

Interactive Surfaces

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Introduction

The world that Weiser had in mind is where the objects interact to satisfy our needs in a clear view form could not exist without considering some interaction with those same objects. In this project we will study the present solutions for creation of interactive surfaces and some visions about their future.

Methodology

The adopted methodology for this project was the research of the state of art, by seeing the company solutions that exist on the market, following through the reading and analysis of scientific articles about the usefulness of the solutions we did encounter.

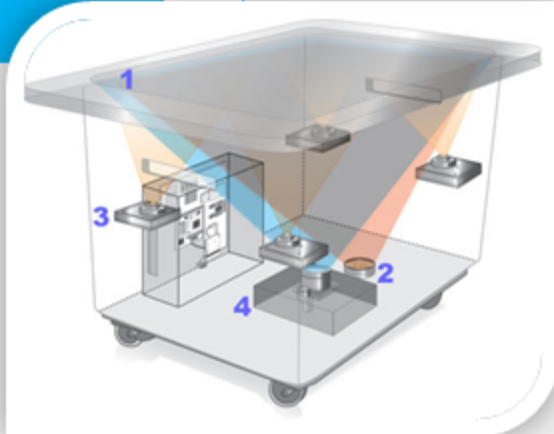
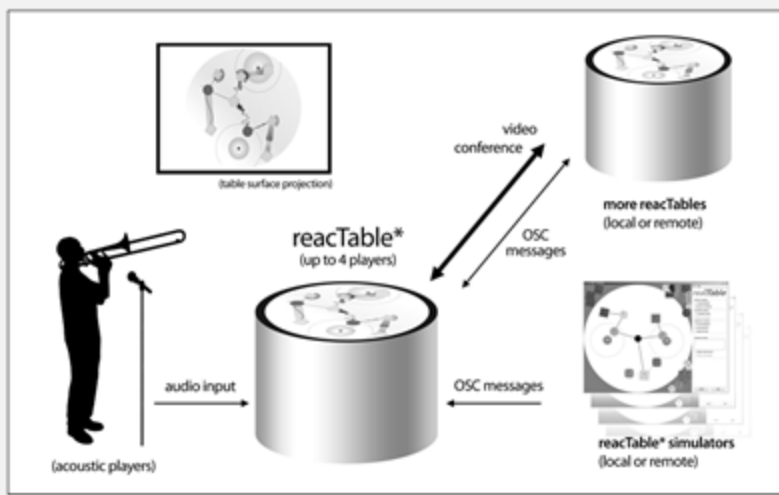
Reactable



The reactTable, is a novel multi-user electro-acoustic musical instrument with a tabletop tangible user interface. Several simultaneous performers share complete control over the instrument by moving physical artifacts on the table surface while constructing different audio topologies in a kind of tangible modular synthesizer or graspable flowcontrolled programming language.

The instrument hardware is based on a translucent round table. A video camera situated beneath, continuously analyzes the table surface, tracking the nature, position and orientation of the objects that are distributed on its surface. The tangible objects, which are physical representations of the components of a classic modular synthesizer, are passive, without any sensors or actuators; users interact by moving them, changing their position, their orientation or their faces.

These actions directly control the topological structure and parameters of the sound synthesizer. A projector, also from underneath the table, draws dynamic animations on its surface, providing a visual feedback of the state, the activity and the main characteristics of the sounds produced by the audio synthesizer.



Microsoft Surface

The Microsoft Surface experience brings people together to connect, learn and decide with a 360-degree interface that supports touch and real-world objects. With PixelSense™, Microsoft Surface sees and responds to touch and real world objects, supporting more than 50 simultaneous inputs.



Make content more engaging.

Plan and simulate.



Make learning more fun.

Transform the shopping experience.

Communicate and connect.



Connect with customers through games and pastimes.



Sixth Sense

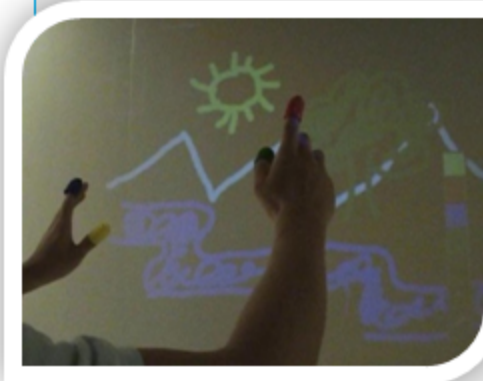
Sixth Sense brings us that bridge between the two worlds, without the need of having a physical surface to interact with the digital information, making every object a virtual surface that we can interact, manipulate and bring up the information we want and where want.



Some Applications of Sixth Sense are this ones:

Map

The map application lets the user navigate a map displayed on a nearby surface using hand gestures, similar to gestures supported by Multi-Touch based systems, letting the user zoom in, zoom out or pan using intuitive hand movements.



Drawing

The drawing application lets the user draw on any surface by tracking the fingertip movements of the user's index finger.

Gestures

The Sixth Sense also recognizes user's freehand gestures and binding them to actions. For example, camera of the system takes photos of the scene that user is looking at by detecting the 'framing' gesture. Another example is by drawing an '@' symbol the system will allow the user to check his mail. And so on.[6]



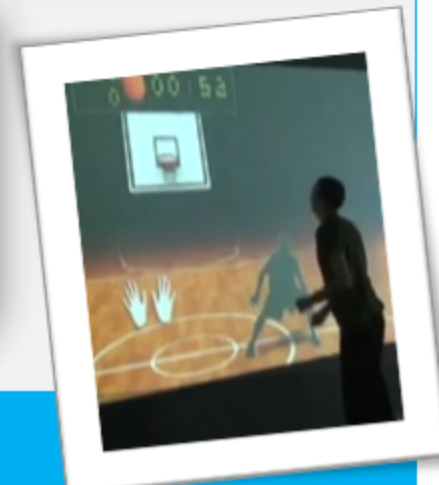
Augmented reality

Also the system augments physical objects the user is interacting with by projecting more information about these objects projected on them. For example, a newspaper can show live video news by streaming the video according to news topic that the user is currently reading /pointing.



Eyewall

The EyeWall is an interactive window projection system that displays graphics and can detect users touching the screen externally as well as people passing by from a distance. All applications can be run on this platform, from simple web pages to custom built 3D applications, making this a highly effective marketing tool reaching target audiences in retail environments, museums, lobbies, visitor centers, playgrounds, and other public spaces.



Conclusion

Through the elaboration of this project was possible to perceive that improvement of the techniques in interactive surfaces and TUI's allow that human computer interaction becomes more natural, transparent and ubiquitous by using the gestures which are intuitive and embodied to the user and the use of real object allow an improved affordance between the system actions and interactions. Also we would like to point out that emerging of these improvements was made possible because of development of display technology and sensors.

References

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