

# USABLE AND CLEAR WORLD EMPOWERED BY GRAPHICAL USER INTERFACE AND HUMAN COMPUTER INTERACTION

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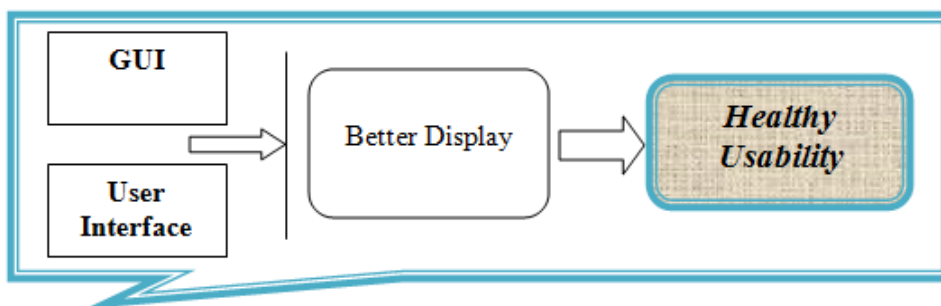
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## ABSTRACT

*Usability is one of the important terms in today's electronic world. Usability and Usability Engineering play an important role for better and clear usable interface design and development. Graphical User Interface and Human Computer Interaction are responsible for Usability Engineering. There are several areas where it is possible to use Usability Engineering principles. These places are monitor, television interface, ATM interface, mobile interface and so on. Today's mobile and other electronic gadget companies are putting extra efforts on better clear, simple and interactive interface design and development. The main aim and objective of such type of usability is easy handling of interface and monitor; where as layman is also able in handling electronic gadget, the GUI or Graphical User Interface allows image and diagram approach to use and handle interface and computers. This paper is talks about usability and its need, Usability Engineering and its principles, GUI and HCI and so on.*

**Keywords:** Usability Engineering, Graphical User Interface, Human Computer Interaction, Interface, Web page design and development, Information Science, Information Professionals, IT Trends

## INTRODUCTION



**Fig:1.** Depicted the empowerment of Healthy Usability

Usability is valuable term in today's age; which ask an interacting and sophisticated interface for several electronic equipments. Usability Engineering today is considered as an academic field and also a professional domain. This field is closely related with Human Computer Interaction, Information Architecture, Web Technology, and so on [10,15]. However, for better Usability Engineering, better psychology and cognitive science applications are essential. Usability Engineering is today treated as one of the emerging name in the field of Computer Engineering, Information Technology, Electronics and Communication Engineering and mainly in Information Sciences. Usability Engineering is to some extent related to Computer Interface Engineering. Earlier, Usability Engineering was mainly responsible for website interface designing and building; but today the periphery is increased and in several other fields it is widely applicable mobile interface, I-Pod interface, ATM interface building and so on. The increasing domain of Usability Engineering is mainly for clear, concise and healthy GUI design, which supports user very quick information collection and dissemination. Usability is an important name for personalised computer and electronic gadgets. Online interface and offline interface that means in internet, intranet and extranet all these category may avail the benefits of GUI and HCI for better interface creation and uses.



**Fig: 2.** Showing some core benefits of Usability Engineering and UED

## OBJECTIVES

The main aim and objective of this study is includes:-

- To learn about usability and clarity in user interfaces such as monitor, TV, mobile and so on;
- To find out the characteristics and nature of Usability Engineering and Usability Experience Design;
- To find out latest about Human Computer Interface and Graphical User Interface;
- To find out strategies and method needed in Usability Engineering and User Interface Design;
- To learn about challenges and opportunities of Human Computer Interface and Graphical User Interface based usability.

Usability Engineering is actually kind of engineering tools, techniques, technologies, principles and methods responsible for healthy and sophisticated interface design. The interface may be on various topics and fields and equipments. It is called user interface as

computer and similar systems deals with two dimensions; one is host and another is user. The usability provides priorities on users as common people uses the user systems. The interface design may be on monitor (this is most conventional place to use similar tools and techniques); however some more devices are now rapidly using Usability Engineering and similar tools and technologies, these devices are mobile phone, ATM interface, I-POD interface, Laptop Interface, Tablet Interface even Television Interface. Though, in internet world Usability Engineering, HCI, GUI have most importance in website design and development [11,12,05].

## Usability Engineering: Basics

Now a Days Usability Engineering is treated as one of the most important tool for World Wide Web. It was fundamentally treated as webpage design and development. However, as already mention it has wider application in several fields and devices. Today's IT Industry, information professionals putting wider importance on user friendly website and even web engineers and computer engineers are giving importance in principles and standards of usability based HCI depended tools and technologies. Information Architecture plays an important role for designing healthy and sophisticated information interface for several fields and profession and common masses. The common mass's information centre and similar foundation may get such type of Engineering principles for wider application of this type of Information foundation.

