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The Battle for Survival: Ubiquitous Technologies *vs* Obsolescence Technologies

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Abstract

The current article discusses the nature of wicked problems and their involvement and repercussion on digital revolution in the world. the manuscript tries to form and answer to the problem posed by ubiquitous UX technology from obsolescent UX technology and services for a dual market consumption comprising of both mass adoption as well as niche purchase.

1 Introduction

The present manuscript deals with following problems:

1. Understanding the nature of wicked problems,
2. History of UX (User Interface) technology and how they pose a wicked problem for developers and users and the social repercussions associated with them.

Wicked problems are those where mathematical and scientific methods fail due to their unsuitability of taming the problem. To apply scientific methods the number of known parameters must be known and their must a definite relationship between them but the wicked problems do not pass this test. These problems involve too many, ever changing, interdependent parameters; for example, development of health plan for a country needs to deal with poverty, lifestyle, environmental changes, infrastructure, and economic condition of the area and so on.

One of the first originators, for defining, of this set of problems were H. Rittel and M. Webber. In their remarkable paper [1] they formulate the following parameters for designating a problem as wicked problem:

1. There is no definitive formulation of a wicked problem,
2. Wicked problems have no stopping rule,
3. Solutions to wicked problems are not true-or-false, but good-or-bad,
4. There is no immediate and no ultimate test of a solution to a wicked problem,

5. Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly,
6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan,
7. Every wicked problem is essentially unique,
8. Every wicked problem can be considered to be a symptom of another problem,
9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution,
10. The planner has no right to be wrong.

Although in his outstanding contribution the author deals with policy problems but now with the presence of technology these problem are forking in different directions, but generally in a circumvent way are more of social problems.

With the advent of smartphones and tablets the user interface and its communication with the user is playing a central role across the globe. There are interfaces with excellent features while at the same time we have cheaper versions of the interface to communication with many applications (Apps). The problem arises when one has to decide about the cost vs amount of functionality (and superior experience) to be provided to the user. In the poor countries where people are either too rich or too poor arises a psychological stress to have what other have. This social divide in turn gives rise to many deformities to the society. Since the current trend exhibits a new kind of competition amongst people; that is, the possession of smart electronic devices, it becomes important to look into the problems (and solutions) associated with this new ownership. Figure 1 shows the interaction of technology with human being and its repercussions. In the current manuscript we deal with this issue; that is, wicked problems in the context of UX (User Interface).

2 History of UX Technology

It helps to understand why and how UX is increasingly getting hardwired into our ways of absorbing and disseminating information, and hence communicating with each other. What exactly is the role that UX is occupying in our lives [2, 3]? And Why?

If you walk into a restaurant for lunch or dinner, and take a casual look around, it is likely you will often observe a family or social group of friends or colleagues also present for a meal. While waiting to place an order, they are soon whipping out their favorite gadget and absorbed in what that screen has to reveal to them. You shortly realize that very few are communicating with each other, or having a genuine conversation. I recently observed a family of four, waiting for their meal to arrive, with the father, mother and elder teenage son engaged in their mobile phones. The youngest child, possibly 10 years, was without a gadget and looking bored. No conversations, just waiting for a meal!

Is UX replacing conversations? Is it allowing individuals to be more in control of what they choose to let in and filter out? Is it transcending limited conversations that are a function of limited experiences of the family around the table?

In his book 'Flow: The Psychology of Optimal Experience', Mihaly Csikszentmihalyi [4] analyzes the psychology of optimal experience. He refers to the flow of thought as a source of optimal experience. This provokes me to wonder, "Do our

