



# Human Centered Computing: Healthy Gift of Social Engineering for Promoting Digital Humanities: A Short Communication

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## ABSTRACT

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Human Centered Computing is one of the emerging interdisciplinary domains responsible for building computing and Information Infrastructure which is very much close to Human-Computer Interaction and Social Computing and it deals with some special characteristics. Kling and Star first coined the term 'Human Centered Computing' and now it is most popular in Social Engineering Field. It particularly focuses on users specially working with computer rather than other kind of machine or designed artifacts. In this way, most of the electronic products are getting very close to HCI and Human Centered Computing and hence the R/D activity on this domain is rising. This paper talks about Human Centered Computing and its allied fields highlighting its benefits and features and the need of Software Engineering to promote the field.

**Keywords:** Human centered computing, HCC, human computer interaction, social computing, information science, information architecture, information system

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The term 'Human Centered Computing' was first defined by the Kling and Star in a Research paper. However the scope of this field is increasing in many ways. People who are working on this field came from a wide range of subjects which include Information Science, Computer Science, Software Technology, Communication Science, Graphic Design and also from sociology, psychology, cognitive science, anthropology and other domains but having close relationship with computing and information technology perceptually according to the experts, the key feature of Human Centered Computing is that, "Knowledge of Human user and the social context in which system are expected to operate become integrated into the Computer Science agenda, even at the earliest stage of R/D"<sup>[01, 02, 07]</sup>.

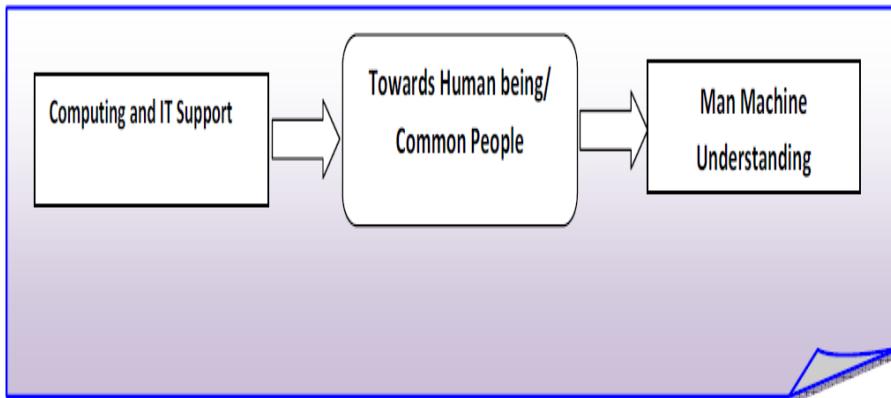
## OBJECTIVE

The main aim and objective of this paper includes, but not limited to as follows:

- ♦ To know basic about the Human Centered Computing or HCC with basic feature and facets;
- ♦ To know the importance, value and need of Human Centered Computing in contemporary scenario;
- ♦ To learn about the Human Computer Interaction and Human Centered Computing in social and core human perspective in brief manner;
- ♦ To find the current trend and possibilities of Human Computer Interaction or HCI;
- ♦ To learn about the related area and field of Human Computer interaction and Usability Engineering.

## HUMAN CENTERED COMPUTING: FUNDAMENTALS

Human Centered Computing is fundamentally responsible for design and development of new user interface with better usability and interactive aspects (Fig. 1). As far as Research and Development activities are concerned, it is focused on understanding of human being and their adoption, adept and computational artifacts.

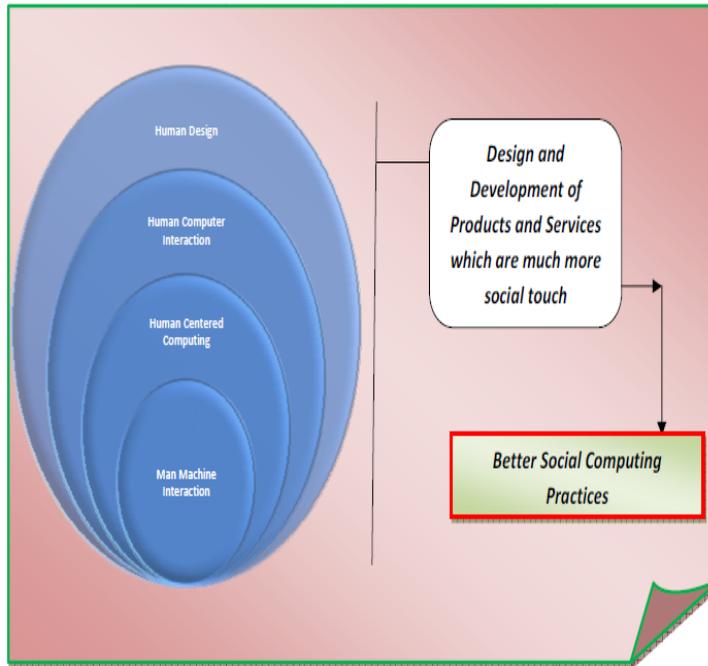


**Fig. 1:** Depicted main fundamentals of Human Computer Interaction/HCC at a glance

However in other sense, it is nothing but the design and development of new strategies as well as computational artifacts. It is dedicated to find out problems of traditional designing approach.

## HUMAN CENTERED COMPUTING: ROLE AND NEED

Both Human Centered Computing and Human Computer Interaction are related to each other, but deals with many advantages and potential. Designing computational tools for spirituality and for fun and for leisure are some examples of nontraditional design problems that are of interest to Human Centered Computing researchers and engineers conventionally. HCI and Human Centered Computing play important role for designing better user interface and computer icon and graphical interface building<sup>5, 8, 9</sup>. The Domain is closest with HCI and Human Design (Fig. 2).



