How to Bring the 'Myth' of Cultural Awareness into Enterprise Software – Challenges and Approaches

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Abstract. An increasing number of companies see a strong business need to get deeper insights into the cultural settings of their consumers as they are coming to the realization that meanings, behavior and activities of people might differ from region to region, and that this can have an impact on the acceptance and the usage of their products. Sometimes, however, the impact culture can have, is still seen as a myth. This paper focuses on how we at SAP Design Global Design UI Concepts tackle the challenge to bring cultural awareness to the teams.

Keywords: Intercultural User Experience · Intercultural design
Cultural awareness · Culture · Design anthropology

1 Introduction

Imagine if in ancient times, a craftsman from Walldorf in Germany was asked by Odysseus and the Greeks to design the Trojan Horse. Most likely this craftsman would not have had any idea about the concept or meaning of a horse in this specific context, about socio-cultural habits, the environmental situation or the equipment needed. Perhaps he would have chosen another vehicle to hide and transport the warriors, as he may not have known that the horse was revered as a symbol for Athena and that because of this, the Trojan people would pull it into their city in front of the temple of Athena. How would he know if the material he was planning to use to create the horse would be available in that region, or if the horse would be the right size to fit in all the Greek warriors and their weapons, or if the horse would have been too big to fit through the city gate? What if the mechanism to open the horse from inside couldn't be operated by the warriors because they were used to other technologies?

We could continue with more illustrations to make it obvious that this thinking doesn't only apply to this myth. When designing, or creating an artefact, a product or a

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This paper represents the view of the anthropological perspective within SAP Design - Global Design UI Concepts for SAP Fiori design language.

service, it makes a real difference to have specific insights into cultural and environmental situations and the context of when they will be used. It can be the difference between success or failure.

This simplified example often helps to make designers, enterprise product owners, software developers, and others, understand why there is a good reason to get deeper insights into cultural and intercultural aspects. They can more easily recognize that there is a value-add when taking these aspects into account at the beginning. An increasing number of companies are investing in this area, as they do not only see the competitive advantage but also the need to understand the cultural context of their users in the various regions worldwide. Neglecting them can cause severe damage.

The Designers in our User Experience concepts team, who provide the SAP Fiori design language for business applications that are used around the world, already aim to have the cultural and intercultural aspects in mind when working on specifications for design concepts and floorplans. These will then be used by application designers and development to build applications that fit best the peoples' actual experience.

The challenge is not only to stress the benefits when intercultural design is implemented correctly versus costs when it is done wrongly or not at all, but seed the importance of cultural and intercultural aspects within the company so that it is not seen as a 'myth' but an essential aspect to deliver successful user experience. We are building a bridge between the technological focus and cultural phenomena and bring awareness and knowledge to the teams so that they can integrate it appropriately in their work, be it design concepts or enterprise software applications.

Before detailing out our approach however, first we must be clear on the underlying assumptions.

2 Underlying Assumptions

This section focuses on the underlying assumptions for our approach, explaining the notion of culture and User Experience design, as well as covering how we view intercultural User Experience, Users and Business Software.

2.1 Culture and User Experience Design

Culture as we understand it follows Geertz' (1973) concept of culture as "webs of significance that man himself has spun" and their meanings (Geertz 1973). The analysis of these webs is generative; it is concerned with the ways people find meaning in the world. Therefore, culture embraces meanings, behaviors and practices that groups of people develop and share over time (Sun 2012). We acknowledge that we also have several aspects of local cultures to consider when trying to get an understanding of the meanings, practices and behavior: these are socio-cultural aspects (e.g. age, organization), individual factors (e.g. education, values) as well as the different ways of living and acting.

Although culture takes a vivid role in the design of products and services, the tendency is often to remain on the surface of the famous iceberg invented by Hoft (1995)

which concentrates on the visible tip, and on issues such as e.g. translation, color, layout, aesthetics, punctuation. The submerged part of the iceberg (per Hoft 90% of it) consists of unspoken and unconscious rules and sets of meaning that are often not considered by product and service designers and developers. The result is a disconnect between meaning and actions (Sun 2012). As Sun (2012) points out concentrating only on the tip of the iceberg can result in Dos and Don'ts and lead to guidelines, advice, standards etc. that often remain static and only represent the dominant culture of a nation-state, which can lead to stereotyping. The dynamics of culture and its ever-changing aspect are neglected. People might follow these guidelines and rules without even realizing that they are no longer valid for example, the postulation that in China the color white is only used in the context of death or grief. Chinese brides in some regions nowadays wear white wedding dresses, sometimes in addition to the traditional red ones as red is still seen as a color describing luck. Through western influence, young people, especially those in urban areas, have come to prefer this more western style.

