

ELICITING POTENTIAL INNOVATION BENEFITS - A CASE STUDY OF EMPLOYMENT FOR PERSONS WITH INTELLECTUAL DISABILITIES

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ABSTRACT

It is difficult to realize the expected benefits of information system implementations. While previous studies have mostly focused on e-government settings and summative assessments of monetary values in private businesses, less is known about other settings. We contribute to the field by exploring values, in a wider sense, in the pre-design phase of an innovation project that involves public as well as private actors. More specifically, the case focuses on the transition from secondary school to work for persons with intellectual disabilities. To address the expected benefits, we apply a framework that describes different types of value. The results of our study show that the framework can serve as a guide to structure and gain a more pluralistic understanding of the expected benefits in an innovation project that includes not only public but also private actors. The study also shows that the expected benefits seem to be multidimensional and interconnected. Thus, it seems important to not only identify the expected benefit but also how they are related among each other and on different levels, for instance individual, organizational and societal levels.

Keywords: value, benefits, information systems, intellectual disabilities

1 INTRODUCTION

Innovation as a field is well-established both in literature and practice (Nambisan et al., 2014), and several initiatives on information systems are carried out to solve today's challenges. The implementation of information systems and the redesign of work processes open for new ways of working and potential benefits for the involved actors (Kohli and Grover, 2008). Still, initiatives fail to meet their goals and previous research shows that it is not enough to perform a summative evaluation of an implementation. It is, on the contrary, important to identify the potential benefits early in the process to be able to realize the expected benefits (Persson & Goldkuhl, 2010; Ward and Elvin, 1999). This appears to be especially important when the process involves actors with different competences and interests (Askedal et al., 2017). One example is public-private initiatives which tend to involve more complex value systems as the actors may have different perspectives regarding the project, its usefulness, and its context (Rutgers, 2008).

Therefore, it is important to understand the context where the expected benefits are to be managed to make a realistic and useful benefit management plan (Ward and Daniel, 2012).

While previous studies have mostly focused on e-government settings (Skiftenes Flak et al., 2015) and ex-post measurements of monetary values in private businesses (Yassaee and Mettler, 2015), we want to contribute by exploring values, in a wider sense, in the pre-design phase of a complex setting that involves public as well as private partners. We do this by focusing on a situation where the implementation of digital services could ease the transition from secondary school to employment for persons with intellectual disabilities (ID). The research project "InnArbeid" intends to design a new service model and a number of digital services, focusing on communication support, job matching, and work activity support. Actors involved in the project include representatives from municipality level, regional level, work training centers, developing companies, a

business federation and an advocacy organization.

With this background, we aim to answer the following research question: *How can expected benefits be understood and articulated in a complex innovation setting?* The paper starts with an overview of benefits management and different types of values. We then present the research methods and the case, before presenting the results and possible contributions.

2 BENEFITS MANAGEMENT AND VALUE

In the following sections we give a brief introduction to benefits management and different types of value in information systems research.

2.1 Benefits management

Benefits management seeks to realize potential benefits of information system implementations in organizations (Ward et al., 1996). Information system implementations normally respond to some needs in the actual organization which need to be articulated and managed in order to be realized (Ward and Elvin, 1999; Skiftenes Flak et al., 2015). One central part of benefits management is assessment of value. Still, the value concept is often described as fuzzy and ambiguous in benefits management. However, Nielsen and Persson (2017) clarify the concept by describing it based on its' purpose, manifestation, and view.

The purpose of a value assessment can either be to conduct a formative or a summative assessment of the value. While previous research has mostly focused on the summative aspects of value, a formative approach is recommended as it provides a more dynamic understanding of the situation and possibilities to continually influence the development. The manifestation of a value assessment can be described as either just focusing on the potential value of the actual artifact or also including the social aspects of value. According to the authors, social aspects may incorporate for instance individual and organizational beliefs and expectations of information systems use. The view of a value assessment can be described as ranging from monetary to pluralistic (Nielsen and Persson, 2017). The monetary view is influenced by studies that

focus on private businesses while especially e-government studies have stressed the need for pluralistic values (Kohli and Grover, 2008). Nielsen and Persson's (2017) understanding of value is summarized in figure 1.