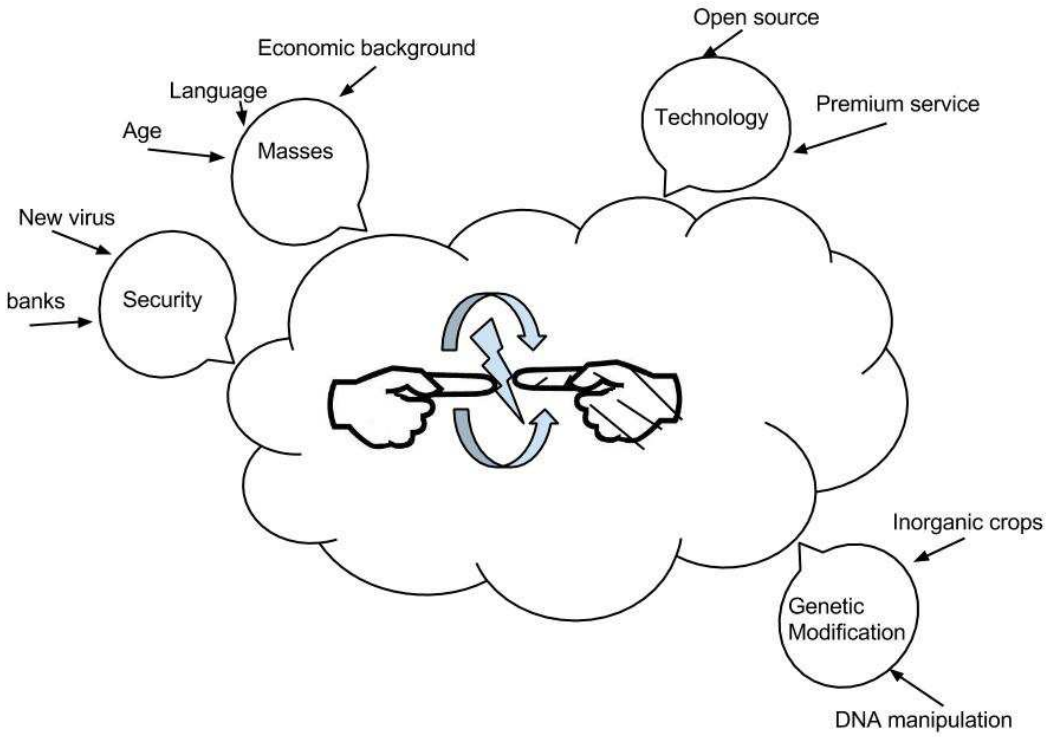

Figure 1: Human Technology Interface and its Repercussions.

new fangled gadgets aid the flow of thought, to create an optimal experience?" For the first time in the history of civilization, almost every man, woman and child in the street can access information on the go the farmer who is trying to sell his vegetables at the highest price, the unemployed youth keeping his mind occupied, the bored housewife, the jittery investor, the video-game crazy child.

That's Ubiquitous UX technology for you. It has led to the creation of 'citizen journalists' out of us, exchange trivia or critical information at the push of a button.

Does UX aid information pull rather than information push? The television is an example of information push, even with over a hundred channels. It's what others think you need to know, not what you really need to know. That's where the internet is likely to replace the obsolete information 'push' model that the television industry has grown to become over the past five decades. However, the danger of this approach lies in the fact that the control of 'information fit for consumption' shifts from a regulatory board or private body with commercial interests, into the hands of the person consuming the information. Are we geared for this responsibility? Is it the same as the holy books now accessible by the masses, rather than being narrowly interpreted by the few religious heads a few decades back?

Look at the average child and compare him or her to what you were at that age. You realize the half-life nature of information. Technology is the radioactive element with a half life behavior - our civilization is absorbing information in half the time that the earlier generation could. What this means for the collective consciousness of new generations is possibly out of scope of this paper, however it certainly has bearing on the role of how this information is being absorbed, and by whom. Will we toss problem statements out to the masses, hoping to crowd-source a solution quickly, as a hackathon does? Will we gamify economic conundrums and invite finger-trigger happy teenagers to solve these? Will it be the selective purview of only those who can afford the technology - and hence impede the pace at which our civilization will continue to evolve? What happens if we broad base the access so that everyone has an equal opportunity to receive information faster, possibly leading to faster solutions?

Will allowing all strata's of society to have access to information create a level playing ground in which solutions to human problems become crowd-sourced and hence accelerate change quicker? Will a farmer in rural India have a piece of the answer to the problems plaguing the country's economists, and how can it reach them in time?

3 The Hypothesis

> "What differentiates ubiquitous UX technology from obsolescent UX technology is concurrently designing products and services for a 'dual market' consumption comprising of both mass adoption as well as niche purchase".

The technological advancements had been in place for centuries. In early years the pace of them reaching masses used to be slow. The absence of media (internet or otherwise) used to be one of factors for not propagating the changes in one part of the world to another, whereas now-days the propagation of news of any advancement in any area is extremely fast. This on one hand is good for masses but at the same time infuses the desire to get hold of these new products as soon as possible, specifically those which are part of everyday life; for example, mobile phones, laptops. These devices are though in reach for a large section but just out of reach for an (almost) equal number of people.

