SURFACE COMPUTING

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INTRODUCTION

- A surface computer is a computer that interacts with the user through the surface of an ordinary object, rather than through a monitor and keyboard.
- No mouse or keyboard are required.
- User interacts with touch-sensitive screen. people use their fingers and to manipulate.
- Turns an ordinary tabletop into a vibrant and interactive surface
- Provides effortless access to digital content through natural gestures, touch and physical objects
- Come to life for exploring, learning, sharing, creating, buying and much more
- Available in the retail, hospitality, automotive, banking, healthcare industries
History

- **2001**: Microsoft researchers “Steve Bark son” and “Andy Wilson” developed idea of an interactive table.
- **2003**: 1st prototype (T1) was presented to Bill Gates for approval.
- **2004**: Here it came up in the form of “Tub prototype”.
- **2007**: Interactive tabletop device was built that seamlessly brings both the physical and virtual worlds into one.
Surface Computing

- Touch based graphical user interface.
- Dynamic interface that can recognize multiple objects that are placed on the surface and distinguish the difference between them—two cell phones to compare features or prices.
- Uses multipoint sensors on the surface to recognize many points of contact so many people can use it at one time.
- Allows manipulation and direct control of digital content like photos—which can be resized bigger or smaller instantly with the touch of a finger(s).
Features

- Types Of Surface technology attributes
  - Direct Interaction
  - Multi Touch
  - Multi-user
  - Object Recognition
Direct Interaction: interacting with touch instead of a keyboard or mouse
*Multi Touch*: several points of contact at once
**Multiuser:** many users collaborating at one time
**Object Recognition**: physical objects have tags to recognize and trigger different responses
Main Parts of Surface Computing

- Multi touch Screen (30 inch screen 1024 x 768 resolution)
- CPU- Central Processing Unit
- Microsoft operating system of Vista
- Intel dual core processor backed by 2GB of RAM
- 256MB video card
- 5 video infrared cameras
- DLP projector

✓ Each unit will cost between $5,000 - $10,000 currently
Set-UP Of Surface Computing

1. Multi-touch Screen
2. Infrared LED light source- multiple cameras net resolution 1024 x 768
3. CPU- Central Processing Unit
4. Projector- DLP light engine resolution 1024 x768 pixels
Uses cameras to sense objects, hand gestures and touch. 
User input is then processed. 
Displayed using rear projection.
Implementation

A real paint brush being used to draw a face on the Surface computer.

Swapping music from one mp3 player to another.
Mobile phones with domino tags is placed on Surface's top and the relevant information for the handset is brought up.

Play games with family and friends.
Domino tags can be placed on top of the Surface computer, which then recognizes commands from the pattern of eight dots.

The glass has a domino tag on the bottom which sends information about what the drink is, and potentially how and where it's made. It could even be used to order another drink.
Positive vs. Negative

✓ Positive
✓ • Multi users- collaborative effort of users interacting
✓ • Seamless- no wires or USB ports
✓ • Instant download/upload of photos
✓ • Users have more control of technology- ordering food or manipulating photos fast
✓ • Educational- learn more info about the products you are using

✓ Negative
✓ • Not portable- table has to stay put
✓ • Must own devices such as a cell phone to upload photos into or share with others
✓ • Have to be careful of table surface to not damage it
✓ • Very expensive to own
✓ • Tailored to high end clients
Conclusion

- During the last 10 years the surface computing technique has been developed into a very useful technology with numerous applications.
- Microsoft Surface is more than a computer. It’s a leap ahead in digital interaction. By enabling you to use your hands instead of a keyboard and mouse, it revolutionizes the way you interact with digital content, while keeping the ability to connect with other devices such as networks, printers, mobile devices, card readers, and more.
THANK YOU!