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Who's the User in User-centred Design?

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Abstract

Traditionally, a user is someone who directly interacts with an information system. The concept of information systems actability, on the other hand, helps us to identify three meta-roles that actors in a business play in relation to information systems: communicators, performers and interpreters. It is argued that in order to build systems promoting high-quality communication, the concept of user must be extended to embrace all these three meta-roles; i.e., anyone directly or indirectly affected by the actions performed by and through the system. Consequently, if we want to practise user-centred design, actors representing the three meta-roles of users must be involved in the process and their relationships to the system must be properly understood and acknowledged.

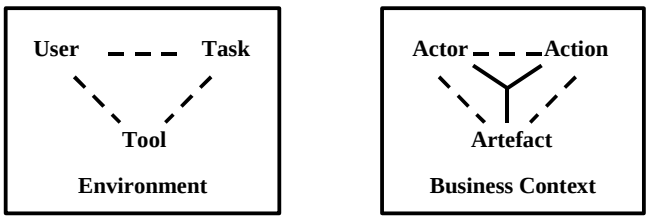
1 Introduction

When working with information system (IS) development and evaluation, analysis of human-computer aspects is essential. However, if high-quality communication is the objective, restricting the analysis of human-computer interaction to 'direct' interaction seems insufficient. We want to practise user-centred design, but who is the user? This question is not new. Preece *et al*. (1994) discuss whether management people, trade union representatives, *et cetera* should be acknowledged as users in addition to the interacting 'end users'. Yet even the term 'end user' is ambiguous.

In this paper we examine the traditional notion of the user. That notion is then matched with the view promoted by actability – an important 'metric' for information systems quality (cf. Ågerfalk & Cronholm, 2001). From an actability point of view, information systems are not passive tools but action-potential and action-enabling artefacts used as vehicles for communication between people. Actability gives us criteria to use when deciding who the users are. In this context, 'action' could be understood as 'communicative action' (Habermas, 1984) or 'speech act' (Searle, 1969). An action results in a message (piece of information) consisting of a propositional content (what is talked about) and an illocutionary force (what is done by communicating: promising, questioning, *et cetera*) (Goldkuhl and Ågerfalk, 2000).

2 Users as Communicators, Performers and Interpreters of Action

Traditionally, a user (or 'end user') is someone directly interacting with a system (or any other kind of product) (Shackel, 1984; ISO 9241-11, 1998). It is generally agreed that a use-situation must be understood within a larger context than just a user and a computer; we must also consider the task that is being performed by using the computer. Shackel (1984) presents a simple and elegant model of a use-situation as consisting of four components: a user, a tool, a task and the environment (see Figure 1a). Within actability, we choose to talk about actors performing actions through artefacts in a specific business context when referring to IS usage. Figure 1b shows this action-enhanced concept of IS use-situation in what we refer to as the A^3 model of IS usage. What the model tries to show is that even though the three binary relations between user-task, user-tool, and task-tool are important to understand, the most important concept is the ternary relation between these three, or rather between one or several actors, actions and artefacts. An actor performs an action directed



(a) The traditional notion of a use-situation.

(b) Use-situation according to actability.

Figure 1: Traditional notion of use-situation (Shackel, 1984) and corresponding actability interpretation.

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towards (possibly) another actor by use of an information technological artefact (an IS). Additionally, all these roles must be understood within a particular business context. 'Business context' means that the actions performed can be understood as instances of generic business actions structured into business processes following generic business patterns (cf. e.g., Winograd and Flores, 1986; Goldkuhl, 1998).

The terminological difference between the models of Figures 1a and 1b is not just a matter of choice, but reflects a shift in perspective from humans as passive users of information to active performers of social actions. Another, and probably more important difference is that we have identified three different meta-roles played by actors when using an information system (we call them 'meta-roles' because they are at a more abstract level than the various business roles, such as salesperson, clerk, *et cetera*, played in relation to the IS).

