Challenges and Opportunities in Designing Interactive Systems in the Arab Region

Aisha Ahmed AlArfaj
Newcastle University
Newcastle, UK
A.A.A.Alarfaj2@newcastle.ac.uk

Abstract
In recent years, the Arab region has witnessed a huge development in the adoption of technology. The use of the internet has been widespread, especially through mobile phones, which give access to websites and a variety of applications anywhere and anytime. Most of these applications have been designed in Western countries. They can be used for different contexts such as social media, education and e-commerce. This can lead to several challenges because of the differences in cultures and languages. Therefore, it is essential to understand the users’ culture and language when designing or enhancing interactive systems and to know how to localise them. In addition, the importance of involving users before designing a system should be considered more in the Arab region. This statement will explore briefly the design challenges in the Arabic context, focusing on the culture and language, the researcher’s experience, and the HCI research and education in the Arab region. It will conclude with some recommendations and suggestions for future research.

Author Keywords
Social media; design; m-commerce; culture; language; Arab; mobile applications.

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI); Miscellaneous.

Introduction
Challenges with culture and language
Usually, interactive systems for the Arab region are designed and developed by Western countries or translated directly. However, they should be localised to some extent. Designers and developers should consider the cultural aspect of the region before designing and developing a system. They should involve the users and study their culture using different cultural models such as Hofstede, Hall or Trompenaars. In addition, developers should have general knowledge about the users’ preferences and cultural factors in the
design, for example icons, colours, symbols and language [4].

As mentioned before, we should consider the cultural dimensions before designing interactive systems. By taking Saudi Arabia as an example in Hofstede’s cultural dimensions, we can see that it scores 95 in power distance. This means that there is a hierarchical order [5]. We can think about some design implications of this dimension, such as having different hierarchical levels where different people complete a task. In addition, Saudi Arabia scores 25 in individualism, which means that it is a collectivist society where people belong to a group [5]. They relate and take care of each other [5]. From this, we should think when designing that people like to share within their group or inner circle of family and friends. A study in 2012 showed these dimensions and suggested rules for how to adapt a website to fit them [10]. For example, live chat and a social responsibility policy should be considered for a collectivism dimension. Another study discussed the influence of Hofstede’s culture dimensions on the information architecture [8].

Some studies show that there are many differences in preferences between the West and Saudi Arabia. For example, in Western countries a high text-to-image ratio is recommended, but Saudi Arabians prefer a high image-to-text ratio [4].

Several studies discuss the direction and positions of the elements because the Arabic language is written from right-to-left but the numbers are left-to-right; the layout should therefore follow the same direction [3,6,9,11].

Furthermore, designers and developers should cover even the small details in their culture customisation, such as unit measurements, the Hijri calendar, the 12-hour clock system, structure, graphics and colours [2,3,6,7].

The religious and traditional aspects are important [7]. For example, if a system uses inappropriate pictures that are against the country’s religion or traditions then people may avoid using it again.

If the system already exists in Western countries, it should not be translated directly. The culture and the users’ needs should be considered. Therefore, it is important to think of having high-quality translation with culture customisation and content localisation [6,9]. Some studies demonstrate that one of the challenges that may face designers and developers is focusing on language-specific features such as key search words [11].

The focus on culture should not be limited to colours, layout and language; it should consider how people will accept the idea of the system and how they will trust it. Therefore, the focus should be on users, and their needs and desires. An in-depth investigation should be carried out before designing a system.

Experience and interest (m-commerce, social media and sharing economy)

I have worked and trained in different places, and had various learning experiences in different environments. While studying for my undergraduate degree, I trained in three places. First, I trained for two months in the Banque Saudi Faransi where I gained knowledge about working in a bank. I was introduced to the tasks that
employees should complete and I was shown their system. After that, I trained in the Security Forces Hospital. I produced some tutorials and explanations to show doctors how to use the new system that had been installed in the hospital. I also worked at King Fahad Medical City for seven months, as part of my graduation project, and then an additional three months as a volunteer to complete projects I had started with them. I worked as a project manager and programmer, giving me additional experience and knowledge.

From my experience, I found that users are almost never involved in any stage of a system design. However, in some cases they may be involved in the testing stage. This gap between the designers/developers and users leads to an unsuitable system. However, if the users are involved and their opinions investigated during or before the designing stage, then the system can be more effective and productive.

In addition, as part of my PhD, I am looking at some Arabic applications and websites that are related to e-commerce, m-commerce, and the sharing economy. I found that some of them have been translated directly into Arabic without considering the culture differences or the users’ needs. There are many great ideas that convert to applications but unfortunately they are not used. This is because the designers and developers did not consider the users’ needs and they did not involve them in the designing stage.

There are some applications that have a successful design but are still not popular. As I mentioned before, if the culture is considered and, for example, if the applications enable users to share links within that app or provide a way of inviting their friends and family to join, possibly gaining a discount or credits, others will come to know the application and its popularity will increase.

In Saudi Arabia, people use social media applications to sell or buy products, mostly through peer-to-peer interactions. They may trust this method because they are mostly in contact with their friends and family, and they can share their experiences of buying a product. In addition, they can share product information by mentioning each other under the product’s image, for example in Instagram. In addition, you can find many comments under product images in Instagram. However, it is rare to find reviews for products on a website. These facts are all related to culture, and if investigated deeply, a conclusion with design implications can be drawn. Moreover, buyers have direct contact with the seller and this can give them more confidence and trust. If buyers have a question about a product or need more information, they can contact the sellers directly and mostly they will have a direct response. However, using a website and sending an e-mail to ask about product details may take a day, which users will not prefer.

In addition, usability in some of these Arabic applications is not considered. Users find it difficult to use the application or difficult to do a task, and for this reason they avoid using the system again.

**HCI research and education**

There is a gap in research in the Arabic context. The existing papers are mostly published in unknown or low-ranked journals. In addition, researchers need to
be more organised and work together. There are some frameworks or models for designing in Arabic language but they are not validated and they need to be studied further. Unfortunately, new researchers even produce new frameworks and do not validate or study the existing one. In addition, it is rare to find research that provides recommendations for systems or algorithms for searches in Arabic.

The HCI subject is taught in most Arabic universities for computer sciences students. However, it is taught in English using books and materials from Western countries. This may lead to not improving Arabic websites or not knowing how to design for the Arab region. Also, students mostly receive lectures for the theoretical part but these do not cover the practical part. Even if they cover the practical part, they mostly use materials from Western countries.

**Recommendations and future research**

The existing literature should be organised and collected in a library. In this case, researchers will not duplicate other people’s work and designers can check if. Moreover, previous studies that focus on designing for different cultures should be reviewed to gain knowledge about these differences and how they may relate to our culture.

As mentioned, the users’ involvement is important before designing a system to determine their needs and preferences. It is also important to involve them during the design phase by showing them a prototype design and testing it. Also, a usability test should be conducted.

Guidelines and standards for designing interactive systems should be developed and generated. This has also been suggested by previous studies [1].

In addition, researchers could cooperate and work together to collect and develop materials that may help to enhance the current systems and to develop well-designed systems. Conducting workshops to talk about HCI research and education in the Arab region is essential, as is publishing the information that was shared in these workshops. Researchers should also consider studying recommendation for systems and algorithms related to searching, and creating or altering the existing ones so that they are useful in Arabic searches.

HCI students should be taught with examples from real life, or using current websites and applications so that they can improve or criticise them. It is important to have HCI materials that suit the Arab region. Students should understand the importance of involving users at different stages. Also, the importance of usability guidelines and testing should be presented to students.

**References**


