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# Privacy and Security Issues in ICTD: Research and Practice

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**Abstract**

This position paper puts forth the agenda of privacy and security associated with the information technologies deployed in the developing world. We recognize that, while these issues are widely discussed in the Western world, they have not got much attention in the context of the developing countries. Following the tensions between the situated nature of the concepts and practices around security and privacy,

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and the material constraints that the technologies hold in themselves, we call for an “across the borders” discussions on this issue. Our objective is to produce a broader understanding of security and privacy at least in two different ways: a) conceptualizing the formation of the ideas and practices around privacy and security in different social, cultural, and political contexts, and b) broaden our understanding of security and privacy when information technologies turn to the means of cross-cultural communication.

**Author Keywords**

Privacy; security; ICTD.

**ACM Classification Keywords**

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

**Introduction**

Privacy has been conceptualized in variegated ways in the past century of scholarship. Warren and Brandeis called it “*the right to be let alone*” [13], while Westin thought about privacy as the ability to determine for ourselves “*when, how and to what extent information about us is communicated to others*” [14]. More recently, Palen & Dourish introduced the notion of privacy as a “*dynamic, dialectic process*” [10]. In a similar vein, Nissenbaum developed the idea of privacy

as “*contextual integrity*” [9], where she postulates that what construes, as private information is contextual, temporal and audience dependent. All these classical works have positioned privacy as a right of human beings, and depicted how it can be differently defined in different contexts. Similarly, security [4] is also situated in a particular place, time, and culture.

Privacy and security, and computing have been entwined with each other since the very inception of computing with very different foci in different time periods. For instance, appropriate and rigorous security was seen as the optimal approach to securing private data and computing systems [3]. Initially, this was formulated as a mathematical and engineering problem [8] and indeed, cryptographic and other security based approaches are still popular. However, more than a decade ago, there was a subtle shift away from pure engineering solutions to preserving privacy in computing systems and more towards a human centered approach [2]. This nascent field of study has been at times, entitled “usable privacy and security” [15] and defined as the intersection of computer science, privacy and security and human-computer interaction. There have been many human-centered approaches in understanding privacy in the various facets of computing. For instance, understanding password construction and use [1], text password alternatives [7], inferences about privacy preferences from social network behavior and use [4], design recommendations for supporting privacy [2], as well as privacy in mobile computing and other similar systems [11]. However, most of these works have taken place in the western world, and are based on the western ideas of privacy. Since the concept of privacy is situated in a particular culture in a particular place and

time, many of these works may not be extendable to developing countries. Kumaraguru and his colleagues have pointed out this gap and have tried to develop the ideas of privacy around the use of digital technologies in Indian subcontinent [6]. However, privacy and security threats contextually situated in different developing countries have not still been studied thoroughly.

### **Examples**

We discuss four potential cases where more discussion on this topic is well warranted.

#### *a) Repairing broken digital objects:*

Privacy and security of data stored in the digital objects have got even less attention. Our field study in Dhaka, Bangladesh, shows that repairers have access to this data, and the general customers are often worried about this. A follow-up design intervention and interviews reveals that the idea of privacy is often unclear among the users, and there are different kinds of social and cultural challenges involved in designing technologies and policies to protect the privacy and security of such data.

#### *b) Online Social Networks:*

The privacy and security issues are often differently interpreted in different developing countries including Bangladesh. In our studies, we have seen collective and intermediate use of Facebook and emails. The way passwords and other credentials are maintained in these cases are equally interesting. The decision of who should share what on social media also follow a culturally constructed idea of privacy and security. Furthermore, we have seen gender roles in using Facebook among the

married couples. Different other interesting uses of Facebook include “single profile used by multiple users”, “multiple profile used by a single user”, “hiding some posts from certain friends and relatives”, etc.

Another important facet of security associates itself with the corporeal risk of the users. In recent times, a number of bloggers have been assassinated in Bangladesh because of their writings. Furthermore, online peer-to-peer marketing sites are often blamed to host fake sellers, who loot the buyers coming to collect their goods. Women are often facing sexual harassment online, which is often limiting their online participation. Additionally different laws and policies are being made to restrict people’s online activities, causing a new kind of fear leading to new strategies for preserving security and privacy.

c) Rickshaw painting:

Rickshaw painting is an artwork commonly found in many places in Indian subcontinent including Bangladesh. Besides the artistic aspects of painting, the rickshaw painters add secret codes in their drawings and paintings that help the rickshaw owner identify their rickshaws if lost or stolen. This is a very common practice in Dhaka, Bangladesh. While adding secret codes on the body of the object is nothing new in many other countries, the artistic aspects of this kind of security measure can open new avenue of discussions. This kind of art-based security measures have their root in ancient history of mystery and puzzles. While most of the current security measures practices in Western Computer science basically rely upon numbers, patterns, geometry, etc., the art based security initiative can add a new paradigm there.

d) Social media refusal / non-use:

Studying aspects of social media non-use or refusal has been a growing topic of research in academia recently. Why do people choose to not use social media or certain aspects of social media? When should it be appropriate to study non-use when the overarching research narrative has been on use?

### **Across Borders**

The abovementioned topics depict a very basic and primary ideas of a cross-cultural tension around security and privacy that is an emerging problem while expanding the range of technologies in developing countries. The examples of privacy issues around repairing are essentially an extension of privacy-related discussions in technology design and use. The growing emphasis in focusing on the whole cycle of technologies including design, use, repair, recycle, etc. is increasingly involving the developing countries in this discussion as the post-use phases are more prevalent in those part of the world.

Similarly, jointly taken, the cases of online social networks as well as social media refusal or nonuse are important points where the meaning of social interactions is in question from different cultural viewpoints. The examples of male dominance in the use culture of social networks may be explained through the cultural theories, but the connections between different cultures over the online networks and the free flow of information still needs attention. How are connections reshaping the age-old beliefs around privacy and security in the developing countries with the burgeoning growth of Facebook, Viber, and WhatsApp in developing countries? Meanwhile, social media refusal and nonuse has issues of power, dominance and asymmetric information flow associated

with them. How are these aspects played out in developing nations with widely different cultural contexts than the norm? We should start exploring these questions in our various research programs.

Next the case of rickshaw painting demonstrate how the idea of security and privacy could be retrieved from the local context. Furthermore, incorporating local art in security measures could become a sustainable way of designing technologies. At the same time, this kind of studies may open up newer opportunities of HCI practices even in the developing countries to make novel connections between art and security.

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