The first meta-role is that of the performer. The performer is someone performing a communicative action by use of the system. The second meta-role is that of the interpreter. An interpreter is someone who receives and interprets the information arising from the action performed by the performer. This is a simple model of communication through information systems. Nonetheless, we now have two kinds of users (or actors): those who communicate something by using the system and those towards whom the actions are directed. These meta-roles may be played by the same actors, but need not be. The first meta-role corresponds to the traditional view of a user in a 'one-user-using-one-computer' setting. If computer-supported collaboration is emphasized, the second meta-role might correspond to a 'traditional' user as well. However, it needs to be distinguished from the first since each of them implies different requirements from the system. The performer requires the system to aid in formulating and executing valid actions. The interpreter requires the system to be convincing in showing that the communication is valid. Valid communication means that the communicated information is comprehensible, refers to the 'true' state of affairs, is expressed according to accepted social norms, and represents sincere intentions (Goldkuhl and Ågerfalk, 2000; Habermas, 1984).

To complicate things even more, it is quite common in business for actions to be performed on commission from someone else. A salesperson, for example, might communicate an offer to a customer on commission from the sales department. He or she acts as a performer but is not responsible for the action relationship established between the sales department and the customer, in this case a business offer with the various obligations that it entails. It is the sales department (or probably the firm it belongs to) that offers something to the customer, not the salespersons. Hence, there is a third meta-role involved in communication through the IS. We refer to this meta-role as the communicator. The communicator is responsible for a performed action. This argument assumes that organizations can be conceived as actors. Nonetheless, there is always a human actor ultimately responsible for the organization and the actions it performs. Note that our concept of the communicator is similar to the 'indirect user' referred to by Faulkner (2000). With our definition of the communicator, an important relationship is established both between the communicator and the performer (a delegation), and between the communicator and intended interpreters (which Faulkner (2000) seems to refer to simply as 'remote users').

These three meta-roles can (and probably should) be regarded as representing three different types of user. This implies that usage must be understood beyond the traditional view promoted by, e.g., *Usability Engineering* (Nielsen, 1993; Faulkner, 2000). The communicator might never actually see the information system in question. Still, the communicator is highly affected by the way the system is designed. If, for example, a performer acting on the communicator's behalf performs an error or misunderstands the action relationships created when using the system, the communicator is the one to blame.

It is important to understand that the allocation of individuals to these three meta-roles is dynamic in the sense that it changes along with the course of actions in the business. A person who acts as a performer in one situation might very well interpret earlier actions (messages) to communicate the one at hand. Hence, he is a performer with respect to the current action and an interpreter with respect to the previous one. This way, intertwined actions constitute recurring patterns forming business processes.

3 Implications for User-centred Design

'Know the user', a catchphrase for usability and user-centred design (e.g., Faulkner, 2000), seems like an important principle. In the light of what has been discussed above, however, knowing the user is not just 'knowing the performers', as it would typically be with a traditional view of the user. Instead, to know the user is to know the actors playing the three meta-roles of communicator, performer and interpreter. Furthermore, they must be known with an understanding of IS usage as performance of communicative action. That is, the task component of the use-situation is emphasized and the actor whom the task is performed for (or directed towards) is as important as the actor per-

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forming the task. The view promoted by actability allows us to conceive performers as agents in a business. Such agents can also be represented by the system itself. That is, the system can perform actions on behalf of a communicator. This kind of 'automatic usage' must also be understood in the light of the three meta-roles described above. It is not the system's fault if it performs unintended actions; it is the communicator's. Hence the communicator should be acknowledged as a user and become involved in the design process if user-centred design is to be practised. Therefore, 'know the task', another user-centred design catchphrase (e.g., Faulkner, 2000), becomes more complicated and important, since there are usually several people involved within this social context referred to as a 'business'; a context that also includes technological artefacts 'mediating' social responsibility.

Since the allocation of individuals to meta-roles always represents a snapshot of the reality, it is important to understand that the needs and requirements of each user are contingent upon the flow of actions that constitute the business processes in which the user participates. Therefore, user-centred designers must act very cautiously in order to observe the communication patterns on which this allocation is founded. This is probably a key to finding the right people.

4 Conclusion

In order to build systems promoting high-quality communication, the concept of user must be extended to embrace anyone directly affected by the actions performed by and through the system. This, of course, includes an appropriate understanding of social action and of how social action relates to the use of information systems in doing business. More specifically, we have identified three meta-roles of users: the communicator, the performer, and the interpreter. Consequently, if we want to practice user-centred design (perhaps 'actor-centred' would be a more appropriate term), all the actors representing the three meta-roles of users must be involved in the process and their relationships to the system must be properly understood and acknowledged. Of course, there are other stakeholders with an interest in the system who should be incorporated in the development process. The important thing is that without involving representatives of all three meta-roles, user-centred design is not what we are practising.

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