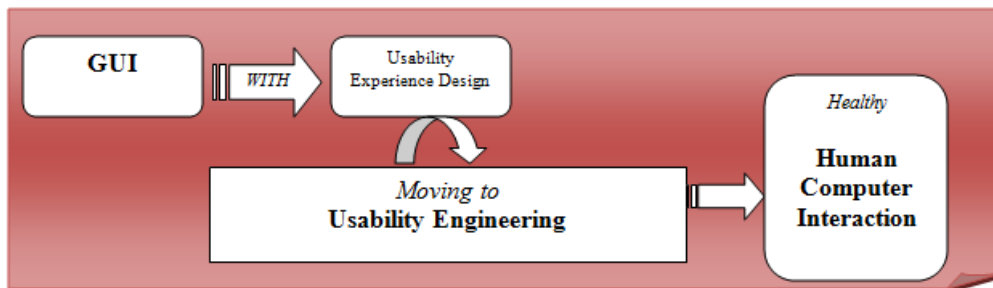


Fig: 3. Way to bring Usability Engineering practice

## Usability Engineering and Usable world: the clear Information Interface

Usability Engineering, HCI and allied principles and tools are responsible for so many activities for development of such usable and clear world:-

- It is useful in user friendly WebPages, websites or web portals;
- It is essential for improving Graphical User Interface of the computers and other display based electronic gadgets;
- Apart from GUI, Voice User Interface is also an important domain of Usability Engineering;
- The creation of information retrieval systems and some allied techniques such search engines, web page needs the affiliation of Usability Engineering;
- The web based user interface is also today purely depends of Usability Engineering principles;

- It is important integration of computer science, web technology and cognitive sciences;
- Any one may use web page directly in most the cases, as it is based on Usability Engineering principles thus it make simple, assistance less and dynamic web page or offline interface or display systems;
- In context to web technology, Usability Engineering may e explained as ‘webs are for use’;
- To dissemination information among the information systems and similar foundations;
- Through remote mobile user can get information through usability and screen.

## **Human Computer Interaction and Usability**

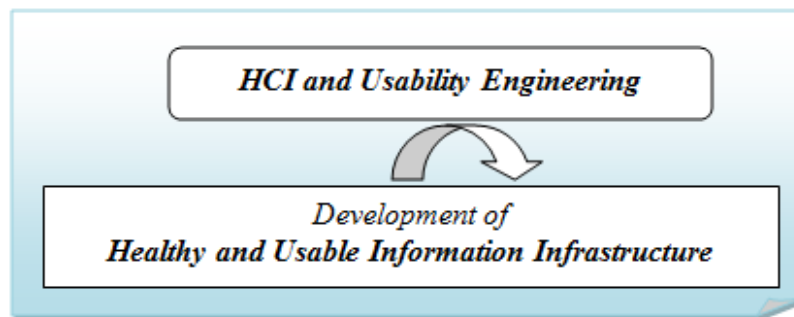
HCI or Human Computer Interaction is actually an academic and practicing field responsible for the study, as well as planning, designing, development of the interface with better interaction with user and computer or related machine. HCI incorporates both psychology as well as engineering fundamentals. Interaction more deeply deals with interaction of a user with software and hardware devices. Practically, HCI and Human Interactive Device both are important name in the field Usability Engineering. User satisfaction is the ultimate aim and motive for a healthy and sophisticated interface design [13,14].

The term HCI, First coined by Card, Maran and Newell in their book ‘The Psychology and HCI’. HCI always gives importance to how good and easy interface device design is possible. HCI needs some computational techniques which include Operating Systems, Programming Languages, Computer Graphics, and multimedia.

Interaction Techniques is actually kind of interaction between user and computer systems. An interaction is basically performs by using physical input/output device to perform generic task in the human computer dialogue. Though, according to some designer and Information Architecture expert, interaction is actually conceptual dealing which can be refined, extended, modified and so on. For better interaction HID Protocols plays an important role. The HID protocol makes implementation of the devices very simple. At first the device defines their data packets and then the HID descriptor.

## **Mode and Methods**

For better HCI based usable interface design and development several things are essential. Several guidelines are there, which includes, National and International standards organization or ISO also gives importance on usability in their ISO standard 9241, Part-II. Ultimately better and clear usable interface are depends on some of the factors; where Information Architecture play an important role [08].



**Fig: 4.** Depicted way of Information Infrastructure building

Information Architecture is very much associated with Information design and development. Fundamentally, Information Design depends on Information Architecture. The usability or interface clarity in generally depends on some of the aspects, these are may be:-

- Identifiable object;
- Familiar object with each object with other;
- From top level to the lowest level.

All information levels needs to be clear. Today various tools and methods are using for better and interactive interface building, which includes:-

- Web Static Analyser Tool;
- Web Category Analysis Tool;
- Web Variable Information Programme and so on.

However, in other way, HCI and usability depends on two things, one is host and another is Device. The host refers to monitor/PC, ATM Interface, Table/ Laptop interface, mobile interface and so on. Where as devices are includes:-

- Keyboards;
- Mouse;
- Microphone;
- Joystick;
- Camera and so on.

## **FINDINGS**

- The concept which provide Usability Engineering is common now; but the term Usability Engineering and similar such as HCI, HID and others still not utilised in common people or community or even academic domains;
- The application of Usability Engineering is increasing day by day and uses in Mobile, ATM interface and so on;

- Human Computer Interaction requires so many components [05,12].

## SUGGESTION

- Apart from professional computers, common people interface such as information centre, information kiosks need to be familiar with Usability Engineering;
- HCI and Information Architecture should be utilised rapidly depending upon need;
- Proper feedback is essential to take after service provided;
- Academic workshop, training, seminars needs to be conduct in this field.

## CONCLUSION

Information world become easier with Usability Engineering principles; information activities such as information collection, selection and mainly dissemination may get proper shape with the help of Usability Engineering principle in Information Science. Information Retrieval Systems and other public interface should be prepared according to the better interactivity and usability. Pure design, HCI, and Information Architecture may create unexpected problem; thus these matters needs to take care carefully.

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