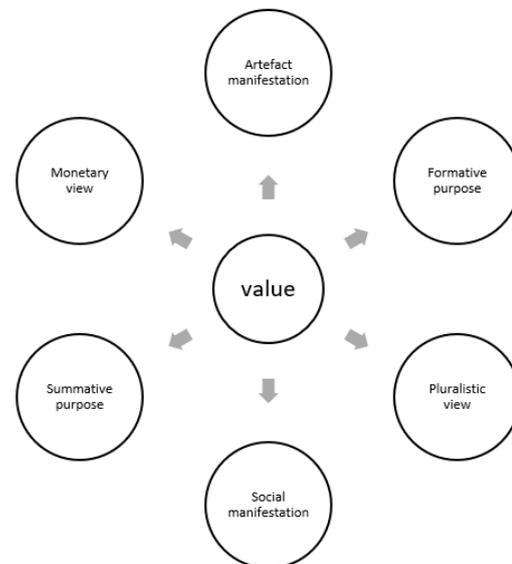


Figure 1. Understanding of value (based on Nielsen and Persson, 2017).

2.2 Different types of value

In a review of information system research that focuses on value, Yassaee and Mettler (2015) present a taxonomy of value. Their taxonomy does not only include a monetary view of value but also non-monetary types such as social, utilitarian and hedonic values. This view of value is in line with the pluralistic view as suggested by Nielsen and Persson (2017) and expands the value concept in a way that seems useful for understanding the expected benefits in a complex innovation setting.

The most traditional type of value is business value which can be described as the organizational performance and productivity impact of information system implementations (Kohli and Grover, 2008; Yassaee and Mettler, 2015). Schryen (2013, p. 141) defines business value as: "... the impact of investments in particular IS assets on the multidimensional performance and capabilities of economic entities at various levels, complemented by the ultimate meaning of performance in the economic environment."

Another type of value is 'relational value' which is described as the benefits that an

information system supports when relations transcend the organizational context. While it is often framed as inter-firm relationships with-in, for instance a supply chain (Kohli and Grover, 2008), it is relevant for our case to also include other types of relationships. For instance, relationships between different public service providers, between private and public service providers, a rather complex web of relationships. An example of this type of value can be a collaboration between different actors which leads to an improved service process.

The authors also identify utilitarian and hedonic values, representing self-fulfilling values and instrumental improvements for the individual user. The last value type, social value, can be described as pluralistic. Social value transcends the closest collaboration partners and extends to collaboration with other actors (Yassaee and Mettler, 2015). This type of value is less explicitly described by the authors but facilitates interaction with other actors.

3 METHODS

The research project InnArbeid follows an Action design research (ADR) approach (Sein et al., 2011). ADR is described as, “*a research method for generating prescriptive design knowledge through building and evaluating ensemble IT artefacts in an organizational setting*” (Sein et al., 2011 p. 40). The ADR method consists of four stages (1) problem formulation, (2) building, intervention and evaluation, (3) reflection and learning and (4) formalization of learning. The ADR method is suitable when one wants to continually involve the user and clarify user needs in different parts and phases of an information system project.

During the time of the study, the project was in the beginning of the first stage - the problem formulation. The focus of the project was therefore to identify the needs of the involved actors.

3.1 Data collection and Data analysis

To answer our research question: “*How can expected benefits be understood and articulated in a complex innovation setting?*” we conducted a single case study as it gave us the opportunity to understand a situation in a specific context (Yin, 2011). A qualitative approach was considered appropriate due to the possibility of gaining a deeper understanding of a real-life situation (Myers, 1997; Silverman, 2015). To collect data, we invited thirteen

participants in the project to a workshop and asked them to reflect on the expected benefits of the future innovations. Table 1 provides an overview of the participants that took part in the activity.

Table 1. Overview of the respondents.

Organization	Number of participants
Employer of person with ID	3
Next-of-kin of person with ID	1
Design and developing company	2
Habilitation services	2
Coordinator of person with ID	1
Secondary school	4

The participants were provided with a paper sheet each and asked to individually reflect on the expected benefits connected to the InnArbeid project in a wider context.

