcement's drafting is made up of many binding stages because each provides a breakdown by category, purposes, resources, regulations in use etc.*

*Through this example I will try to emphasize how the effective end-user involvement is important in the development of a new technology.*

*Keywords: participation, end user's involvement, design games, participatory design*

## **1 GENERAL AIM AND CONTEXT**

The aim of this paper is to describe a project of creation of an informatic system, such as a web interface of online announcement configuration, to underline how the participatory design approach aims to achieve products through the involvement of the end-users. The worker's participation is considered a fundamental point for the Participatory design projects not just because their skills are considered valuable but also because the introduction of new IT-system directly effects their work and the direct use of technology: during the participatory design process, in fact, they share the desire to change the situation according to their vision, their ideas of how the system should be made.

So, when we talk about organizational reality we are facing a complex environment in which the human factor is the most important competitive factor and it's enhancement represents a fundamental point for the development of the same organization.(Mayo. 1969)

Participatory design, in this sense, has to improve end-users' rights and abilities to influence and participate in technological development and to improve the cooperation between various stakeholders in the IT-work.(Kanstrup & Bertelsen. 2006)

"If we want to make technology that really works we need to move out the constructor's-eye-view to a designer's-eye-view taking the system, the users and the context all together"(Winograd.1996)

## **2 METODOLOGIES AND INSTRUMENTS**

In reaction to the ways in which computer-based systems were introduced in the workplace and to the deleterious effects that these systems were having on workers, design professionals realized that the skills and experiences of workers need to be present in the design and organizational implementation of computer system and the work they support(Kensing & Blomberg. 1998).

That oblivion of that, in fact, represents for the management just a way to control the end-users' everyday jobs and not to improve working conditions.

So the participation of workers, often represented in project groups, is seen as necessary to test and for their evaluation of technology: the analysis of technology's needs and possibilities but also the possibility to design and prototyping of new technologies.

To promote active worker cooperation, starting with the analysis of how workers can influence a participative analysis of relations between their work and technology, participatory design's practices improve new methods and new tools to give them the possibilities to influence technology projects.

Most of this project is based on work groups in the workplace to penetrate the "real word" setting with their limited resources, conflict and serious time constraint (Kensing & Blomberg. 1998).

The object of that is to go inside the work's organization to evaluate the effect of the introduction of new IT-instrument inside the organization which primarily involves creation of new knowledge and deep organisational changes inside the same organisation. Doing that, the participatory design meets the workers' demands and needs but often faces resistance of management who may see in it a way for a possible change that would modify the distribution of power within the organization.

To implement an approach to who is considered the weakest part of a company, the workers, PD researchers, have promoted a series of tools and techniques that put into practice the principles to which the participatory design is inspired.

Often, participatory design's project involve the use of design games that allow the construction of scenarios and the possibility for workers to transform a collaborative analysis inside a work situation in a future vision of the instrument that they will use.

Through these instruments the participatory design implements a two-pronged strategy to achieve a single purpose: researchers and designers entering the real world of worker's everyday life and workers, the end-users of the technology, start to take an active part in the implementation of new systems that will be the new work tools for them and that will contribute to the development of their organisation.

The collaboration among workers through design games allows for practical analysis of the workers' skills and experience through the construction of scenarios that can be put into practice and give the possibility to introduce a system that is truly beneficial and suits real benefits to those who will use it.

It has been often reported that systems, considered efficient and valuable from an engineering perspective, are complex and unintelligible for end-users. Systems' design limits, in fact, relate primarily an approach that may be considered strictly functional and consequently not worker oriented; to make the system efficient, usable, it must not underestimate all the suggestions, inputs arising from the users in the form of practical knowledge of their work and expectations/needs of the system that is going to introduce.

Through this approach, the user can no longer be considered only a simple observer but takes a more active role such as a co-designer or an expertise contributor.

The participatory approach provides collaboration between users and designers during the design phase so the indications provided by end-user impact effectively on design choices.

### **3 THE CASE STUDY**

The design games' session, the object of my case study, represents a clear example of how the active participation of workers may be useful to improve or to introduce a new IT-system by increasing the organizational capacity of an organization.

My observation was integrate with transcription and video recordings trying to give the whole picture of what was happening between the end users in the design process.

In this session workers were divided into three groups to try to create a new announcement's configuration that should be more suited to the needs of workers and that goes to improve the system previously used by them.

Despite the absence of any public manager, the session design games were followed by an engineer, that has designed and works on configuration, which has listened to the debate which occurred among workers.

The configurator is a technology used in a public administration, in particular in an Italian region, in the publication of announcements in which the administration announces its decision to find contractors to entrust services, labor or supplies.

The announcement's drafting is made up of many binding stages because each provides a breakdown by category, purposes, resources, regulations in use etc.

The three groups, who worked separately from each other using sheets and post-its to implement a kind of paper prototyping, have to subdivide their work in three phases up to the realization of three paper mock-ups that replicated the solutions designed.

In the first phase, called the creative phase, all groups try to identify the characteristics that their ideal configurator had to have. They were supposed to create a new web configurator's interface trying to forget the existing one. Therefore, they wrote the peculiarities of the "new" configurator in any order listing the functions essential to the functioning of the same.

In the second phase workers have moved to a diagram of the work done in the first phase to build a possible sequence of the necessary characteristics for completing an announcement.

The third phase was the realization of prototypes of paper configurator. At this stage each group exposed to the other one their work explaining the contents and analysing step by step the various characteristics with the possibility for other groups to list, for example, any deficiencies or possible improvements.

The last phase is certainly the most interesting part of this case study. The groups, once completed their mock-up, have openly confronted on three hypothetical Configurators showing a high interest and intense participation were suggested some fundamental steps, the elimination of certain content or a list of some fundamental objectives.

So, during the session design games, users have expressed a very favourable orientation showing a broad involvement underlining their determination to transform the instrument of their work into something that is close to an ideal model of a configurator that their experience and their daily activities could make possible.

## **4 A SUMMARY CONCLUSION OF MY CASE STUDY**

The construction of scenarios through design games' session represents an "important technique for creating, testing and presenting design ideas." Through the design games, groups of workers have shown the need to substantially modify the technological tool that is an integral part of their daily work: methods like this have been developed and used in participatory design IT projects in order to increase user participation.

"Participants in exploratory design games often have different interests and preferences but instead of utilizing this by competing the aim is to take advantage of the various skills and expertise's represented and jointly explore various design possibilities within a game setting"(Brandt. 2006)

So this kind of participation among people who have different expertise and responsibilities gives them the possibility to negotiate their ideas, make their own proposals and set rules for the work that should be done.

Through discussions and the sharing of ideas as through the participatory design it is possible to highlight aspects of a system which, in a different way, were not taken into account.

The passion and involvement that workers have expressed underlines how cognitive aspects and participation of end-users may be taken for example and how to push and to create a new system or substantially modify an existing one.

Through the participatory design, in fact, you can create a system to accommodate the needs of people working on it.

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