These types of examples show us that culture is not a static concept, that cultures evolve and change over time and that there is a constant influence on local cultures. The hidden part of the iceberg needs to be considered to understand actions performed by people and the meaning they ascribe to it.

Bell and Dourish (2011) outline three key problems when we try to detect 'cultural differences' which have an impact on the use of technologies, and thus the design for different cultural settings. Firstly, where can the boundaries between cultural regions be drawn? Is it on nation-state level, religion, language, others? What do we do about the traffic of culture across boundaries? Secondly, how can we understand culture in an increasingly interconnected world? And thirdly, we are all pulling from many cultural systems to understand our worlds.

Such problems led Bell and Dourish to a different, generative view on culture: "[…] we encounter the world through cultural lenses, which bring it into focus in particular ways while also rendering it meaningful and accountable to us. These lenses frame what we see, and how we see and understand it." (Bell and Dourish 2011).

We prefer these concepts of active and performative cultural practice over those that use cultural dimensions, like the dimensions Hofstede defined based on survey results collected within IBM in 72 countries in the 1970's (Hofstede 2001). Hofstede's five defined dimensions described by more static values are widely used, not only for inter-cultural communication but also in the web and software design area (Sun 2012). Our concern here is that the dimensions are bound to nation-states and their definition is based on surveys conducted in one company, thus showing one corporate culture. The participants were all chosen from one corporate area; only their attitudes in the corporate context were explored so that the wider socio-cultural perspective was missed.

The concepts of culture laid out above use a wider and much more flexible concept and approach than the value-oriented cultural dimensions; they incorporate meaning and activities into the 'role' of our users.

The task of User Experience design is to create user interfaces that mirror parts of the 'web of significance' and do this as closely as possible, to ensure that people have the best possible experience with the technology.

We therefore argue, that the daily life we encounter through 'cultural lenses' and that we experience should be aligned with the User Experience and that the User Interface should include cultural acceptable actions and meanings. Technology and its usage per se is a cultural production.

2.2   The User

In software design, we work with 'Personas' that reflect the 'user' of a system. To derive a 'Persona' usually one to a few users are observed and interviewed to see how they accomplish a specific task. From that learning a 'typical' user is created.

The 'Persona' comprises of these findings and serves as the 'ideal' of a user who performs a specific business role which would then guide designers and developers building applications. The 'Persona' can be a valuable basis to get a first understanding of the users in their specific working context, and see how they perform certain activities with the software, what hinders their work and what is helpful. It is, however, only a very generic artifact that is used for products used across multiple regions and thus misses the specific cultural settings of the people using our software.

Within intercultural design we are specifically interested in the 'how' and 'why', and not only the 'what' of when people do things, or use technology and applications. Details help to understand the facts, but they can't explain the reason and rationale behind something (Ladner 2012).

We believe it our task to not only 'see' the user in their work context, but include their 'web of significance'.

2.3   Intercultural User Experience

We understand that to implement intercultural User Experience we must create a design language for enterprise software that considers different meanings, behaviors, practices, languages and how they are used in communication situations, as well as specific economic standing. At the same time, we want to ensure Usability and User Experience across intercultural boundaries.

We prefer to use the term 'intercultural' instead of 'cross-cultural', as we believe 'intercultural' reflects a collaborative joint approach of people from different cultural backgrounds, rather than the 'cross-comparing' and potential building of an average.

The term intercultural implies that it is all about shared experiences and interactions of people with and between different cultural backgrounds. It requires immersion and personal engagement from design and development. Exchange between teams from different countries and regions who are designing and developing enterprise software is of utmost importance to us.

We work in close collaboration with people from different countries and regions as we need to understand how people interpret and use products and services based on their cultural backgrounds as technology is always contextualized within those. User Experience design should thereby not only consider peoples' behavior and thinking but take the technical and infrastructural environment as well as the business context into account.

2.4   Enterprise Software

Besides understanding the benefit cultural and intercultural awareness brings, we need to consider, that we earn our money by building business software that is used around the globe.

One constraint therefore is profitability. As in every business there needs to be a balance of what we invest versus what we get out. Building software that can be used in different cultures and domains without too many necessary specific adaptations is therefore preferred over building thousands of individual custom solutions that are not only expensive to implement but also to enhance and maintain.

On the other hand, many of our customers need to work worldwide, which means that people working in different countries and with different backgrounds still need to work collaboratively with our software and within a corporate setting in order to communicate with each other. Individual software solutions that perfectly support one individual, might therefore hinder collaborative work within global organizations.

