

Successful use of avatar/e-services – powerful, but needs a knowledge manager with proper skills

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Abstract- In this paper we are presenting some theoretical background, some practical applications and some future scenarios of the use of the human being as a metaphor for design and implementation of e-services/avatars.

The main conclusion is that e-services/avatars technology is a powerful concept but without a new profession as knowledge manager in the background, there's a big risk for failure. We are also presenting a co-design model as a tool for the knowledge manager

I. INTRODUCTION

Today there is globally an overwhelmingly strong service oriented trend. It seems, almost everything is going to be service oriented. Also products are developed into service packages. And technologies are designed according to service oriented architectures. We can talk about e-services. When the perspective is wider and we try to design the information technology at the same time as we design the close environment for technology we often talk about I-services (integrated) or U-services (ubiquitous). In this case we could also talk about e/m-services (electronic/man) since in most cases both IT and humans are involved in the service producing and consuming process.

We can also see an upcoming market of new service packages developed on the base of existing services supported by software communities and marketplaces for service-parts or "apps".

It has also finally been accepted that these services are developed with input from many perspectives, technical but also social, cultural and art perspectives are brought in to a, what we call, co-design process.

Software service packages can have very different forms. For the same purpose a service package can have an immense many forms. They can have the form of a portal, a webpage, a link, a search engine, a database, a calculator, a simulator and so on.

Every design can be connected to one or more metaphors. Metaphors are something that we know of before. That gives us some direction on what to expect from the design. In a

design situation the metaphor gives a direction on what to design. Metaphors are extremely important when it comes to I-services. They give the first signals of what we can expect from the service.

One such design powerful metaphor is human itself. When we build up a service interface on the human metaphor we normally call it an avatar. There has been some experimenting with human avatars as service interface for customer contacts and e-services. There is also some theory to build on.

In the beginning there were lots of expectations on the avatar as a powerful design for e-services. Many companies as well as cities and public organizations' developed avatars as part of their web pages. Later many of these avatars were gone, but some are still there helping and serving customers and clients.

In this report we are going to investigate a bit deeper into this. Why were the avatars so promising, Why did some fail, how can we develop successful avatars and finally we will dream up a scenario for future use of avatars as important metaphors for I-services

II. AVATARS

Avatar is a wide spread term that has become popularized in on-line virtual worlds like "Second Life". The word comes from Sanskrit language and refers to the embodiment of a supernatural being on earth; an incarnation or God's appearance on earth[1] They have been described as computerized agents that "[...] appear on the screen as embodied characters and exhibit various types of life-like behavior, such as speech, emotions, gestures and eye, head and body movements" [2].

There are some studies that take on a social aspect of interaction between humans and avatars. The findings suggest, among other things, that there is a competitive advantage for online retailers to use social cues that provide consumers with enhanced perceptions of human connection and the formation of emotional bonds [3]. Confidence can be increased and the sales conversion rate can be improved by using human like interaction on retail Web sites. Computer technology that exhibits human like behaviors, such as turn taking in conversations and reciprocal responding, triggers users to a higher degree personify the technology [4]

Other studies have investigated the benefits of using avatars as company representatives on commercial retail Web sites. (Holzwarth et al.,2006) show that avatars positively affect the online shopping experience. They state that “an avatar communicator creates a more positive perception of the entertainment value and informativeness of a Web site”. Much of the research seems to be geared towards commercial Web sites such as retail sales on the Internet. From an information provision point of view, there could also be potential cost savings by having an avatar answering questions, compared to using personnel.

III. E-SERVICES, E/M-SERVICES, AVATARS AND AGENTS - FROM A THEORETICAL PERSPECTIVE

In our view, the service oriented wave sweeping the globe is to a high degree results of the application of a later American pragmatist view of knowledge as it was expressed by for example Pierce, Dewey, James and Singer. This view have later been developed by Churchman.[5] and others, into a dynamic framework of knowledge they call Systemic where the client or the customer is a key concept.

In this view the value generation involving the client is a key part of the concept. The other key part is a multi-view and dynamic perspective. In practice that means involvement of many stakeholders with relevant views on the actual situation and the ideal future situation. From these fundamental ideas a number of quality management approaches and participative design approaches have later developed.

It is in this line of thinking service oriented approaches also have developed with the same focus on customer values and client values. In line with this thinking Mason has developed a model of decision-making where the number of views or assumptions increases in steps.[6]

The model can be described by an example. A simple service is when you as a customer get information about the temperature outside. Implemented as IT we can call such a service an e-service. To that service we can also add the view of how a person should be dressed for a special temperature. The result is a more advanced service giving advice about what clothes to put on. Adding more views on where to buy the ideal clothes for a special temperature could also give more advanced advice about where to buy clothes and so on. This type of service we often call e-assistant. If the e-assistant has a human like interface we talk about an Avatar.

