

Towards a Co-Design Approach for Open Innovation

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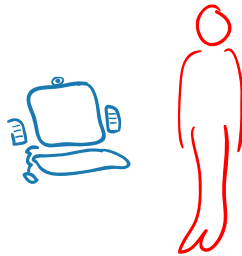
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Introduction

User Centered Design (UCD) and Participatory Design (PD) represented a shift from focusing the technology to focusing people [1]. In the early days the user was more or less solely at the center.



User and IS/IT (based on figure 19.1 the human-machine dyad [2])

Later it has been suggested that the situation regarded should include more stakeholders in the design, for instance direct users, users' managers, co-workers, customers, suppliers, and others whose practices would be affected by the design [C. f. 1]. In this position paper we develop this further and present elements of a Co-Design approach for making diverse stakeholders part of the development of situations with adjacent IS/IT-solutions in design processes. The key points are that the selection stakeholders should be brought into the design process, rather than being built into the design method, and that role of the designer is shifting towards a new position, between facilitator and Artist. In this position paper we will also explore the consequences on innovation processes related to these key points.

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The case of the IO

In many cases IS, services and products affect more than just the users. An interesting example can be found in a report on the Swedish Insurance Office¹, a government agency handling major parts of the Swedish welfare system, giving support to those who are ill, disabled, parents or pensioners. They report that changes in their information systems were received favorably by the users. 83% of handling officers claims that the new system improves their work to some or large extent. The figure for the previous year was 66%.

The report also states, however, that the new IS support has led to *decreased production*. For instance the average processing time for certain matters rose from 19.8 minutes to 24 minutes. [3].

The report does not state what approach that had been applied in the developments, but if the new IS is *evaluated from a user perspective*; it was clearly a success, as the users consider the new IS as a better tool. But from the *management perspective* it may be viewed as disastrous, as the investments in IS has lead to increased costs rather than the opposite, which was the aim according to the report.

Co-Design

There exist several IS design approaches that take a larger stakeholder complex into account: for instance Soft System Methodology (SSM) [4], Theory of Practice [5], Forsgren's ideal oriented design [6]. These present widened stakeholders models, as for instance the CATWOE of SSM, including Actors and Owners. Most of these researchers do however preset more or less static definitions of the stakeholder complex, which creates different inbuilt biases [7].

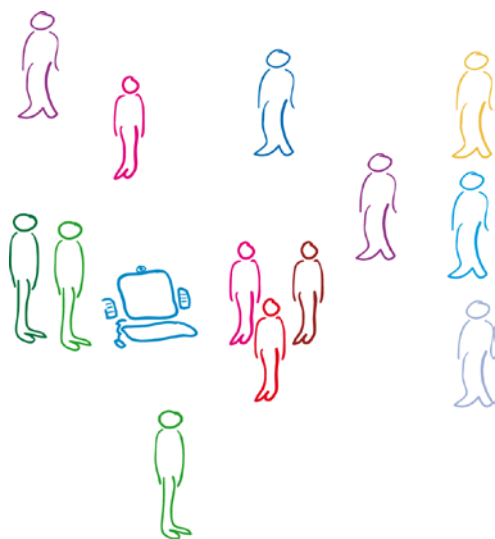
Co-design is to a high degree inspired by Churchman and his late postmodern writings [8]. The basic fundament can be described as a social constructive pragmatism where it is possible to design an infinite

¹ Försäkringskassan (In Swedish)

numbers of views of reality. They may differ in their granularity (level of detail), their level of abstraction, and so on. Every such view opens for actions and possibilities in specific directions. Such collective, or individual, process of challenging existing views, designing new views and choosing the best one for re-implementation is called co-design. It has shaped the way we look at knowledge in general and information systems in particular [9, 10]. People affected by such actions are regarded as stakeholders.

In our view it is time to take the step in Co-Design to make the identification and selection of stakeholders as *a part of the design process*. This has also been the focus of the work of Ian Mitroff and Richard Mason, who have developed approaches to stakeholder identification [10]. For instance; when designing new products and services, there are no “users” to begin with. *The choice of target users then becomes a critical design issue in itself.* A dynamic identification and engagement of stakeholder is especially important when we start to bring in large number of diverse people in so called open innovation [11, 12]. A key feature of these is that there is no simple, preset arrangement of stakeholders.

The inbuilt bias in this Co-Design approach then becomes “open discussion on who may be affected by or can contribute to the design.”



Who should be Co-Designing?

We have experimented with including the identification and selection of stakeholders in the

design process itself. In these projects we have also tried to engage as many of the stakeholders as possible, not just users, in the design process [13]. In one of these project, the e-Me project, the design of the stakeholder complex was an ongoing activity in the entire project [14]. The resulting participating stakeholder complex included both citizens as well as people representing more than 20 different organizations of all sorts: corporations, public sector agencies, universities, trade unions and cities. Starting with students as the “target user group”, universities and some government agencies, as service providers, were early identified. Later private companies that provided useful services to students were brought in. Also major technology firms became players as they could provide impetus and establish credibility to the project. Cities wanting to be more attractive to students were also identified. We argue that such project, which can be regarded as *Open Innovation*, often will depend on the ability to dynamically identify and engage stakeholders.

If increasingly diverse sets of stakeholders are to collaborate on innovation a key issue will be; who will lead such Co-Design?

Leading Co-Design

A number of researchers have pointed out that collaborative design affects the role of the designer.