With that in mind, we still do not strive for a one-size-fits all approach that builds a cross-cultural average, but seek for a way to find an intercultural basis (culturally agnostic foundation), from which we can anticipate and provide options to easily adapt our software to specific cultural needs.

Today, we already try to have a good definition for the 'tip of the iceberg' and consider how to reach what lies beneath the surface. This is provided by a culturally agnostic basis derived from intercultural work, which allows flexibility for cultural specific changes on top.

As such, the SAP Fiori design language supports:

- Responsiveness via the adaptability of the design controls, patterns and floorplans to the size of the screen and different devices
- Touch/keyboard support
- Over 30 different languages
- Different calendar types (e.g. Gregorian, Islamic, Japanese)
- Right-to-Left languages and the ability to change the reading direction of the screen
- Themability to adapt the appearance of the UI like colors and fonts to the needs of the companies and their users
- Two themes for visually impaired people (high contrast white, high contrast black)
- Personalization of tables
- Key users can change the sequence or labels of controls via extensibility

We are in continuous dialog with development teams on these aspects. In addition, this foundation can be enhanced and complemented by new aspects derived out of the anthropological design work.

With this framework, we can limit the number of individual custom solutions our customers might still need. Where they are so specific that we cannot cover them with existing means or with adaption, then the decision for custom solutions is usually taken, especially if the benefit of supporting a specific use case and its cultural aspects outweigh the higher investment.

3   Approach

When starting as an anthropologist in a software company you might have the idea of doing your own fieldwork, either for a specific topic sponsored by one or several stakeholders, or to come up with new ideas to shape (or even create) products based on your research data. You might want to go outside to make the point that it is not only workplaces that are interesting to design and development but you need to see how people behave in their cultural settings. You will want to bring the notion of culture and what you have learned in the field back to your teams.

This is not always the case. You might learn that your task is seen to provide Design and Development teams with a list of cultural or intercultural 'do's and don'ts' that will help them to build their applications.

To show clear value to our teams, and take them beyond their assumption that a Do & Don't list is sufficient, we decided on the approach detailed out below. We deeply invest in informing and engaging with people in the organization.

As Roberts (2010) points out it is a long process and a long conversation for anthropologists in the corporate world to transfer their knowledge or their findings to the many stakeholders who are differentially located from a geographical, hierarchal and functional perspective. It is about establishing an ethnographic or anthropological sensibility and a distinctive point of view within the organization. It is about changing perception, language and challenging assumptions within the organization. It is about enhancing appreciation for what Hasbrouck (2018) calls 'ethnographic thinking' and understanding what this can bring in addition to the solution-focused research work. Ethnographic thinking as described by Hasbrouck "isn't simply a front-end research component positioned to feed the design process, but an ongoing inquiry that helps shape design solutions while simultaneously observing and interpreting the evolution, or pulse, of human interactions – always asking "why?" [sic]" (Hasbrouck 2018).

As suggested by Roberts (2018) 'embedded' anthropologists need to learn "to account for and express their contributions in ways that combine soft and hard outcomes" (Roberts 2010). Soft outcomes might include education, awareness, etc. Hard outcomes might be product ideas or influence on product and market strategy, etc. We concentrate on the soft outcomes first which include education, production and amplification of awareness and sensibility.

3.1   Spreading the Word Within the Company – Information and Education

Information and Storytelling. As stated previously we don't want to provide the teams with lists of do's and don'ts or checklists because we see this as problematic. These lists often derive out of stereotypes, personal experiences, informal observations, surveys; they might even contain information like "Germans are punctual whereas Italians are late" which is already a stereotype. Do's and don'ts tend to stay on the surface, to stereotype, are often built on nation-state level and neglect nuances and dynamics of ever-changing culture (Sun 2012). Such lists are often used in intercultural communication and business; in our understanding, they might not be of help for designers and developers working on products and services.

We want to provide our teams with the information that encompasses our own cultural settings and those more alien to us, and raise sensitivity for the topic. To make this explicit where possible, we tell this information in stories. Stories describe events, explain the meanings that lie behind actions and set them into a larger context. A good story combines causes and effects in a narrative way which makes people more likely to remember the knowledge conveyed versus a list of pure facts.

People should not only get the facts but the interpretations of those facts and what these could mean for us, as responsible designers of the SAP Fiori design language, and for development.

The current basis for the information is either secondary research or examples from other companies that already have anthropological and ethnographic experiences. In addition, we use findings from in-house teams who are already aware of the importance of cultural and intercultural settings. We are building on this knowledge-base as we get more examples shared with us, and that can be used to successively build a veritable treasure trove of such stories.

This information is shared on an internal site for designers and developers who are using the SAP Fiori design language. In addition, we provide a collaboration platform that is open to the whole company to encourage exchange on cultural and intercultural topics. We believe that building-up a community of anthropologically sensitive and interculturally concerned people plays a vital role in strengthening and reinforcing the value of our approach.

