Cool Vendors in Human-Machine Interface, 2014

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To foster intimate customer experiences and support collaborative business processes, developers must recognize tacit and explicit forms of communications. Multimodal interface technologies enable these types of communications and represent the next generation in human-machine interaction.

The complete report is available for download at:
https://www.gartner.com/doc/2715221/cool-vendors-humanmachine-interface-

Some Key Findings

- Multimodal interactive screens supporting a multiuser environment, such as the solution offered by MUV Interactive, are state of the art in collaboration technologies.

- Gartner's findings from a retrospective on some interaction companies indicate a clear trend toward the adoption of in-air, optically based gesture control technology in consumer devices.

Analysis

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MUV Interactive

Herzliya, Israel (www.muvinteractive.com)

Analysis by Adib Ghubril

Why Cool: MUV Interactive turns any surface into an interactive display by combining several sensing methods based on micro-electromechanical systems (MEMS) and optical technologies. The

position of a user's index finger is ascertained by a controller box, which processes contextual information received from the Bird — a miniaturized wireless tracking device equipped with infrared (IR) emitters and a microphone, as well as inertial and visible light sensors. The controller then communicates touch, in-air gestures and click commands to an application running on any computing platform connected to the controller via Bluetooth. The user receives feedback from a display generated by an overhead or pico projector, which is connected to the controller via a graphics link, or from MUV's dynamic display system that contains six controllers that can manipulate six different images projected in irregular 2D shapes.

Such a system may allow the user to simultaneously edit an email, which might be projected on a coffee table, and answer a mobile phone call, whose image is projected on the couch, without actually being in the physical proximity of either device. Furthermore, because each Bird transmits a unique radio frequency (RF) code, the system can distinguish between multiple users who may be concurrently interacting with a shared application.

Challenges: Although MUV's solution currently supports up to five independent users — and the company is planning to extend that to 10 this year — the real stumbling block will be to foster a developer's ecosystem, such that there is a critical mass of third-party applications available for this interactive system. Furthermore, although the controller currently manages and optimizes the operation of the Bird, battery life could always be improved further. MUV Interactive is working on refining the use of the Bird's onboard optical emitters and sensors to further extend the battery life.

Finally, the system does not provide feedback beyond the visual sense and perhaps some chimes; finding ways to incorporate 3D haptics feedback would enrich the experience in a very meaningful way.

Users will tolerate wearing an electronic device — in this case, a wireless tracking device — if the benefits are favorably perceived. Those benefits are currently clearer when undertaking activities pertaining to the meeting room, classroom or even the broadcast studio, but they are less clear for activities pertaining to the living room. MUV's conversations with smart TV manufacturers will prove fruitful if it can show how user tracking can enable a more interactive living room or family room experience.

Who Should Care: This solution ought to be considered by any entity, corporate or government, that appreciates the value of compelling presentations, whether they are held in a meeting room, classroom, lecture hall or conference auditorium.

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