With the advent of affordable devices with over the air update facility for cutting edge software; for example Android,

a fresh path has opened up to fill-up the difference between those who can and who cannot afford to be in touch with the most state-of-the-art advancements in the world. These devices make sure that you have access to what currently people are enjoying across the world. Indeed there is a difference between having monetarily high end and low end devices running the same software but still the platform for everyone is same. It is like being in the same airplane but in different classes; but at least you can enjoy the ride. This fills a psychological gap amidst different classes in a country. Filling up this psychological gap is of imminent importance for a country. Once one type of gap is filled it opens up or gives space to the mind to think in other directions, to be innovative, to do something good, good feelings lead to fulfilling good purposes.

Certainly only software will not be enough for fulfilling these purposes and we need a supporting hardware too. The developing countries with cheaper labor costs are capable of developing and manufacturing theses devices. We have mobile phones, computers, TVs and many other electronic items at the disposal of people with low earnings. This paradigm shift has made the technology affordable, and thus reachable, for a vast number of people. They have created a world with improved equality.

The advent of these devices, especially mobile phones with open source software, has coerced people to develop solution which they came across in their day-to-day life. Every country, in fact village/town, has their own applications (Apps as they are generally called). You can call a taxi, call a meeting, intimate police about some incident, talk to friends and family, click photographs, read a book or local newspaper, and many more things in global as well as local perspective.

In the nutshell it is evident that these affordable, well designed UX technologies not only gave a way for better communication with each other but also are capable of evolving solutions pertaining to common masses.

Affordable technology is not just the problem. Designed to be 'fit for consumption' is equally important.

This evolves our hypothesis to become "Affordable, well designed UX technologies will allow masses to evolve solutions quicker to problems that concern the masses".

4 Analysis

New state-of-the-art technologies require volumes and/or time to recover investments and generate profits. They quickly become obsolete when they are unable to sustain innovation and become irrelevant quickly. One way to stay ahead is to 'crowd source' innovation at low/no cost, while staying relevant constantly.

Various ventures; for example Google, a car by Tata Motors in India, various mobile manufacturers, have shown that it is possible to reap the financial benefits while being extremely innovative and in reach of people.

Undeniably there are problems associated with these kinds of changes in the behavioral characteristics of masses. For example these in-reach of almost all people sometimes create security issues [5, 6]. Countries have to evolve a mechanism to counter attack the possibilities of threats for their countries, individuals have to be aware of the breach in their privacy. Among many other this interference of security related issues between an individual and a country leads to wickedization of the problem.

As the theory suggests that wicked problems generally have no solution so is the case with the problem at hand. Since it is not only difficult but impossible to understand the intentions of a person searching for an in-between approach is extremely difficult. Sometimes eavesdropping is necessary for the bigger cause and sometimes it may be a crime-sometimes may not be

legally but psychologically. There lies not a solution as of now but there is a possibility of eavesdropping digitally in future with the help of artificial intelligence. This kind of overhearing, since done by devices, may be a solution. Devices can catch people engaged in some illegal activities while forgetting those conversations where nothing is at stake for the general good.

The wicked problem can arise with conflicting needs; for example, financial inclusion requires mass adoption of technologies which may be easily accessed through open source, however security issues make lead to vulnerability. This interdependence of the technological issues gives rise to the wickedness of the problem. Solution of these issue will require more efforts for developing new affordable hardware and software. It is clear that the development in this area will eventually benefit the masses and the world overall.

5 Conclusions

The human civilization is developing and reinventing themselves since time immemorial. Every new era brings something new and makes us smarter from the previous generations (may be with some degeneration too). It was never so easy to communicate, entertain, learn, virtually travel, share like the UX has made it today. We are ready to provide solutions to even those even whose land we have never even seen. There lies many wicked problems associated with these technologies but evolution in these areas will bring new solutions. The human-digital interface is evolving into an extension of our biological and intellectual system - an additional capacity and capability, dependent on an operating system/app built by others. Digital detox programs will become a reality as the human condition worsens, having handed over such control to a new drug - 'techno-leeches' - we voluntarily permit to breed on us. A life without human-digital interfaces will be restricted to communes, possibly illegal in the future.

Post-script The views are personal and not of any organization.

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