To analyze the data, we entered all the collected data in a single document and analyzed the data according to the five types of value presented in Section 2.2. The different types of values served as codes whereby the statements from the material were categorized. Two statements were excluded from the analysis since they did not describe expected benefits or values. The first author did a first analysis which was later discussed with the second author to reach an agreement on the results of the analysis.

4 CASE DESCRIPTION

The situation under study can be understood as a complex setting where many actors seek to improve the life for persons with ID. The actors collaborate across organizational boundaries and use competences and resources of different types while designing innovative solutions to assist the transition. Given the complex setting, the involved actors may have different perspectives, value systems and understandings of the different benefits and also different opinions regarding which benefit to prioritize.

We will, therefore, briefly introduce the context of the project to exemplify possible challenges. During the transition from secondary school to employment, the person with ID is offered an individual plan that describes his/her life, activities, and learning development. A coordinator is also appointed to coordinate the

activities connected to the individual plan. However, the coordinator has no financial power and cannot allot additional resources to carry out the planned activities. The person with ID receives financial support from two different government funding bodies during the transition from secondary school to employment. The local municipality is responsible for financial support until the person turns 18 years old of age. Afterwards, the person needs to get an income or apply for financial support from the national labour and welfare administration.

5 RESULTS

The different types of values presented in Section 2.2 is used to structure the presentation of the results of the data analysis, using the them as sub-headings: business value, relational value, utilitarian value, hedonic value and social value. Table 2 presents an overview of the results and examples of statements for each type of value.

Table 2. Overview of the results.

Business value
<p>“To get more people into ordinary working life.”</p> <p>“Wish to further develop the solution to new user groups.”</p>
Relational value
<p>“To be able to cooperate in good time before graduation (by the latest the final year in school).”</p> <p>“Coordination between actors, information sharing.”</p> <p>“A matching system where the person adds his/her resources and interests which can be connected to public, local organizations. They can add their work tasks that need to be carried out...”</p>
Utilitarian value
<p>“...simple to find a real resource for aid/support when problems arise in the employment”</p> <p>“A greater overview of useful information...”</p> <p>“My wish is an app with traffic lights. Green means that this far everything has been great today [for the person with ID]. If not, push notifications will come.”</p>
Hedonic value
<p>“Wish to contribute to the possibility for young</p>

<p>people to be able to use their good capacity in a new situation and a new work situation.”</p> <p>“More empowerment.”</p>
Social value
<p>“Inform about the different research results to a larger professional network.”</p> <p>“...to meet new barriers that can be solved together with users and other companies that we are not yet known with.”</p>

In the following paragraphs we elaborate on the results presented in Table 2.

5.1 Business value

Even if the project mainly includes partners from the public context, some statements were categorized as ‘business value’. This included an increased number of work placements, persons with ID that work in ordinary workplaces and students that graduate in expected time. One of the private actors saw the benefit of further developing and improving their digital solution.

5.2 Relational value

Relational values included increased information sharing and coordination between different actors. Examples included a continual cooperation which starts long time before the person with ID graduates from secondary school. One important goal of such cooperation was to get a shared vision and mission of all actors involved. This cooperation and information sharing were suggested to be enabled by a common system for educational plans. Another value that was coded as ‘relational’ and mentioned by several respondents was the opportunity to connect persons with ID and potential employers. More specifically, the expected benefit was to get support to match the competence of persons with ID with the specific requirements and needs of employers.

5.3 Utilitarian value

Utilitarian values included access to useful information, less administration and improved overview of the transition. The respondents wished that the project would give them a better predictability of the transition from high school to employment for persons with ID. Other direct benefits included the possibility to get assistance in finding work placements,

increased time to follow-up and solving problems related work activities, a communication support tool for both school and work and increased initiatives on competence development.

5.4 Hedonic value

Examples of hedonic and social values were scarce in the data. Illustrations of hedonic values included increased empowerment and work inclusion for persons with ID by enabling them to take responsibility and to use their full capacity in working life.

5.5 Social value

Examples of social values included the expected possibility to collaborate with new and interesting actors that the project partners were not yet known about. In addition, one respondent mentioned the wish to integrate the developed artifacts with existing solutions and the possibility to diffuse the research results to their professional network.