**Fig. 2:** Depicted Human Centered computing its smaller domain to larger with ultimate aim and objective

Human Centered Computing are used for developing descriptive and predictive methods and theories of interaction. It uses traditional display system for more healthy and sophisticated nature. For better Human Centered Computing, it is very much essential for healthy and better interaction devices. Here both the host and devices need to be much more cooperative and interactive. Virtually, it is important that the host which means computer and other machine should be less complex for the better communication with various kinds of devices such as keyboard, mouse, joystick and other<sup>[13,15,17]</sup>.

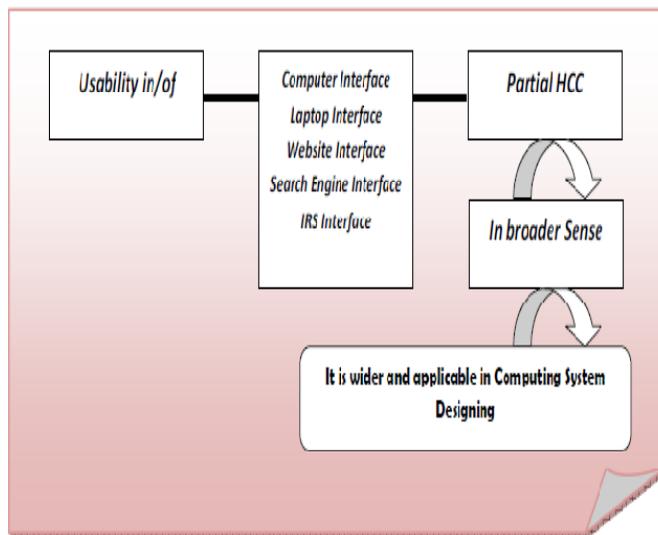
Conventionally Human Centered Computing is treated as a display system but it is more than that as it includes designing and development of any electronic product and gadgets which are much more interactive with people; or it is promote man machine interaction. Usability Engineering is the most important urgent tool for building the most beautiful and interactive Information System building. Monitor and display system its size, resolution, clarity also fall under Human Centered Computing. Interface, its instructiveness and smartness, good-looking aspects fall under both HCI and Human Centered Computing. Monitor, Mobile, Public Information Kiosk, Self Running Information Kiosk, Mobile Interface, Tablet Interface, Laptop Interface, ATM Interface can be possibly built up in a sophisticated way with the help of Human Computer Interaction.

## **HUMAN CENTERED COMPUTING AND PROMOTION BY SOCIAL SOFTWARE ENGINEERING**

Social Software Engineering is a branch of Software Engineering that is concerned with the social aspects of Software development. One of the important features of Human Centered Computing is designing

and development of computers, electronic systems, machine and application packages which are much more human related. And hence building Human Centered Computing and Human Computer Interaction and Human Centric computing is responsible in many ways for the development of product and tools which are much closer with the common people, professional, businessman, and other communities. With Social Software Engineering, software is basically produced and consumed by the community and in many cases by rather than individuals. Exploiting the collaborating and collective capacity of human being is another important tool for the Human Computing Application<sup>[13,16]</sup>.

In many countries, Government and other organization such as NGO's are working for the community label technology development and implementation and such are also treated as Nonprofit Technology; which comprises information and communication technologies that support the goal of non profit, non-Government, third sector, grassroots and other mission based organization. Hence community and human centric computing, technology, system need proper methodology and identification and more clearly software development support; then only it is possible to build the particular system or application or machine<sup>[12,17]</sup>. Internet and networking technology for common people such as for food and health promotion, ration and gases and telephone purposes, communication platform with Web 2.0, carrier and job related purposes and close with human is associated with human computer interaction or more specifically Human Centered Computing<sup>[18,19]</sup>.



**Fig. 3:** Depicted Human Centered computing and its basics to the core aim and objective

## SUGGESTION

- ♦ For Human Centered Computing and Human Centered Interaction, it is essential that we follow proper system, method and sub field, otherwise the whole effort may be value less.
- ♦ Open Source System and Technology may be used for developing Human Centered Computing, particularly Social Networking, wiki's, and web blogs.

- ♦ Software is designed consciously to support human activities and to address social problems and software should enable social inclusion enforcing links and trust in communities.

## FINDINGS

- ♦ Human Centered Computing term was first coined by Kling and Star in their paper, Human Centered Systems in the perspective of organizational and social informatics;
- ♦ Today many organizations and institutions are moving towards the use of tools and technologies which are Human Centered Computing and HCI based.

Proper HCI and Human Centered Computing need healthy and sophisticated approach towards methodology, tools, implementation and technological back up such as open source system;

Non Profit Technology is most important and valuable for promotion of Human Centered Computing for common people and public<sup>[20, 22]</sup>.

## CONCLUSION

Human Centered Computing is mainly powered by HCI and it focuses on user's working specially with computer rather than other kind of machine or designed artifacts. Initially Human Centered Computing was treated as a system and procedure for the planning, designing and development of human computer device, mainly interface of the computer, web page, ATM interface and other devices (depicted in Fig. 3); but today it is treated as the most important facet for the development of electronic products and system which are much more interactive with human being or user; and the products which are more close to common people and also powered by Human Centered Computing or HCI. Hence both the traditional nature of Human Centered Computing and HCI are changing and creating more interdisciplinary focus worldwide.

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