These propositions [of PD] are radical because they fundamentally challenge conceptions of design as a profession and of what it means to be a designer. [1]

... the new design methods permit collaboration whereas the old ones do not. ... providing the leading designer knows how to switch from being the person responsible for the result into being the one who ensures that “the process is right”. [15 p xxxiii]

The lone ingenious designer, who could do everything by him- or herself is rapidly becoming history. [16 p 18]

The common theme is that the Co-Designer will lead a collaborative effort involving a number of people, probably with varied background. This is that the Co-Designer will be more of a leader and organizer than the traditional designer. On the other hand there is a danger in just asking people for their “requirements” [17]. A classic example in design literature of this was the development of the Ford Edsel model, where customers literally voted on features in polls.

Market research therefore is inherently conservative and not supportive of innovative designs. The famous failure of Ford’s Edsel put

on the market in 1957 and designed after the most thorough market research known at the time, demonstrates the points made above. [16 p 19]

The resulting car was a massive failure in the market as the market surveys seriously limited innovation by letting customers simply repeat characteristics of already existing products. A collection of requested features doesn't necessarily result in a great whole. Being able to derive a communicable, coherent, sense making design is key issue: Without it the whole design process may become a matter of feature voting.

The Co-Designer as a Maestro

In a study of IS developments that have disruptively changed industries, based on cases from 1950 to 1993 McKenney, Copeland and Mason presents critical roles in the innovation process. They discuss a model consisting of three roles: the CEO, the Maestro and the technical team. The person in charge of the Co-Design process is called the Maestro². The cases presentations in the book clearly point to the Maestros ability to manage and turn diverse perspective into a coherent design.

The person in this role must understand technology as it affects both the organization and the industry and must plan and implement new technology infrastructures and effect concomitant shifts in organizational processes [18].

This implies that the Maestro needs to have a view of how the IS design affects *the organization, the industry and the organizational processes*. They list a number of stakeholders that is likely to be affected and involved: Technical partners, users, other staff, the senior management, customers and competitors; all segments of the value chain. One of authors to this paper developed a model for discussing the implications of this with architectural students while teaching co-design for urban planning³.

² The term Maestro was coined by Arthur Squires (Squires, 1986) as "Maestros of Technology".

³ A similar model appears in 19. Nelson, H.G. and E. Stolterman, *The design way : intentional change in an unpredictable world : foundations and fundamentals of design competence*. 2003, Englewood Cliffs, N.J.: Educational Technology Publications. xiv, 327 p. but they are focusing the relationship between a designer and a client commissioning some design work.



The Maestros range of roles in Co-Design

The left hand end borders the archetypical artist, someone that forms ideas from a strictly personal perspective, more or less in solitude. Of course single persons can make significant contributions, but today there are many areas where a single person cannot have sufficient knowledge or impact [C. f. 9]. The other hand is the extreme facilitator who facilitates a discussion without entering a single personal idea or opinion⁴. The Maestro's behavior is somewhere between the end points, s/he will both contribute ideas and help other to contribute. Where a particular Maestro will be positioned is likely to change over time and depend on setting, context and circumstances.

The Maestro as a perspective introducer

In "Design Methods" Jones speculates on this role and describes the job as "keeping the centre empty".

The collaborative use of design methods requires a strong negative discipline "to keep the center empty". The job of the chief changes from that of imposing a unifying idea to that of creating conditions in which the others can feel confident that no unifying idea is going to be accepted until everyone agrees it is the right one. [15 p xlix]

(We are not sure that it is possible to arrive at an idea that "everyone agrees it is the right one", though.) In contrast to the traditional or archetypical designer/inventor who comes up with ideas, the Maestro leading Co-Design may rather open up for and encourage others to present their ideas. Keeping the centre free means for us "clearing the table" after any idea from anyone, so that there is room for another.

The longer ones manage to maintain a clean stage for people to put forward thoughts on, the more perspectives will be brought into the discussion. The Maestro has to decide though when enough ideas or perspectives has been presented. *The Maestros job is to decide which perspectives that are useful to the*

⁴ In many cases the role of facilitators is ideally presented as someone being neutral towards the end result of a process. C. f. (IAF <http://www.iaf-world.org/i4a/pages/Index.cfm?pageid=3346> accessed 080506) (<http://www.globalfn.org/about/facilitator.asp> accessed 080506)

effort and make sure they are brought into the process.

The Maestro as a language introducer

The ability of people to express design ideas and to understand those of others is critical. [20] claim that a starting point for so called third generation design theory [21] was the understanding that design to a large degree is characterized by the notion of *languages*, for instance viewing design as Wittgensteinian “language games” something suggested by Janet Daley. This becomes even more apparent in the Co-Design, where diverse groups may need to collaborate, without a common language of design. “There is a need to extend our design methodologies to explicitly include communications roles and strategies” [22].

In our own work the creation of design languages have been most useful in making diverse groups co-design [C. f. 13, 23, 24-26].

The more diverse the participating stakeholders are - the less common is their languages. It also a question of the time and energy these stakeholder will spend. In our experience the more diverse the group is the more colloquial the language needs to be. *It is the Maestro’s job to find/develop and “design language” that is allowing the stakeholders to explore and contribute to the design.*

The Maestro has to on the one hand facilitate the stakeholders in the process, on the other hand make sure that the design is a coherent whole.

Conclusion

In Co-Design a key issue is the identification and selection of which stakeholder’s that should, directly or indirectly, be part of the design. In open innovation there is no existing or static stakeholder set; therefore *it is necessary to make the identification and engagement of stakeholder an ongoing activity in the design process itself.*

A key role here is the Co-Design Leader or Maestro, balancing between being an artist, or more traditional designer, and being a facilitator.

The dynamic nature of the Open Innovation may require the Maestro to be more of a method designer, for the specific conditions, rather than a method user.

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