Building a Community. Within the company, we connect, engage, and exchange with people globally to work on intercultural topics and learn about meaning and activities in various cultural settings. They come from several areas like design, globalization services, development and consulting.

Our current approach is to learn, educate and produce awareness internally. Currently we have to learn about cultural settings 'secondhand', through people who guide us. Building a network of proxies is therefore a good means to get to the good information. We either find proxies as informants within our local area, especially those who have just arrived from other countries and still have a good sense of the cultural meanings and activities of their original cultural setting, or else from people within other regions. Doing this, we consider their working environment within a global company and thus the corporate influences as well as other socio-cultural and individual aspects (e.g. education, technology and design knowledge) that might not reflect the broader view we strive for.

We know that colleagues from other countries who live longer in our local area might change as they are more exposed to the influences and adaptations different to their original locality and mix up their former and the new cultural meanings and behaviors; they themselves state that it would be better to find a proxy in their homeland and volunteer to connect us with them. Usually from such contacts more and more arise.

In addition, we establish an external network with anthropologists and researchers in academia and business to get a much broader view on cultural settings outside our corporate environment.

So, even without running field research we can use such local and remote resources to get an understanding of local cultural settings as well as meanings and activities of people.

The tool we intend to use for exchanges within the community is an internal collaboration platform where our findings will be exchanged, can be discussed and/or enriched, and questions can be raised.

Hold Presentations and Write Blogs. Diffusing such a topic within a huge company, with lots of areas and regions worldwide was very challenging, so we began with presentations to introduce the general aspects of the topic within our design community. This proved to be a good starting point. As all our application designers are usually assigned to a specific business area, they are already able to multiply what they learn within their teams. By disseminating this high-level knowledge, we were then contacted by teams or internal forums to talk about intercultural aspects or we pro-actively offered to talk about the topic in sessions.

Slide presentations are a very common way that information is shared within a company, often presented to smaller groups, sometimes larger forums. As distribution channel slides are not the best medium we need to think of other tools and ideas to spread the word instead of just using slides, information sharing areas on internal sites for the SAP Fiori design language or the collaboration tool. The idea that Dautcher and Griffin (2010) presented at EPIC 2010 to create videos out of slides to make the stories more appealing, interesting and consumable to a broader audience will also be used within our team.

Furthermore, internal and external blogs will be used as distribution channels, to expand the network and exchange on the topic.

Give Trainings. We were asked by a colleague from Globalization Services to integrate the intercultural aspects into a training we developed on UX basics for non-designers. To meet this need we created a one-day training on the intercultural aspects of User Experience.

This basic and interactive training not only gives insights into intercultural design in general using examples from both our own and other companies, but has a broader approach in that we start with our understanding of what 'culture' is enriched by, with stories, with exercises for stereotyping generally and in communication in research projects. If we get this wrong it can lead to huge misunderstandings and thus result in either issues between teams, company and customer, or poorly designed applications or missing functionalities.

To make it an interactive training the participants get the research results of a project in a South American region, the SAP Fiori design concepts and floorplans the colleagues used as basis and then have to adapt these concepts and floorplans to the cultural meanings and activities that were analyzed based on the research data.

The training started last year and has been held five times in Brazil and Germany. Feedback, ideas and stories shared in the training sessions by participants coming from their own cultural setting continuously find their way into the training material.

We plan to make this training an official part of the companies learning platform. To do so we will also start a 'train-the-trainer' series. This not only helps to scale but also

to get more insights into further intercultural aspects that will enrich the training and the community platform even more.

4   Conclusion

Bringing cultural awareness to Enterprise Software designers, developers, product managers and others can be a challenging endeavor. It can be done in several ways: through e.g. analysis of data gathered through field research tackling specific issues, or research concerning a broader view on meaning and activities of people in specific cultural contexts, or other forms of ethnographic research that might have an impact on products and services of the company; this is probably the preferred way of anthropologists working in the corporate environment to show their value to the organizations.

In addition, it can also be done by engaging with people in the company through long conversations and education to bring the notion and impact of culture, 'ethnographic thinking' and cultural sensibility to the teams working globally. This is the approach we follow as a first step within the SAP Design Global Design UI Concepts organization for our SAP Fiori design language.

By providing and evangelizing information on the impact of culture on products and services, educating on what 'ethnographic thinking' is, by establishing a community internally and an external network, creating exchange platforms, holding trainings, giving presentations and figuring out various ways and output means for circulating findings we bring the cultural awareness to the teams within our company so that it is no longer seen as a myth.

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