We can also add views on what should be accepted for good clothes by economic views and other views. Then the e-service can act autonomously buying clothes for you. That type of self-acting e-service we often call an Agent.

To get agents effective it is also often needed to design and develop standards and routines for the surrounding environment. Taken together the complete design can be

described as an integrated service (i-service). Often humans are involved as part of the surrounding. In that sense we should talk about e-service and Man-service as an integrated part as an e/m-service. Today most companies and public authorities are struggling with the challenge on how to design their future e/m-services.

This process of designing and continuously embedding new views, Forsgren has described as the process of co-design. According to Forsgren it is also important to all the time keep this process as an ongoing process since clients and customers constantly are looking for better services and the world around us is constantly changing.[7]

From the theoretical model of co-design it is important to involve relevant stakeholders in the process of co-design. It is also necessary to implement a continuously ongoing co-design process where new views are added and old views are changed and subtracted from the service design.

IV. PRACTICAL EXPERIENCES OF THE USE OF AVATARS AS E-SERVICES.

Below are summaries of the results from four e-service cases where the avatar/human being has been used as the main design metaphor. The cases are different in settings and time period but the results are consistent pointing in the same direction].

A. Case *www.Kista.com*

Setting -Test period 2003 [8].

An avatar, an FAQ and a search engine (eyescool) were designed as interfaces from a human agent metaphor. All three were implemented as part of the website kista.com for a test period of two month.

The interfaces had the same knowledgebase in form of predefined answers to supposed questions. An important part of the system was also a thesaurus for local language words and synonyms. An editorial tool for logging and updating thesaurus and knowledge base was also important.

The observations were made during co-design workshops involving citizens as well as researchers and representatives from the Kista municipality. As a complement a number of interviews were performed.

Results: - More experienced users used and appreciated the Avatar/search engine/FAQ-system more than inexperienced users.

- The role of the knowledge manager was crucial and a full time job. In the beginning it was very much gathering and authoring good answers on usual asked questions. Later it was updating on thesaurus and tuning the search engine. Finally in the end of the pilot it was more discussing and implementation

of more unusual answers. The overall finding was that the budget for the knowledge management was too small. Before the system was implemented scenarios and use cases for different type of citizen situations were created and served as steering for the answer generation process.

B. Case www.mark.se

Setting -Test period 2007-2008 [9]

During 2007 and 2008 a research project was conducted in corporation between University College of Borås and the Municipality of Mark in Sweden. The purpose was twofold: to (1) analyse and evaluate the electronic contacts between citizens and the municipality; and (2) to develop a methodology that the municipality could use in their own evaluation and development of both electronic and interpersonal contacts with citizens. A special focus was on their Avatar, called Elin, that was introduced on the municipality's Web site in the autumn of 2006.

The data collection has been performed in the spirit of method triangulation. The empirical material for this paper consists of registered interactions (back-log) between citizens and the virtual servant, codesign workshops with different groups of citizens as well as interviews with representatives from the municipality.

Results: Here we have analysed Elin as an avatar in a municipal context governed by other values and norms than in a commercial setting. One important such value norm is the goal of realising the needs of a 24/7-government. Further research could stress questions whether virtual servants, such as Elin, enhance a cost-efficient way of fulfilling the requirement of a 24/7 government.

We conclude that there are some major improvements to be made before Elin can be regarded as a valuable tool for the citizens. It is however also important to state that a virtual servant's ability to perform its task is highly dependent on that the customer, in this case the municipality, continuously updates the database that contains information used by the servant to answer questions. We have in our study found that this can be improved in the municipality and thus also be a way to improve the virtual servant's capability.

C. Case www.SAS.se

Setting -Testperiod 2009 (Alm forthcoming)

The Avatar Eva was implemented as part of SAS webpage www.SAS.se

The observations were made during co-design workshops involving citizens as well as researchers and representatives from the SAS airline company. As a complement a number of interviews were performed.

Results: Customers saw the avatar Eva and the webpage as one interface. They were impressed that Eva could point to the relevant WebPages. More experienced users used Eva for a

quick access to the right page. The role of the knowledge manager was crucial. In the beginning this was more than full time job. Later the job was more to plan for new possibilities for Eva.