6 DISCUSSION

The analysis showed that the expected benefits can be assigned to all types of value but center mainly around relational values and utilitarian values. Acknowledging the importance of including both social and pluralistic measurements in a value assessment (Nielsen and Persson, 2017), we argue that the five different types of value can serve as a guide for understanding and articulating expected values in a pre-design phase. Studies in e-government settings report on pluralistic values such as professionalism, efficiency, service and engagement. These values focus mainly on providing a lean and correct administration and serving the public good (Rose et al., 2015). While for instance lean administration is relevant for some of the actors in our project, the analysis shows that business, relational, utilitarian, social and hedonic values (Yassae and Mettler, 2015) seem more appropriate in an innovation project that includes not only public but also private actors.

However, the results of our analysis show that the expected benefits are *multidimensional* and involve both individual, organizational and societal dimensions. The utilitarian values are described in terms of benefits that can be assigned to the individual while business, relational and social values seem to benefit the

organization. The hedonic values mentioned in the study can to some degree benefit not only the individual but also the society at large. While this reflects a pluralistic view of value (Nielsen and Persson, 2017) it also reflects the complexity of the setting.

Furthermore, the expected benefits are *interconnected* in the sense that benefits that were identified as utilitarian values, can be connected to benefits that were identified as relational values. One example of this interconnectedness is the phenomenon of ‘work placements for persons with ID’. As shown in figure 2, possible synergies can be found between utilitarian, relational, business and hedonic values. The figure shows that the expected benefit ‘overview of job activities’ (a utilitarian value that is on an individual level) has synergies with the more organizational values ‘matching system between employers and persons with ID’ (relational value) and ‘increased number of persons with ID in ordinary work’ (business value). In addition, possible synergies could emerge with the expected benefit ‘inclusion in working life’ (hedonic value) which would benefit the society at large.

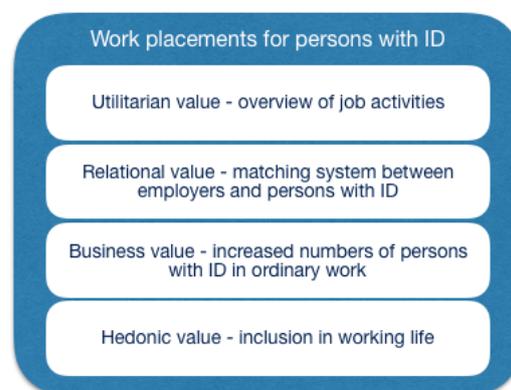


Figure 2. Example of interconnected values.

The findings represent a case with many actors and a complex context. The management of the expected benefits must therefore be addressed in a manner so that it accounts for multidimensionality and the different levels. Possible synergies across dimensions should also be considered during the benefits realization management process.

7 CONCLUSIONS

It is difficult to realize the expected benefits of information system implementations (Persson & Goldkuhl, 2010; Ward and Elvin, 1999). It is therefore suggested that value assessments should be formative and account for pluralistic and social values (Nielsen and Persson, 2017). Trying to understand and articulate the expected benefits in a complex innovation project, we suggest that the framework of different types of value (Yassae and Mettler, 2015) can serve as a guide to structure and gain a more pluralistic understanding of the expected benefits.

However, our main contribution relates to the discussion on *multidimensionality* and *interconnectedness*. The study by Askedal et al., (2017) shows that it is challenging for a single organization to agree on benefits realization and suggests that it is even more challenging in a consortium of organizations where the actors may have different objectives and perspectives. The findings in our case support this suggestion and show that a complex innovation setting presents a wide range of expected benefits that need to be managed during the benefits realization process. Thus, it seems important to not only identify the expected benefit but also how they are related to each other and, further, how they relate across different levels, for instance individual, organizational and societal levels.

The study has some limitations that needs to be addressed. It was conducted at an early stage of the ADR process. Additional data gathering at a later stage through other kinds of data collection techniques should therefore be conducted to provide a more comprehensive understanding of the expected benefits. As the project uses ADR to design and develop innovations, data will be collected throughout the project. Nevertheless, the study gives a formative and pluralistic understanding (Nielsen and Persson, 2017) of benefits realization in a complex innovation setting.

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