We cannot see that SAS very systematically had documented and worked through stakeholder and user scenarios. This may have been done earlier in collaboration with the company that offered EVA as a service. Two persons expressed a lack of connection between the company business management and the management of the EVA/website

D. Case www.IKEA.se

Setting Test period 1993-1995, 2003-2004,(Alm forthcoming)

In 1993-1995 the first attempts to develop e-services to customers were developed and evaluated by IKEA. The interface "the sofa" was a service in which the customer could make a choice for the sofa model and also to select different textiles and colors on the sofa.

The interface was implemented as a information kiosk for the pilot period. The observations were made during co-design workshops involving citizens as well as researchers and people from IKEA. Complementary interviews with customer were made.

Based on results IKEA was slowly expanding tests and development of customer e-services. 2003-2004 the first tests with the IKEA avatar was made. Information from this period is gathered from an interview with Allan Lidforsen, IKEA project manager for Artificial Solutions since Jan 2008.(Alm, forthcoming)

Results: The results summarizes with a sentence from an interview with Allan Lidforsen.

"After a successful implementation, the operation has a tendency to not follow through and to keep improving this solution, instead you tend to step back and let the technology run on its own.

I believe we need to keep driving and pushing and not stop, to make sure that the change management in the progress is not stalled!

You must review the competence and how we distribute the work. The technology must be there and together with further analysis build an improved solution. We need technology updates and changes in unison with change management."

This is also one of the main conclusions from the pilot work in 1993-1995. During that period IKEA also worked for a method of finding out more systematically user scenarios and related to that a method to find channel synergy between e-service, the IKEA paper catalog and IKEA stores.

E. Summary of practical cases

Of course this is just a limited view of the results, still it is possible to say that in cases where it has been put energy and

skill on building the knowledge base it has been found that the avatar/e-service has supported the business in the private cases and also supported customer satisfaction in the public service cases. On the other side where less energy and skill has been put on knowledge management the avatar/e-service has been of less or no use for the customer.

In addition this it is observed that also in the successful cases there are comments about the lack of connection between the development of the knowledge base and the strategy for business or public service development.

In all cases there seems to be a lack of systematic method of maintenance of the knowledge base supporting the knowledge manager. In the next section we are proposing one such model.

V. AVATARS FOR THE SERVICE CONSUMERS AND INTERACTING AVATARS; E-ME

So far we have been talking about e-services/avatars from a company or a public organization point of view. The avatar is there to offer the producers service to the customer or the client. Based on this idea another idea was born. Maybe it's also important to think about an avatar/e-service that take off in the interest of the consumer or the client. This mind shift is like the difference between an e-service that maximizes the tax paid to the authorities and an e-service that minimizes the taxes from the single citizen. In the IKEA – case it was a big discussion about if the e-service should be designed as a sales support system or a buy support system.

Taking the stance of a buy support system makes a difference. In a buy support system the customer, for example, often wants to compare prices and other aspects of a service or a product from many producers.

Developed with the same method as above we developed and tested an avatar/e-service for the students. It might be thought of as turning the internet around – rather than having students find and keep track of sites, the sites will have to come to the students and interact with them in the way specified by them. This was known as the e-me case and further pilot implementations are now planned both for students and common citizens.

Based on the presented ideas it is of course not a long step to think of a situation when producer e-service/avatar is communicating with a consumer e-service/avatar. We already have these types of solutions implemented in economic markets.

The core of e-me is the preferences connections and actions together forming a profile or e-me mentality. The preferences often expressed by key words are connected to an ideal scenario. An example of such a micro-scenario can be:

I want to live in a house in Thailand at the beach also including a small apartment in Bangkok for business meetings.

What we can foresee is a situation when a producer Avatar/e-services will communicate with consumer avatar/e-services creating a new world of options. A first small example is the producer avatar/e-service –collecting scenarios from customer e-mes of interest for his master producer. This scenario is already planned and pilot tests are under way.

IV. SUMMARY AND FINAL REFLECTION

Historically we connect the strong wave of development for service orientation to the adaptation application of a late American pragmatist view of knowledge. Related we have said that the human being as an avatar and an e-service is a powerful metaphor for design of IT-applications.

Both theoretical reasoning and practical examples shows the importance of a continuously learning and co-design of service functionalities in avatars/e-services if they are going to be successful. We have identified an important and new role or profession for managing this work – the knowledge manager. Finally we have discussed and given examples of the emergence of both producers avatars/e-services and consumers avatars/e-services.

A natural reflection can be – do we really have to make life so complicated? At the same time – the answer is obvious – We are already there. A lot of complicated aspects are happening in all meetings between human beings. What we are doing is to invent technologies that can make these meetings even more productive and enjoyable, that are also quality of life.

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