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Gartner Says Augmented Reality Will Become an Important Workplace Tool

Augmented Reality Has Broad Business Potential

STAMFORD, Conn., 14 January, 2014 — Although the adoption of augmented reality (AR) in the enterprise is still in its infancy, AR technology has matured to a point where organisations can use it as an internal tool to complement and enhance business processes, workflows and employee training, according to Gartner, Inc. Gartner said that AR facilitates business innovation by enabling real-time decision making through virtual prototyping and visualisation of content.

"Augmented reality is the real-time use of information in the form of text, graphics, audio and other virtual enhancements integrated with real-world objects," said Tuong Huy Nguyen, principal research analyst at Gartner. "AR leverages and optimises the use of other technologies such as mobility, location, 3D content management and imaging and recognition. It is especially useful in the mobile environment because it enhances the user's senses via digital instruments to allow faster responses or decision-making."

Mr Nguyen said that AR is particularly powerful for:

- Discovering things in the vicinity — for example, enclosed objects generating heat.
- Presenting real-world objects of potential special interest — for example, detecting and highlighting objects generating higher than normal levels of radiation.
- Showing a user where to go or what to do — for example, helping a worker make a repair in a hazardous environment where visibility is low.
- Providing additional information about an object of interest — for example, distance, size or level of danger.

AR services use various device sensors to identify the users' surroundings. Current implementations generally fall into one of two categories — location-based or computer vision. Location-based offerings use a device's motion sensors to provide information based on a user's location. Computer-vision-based services use facial, object and motion tracking algorithms to identify images and objects. For example, being able to identify a shoe among numerous objects on a table, Google Goggles (imaged-based search), or optical character recognition (OCR).

The business potential for AR has increased through improvements in location services and image recognition. The precision of indoor location services has increased significantly, and this greater accuracy allows businesses to use AR location features for vehicle, campus and in-building navigation and identification. Image recognition capabilities in AR solutions allow user organisations to use these AR capabilities in processes that require staff to visually identify objects and parts and for real-time decision making. For example, fire-fighters can use AR to find out ambient temperature or a building layout so they know exits, and potentially dangerous areas. These technologies together provide various benefits to using AR as an internal tool. This includes enhancing current business process, facilitating and optimising the use of current technologies, and providing business innovation.

Nevertheless, while organisations have used AR for internal purposes in the past, these have been for specific and limited tasks and organisations have developed these solutions internally using custom hardware and software. Some companies are experimenting with how they can best use AR as an internal tool. Gartner expects to see moderate adoption of AR for internal purposes over the next five years as the availability of powerful handheld devices, such as smartphones and tablets, and more portable, convenient and affordable head-mounted displays is making internal AR applications more widely available.

"AR is most useful as a tool in industries where workers are either in the field, do not have immediate access to information, or jobs that require one or both hands and the operator's attention," said Mr Nguyen. "As such, the impact on weightless industries is lower because these employees often have constant and direct access to the information they need (such as knowledge workers)."

Mr Nguyen said that AR provides the highest benefit to efficiency. It has the potential to improve productivity, provide hands-on experience, simplify current processes, increase available information, provide real-time access to data, offer new ways to visualise problems and solutions, and enhance collaboration. IT organisations can use AR to bridge the digital and physical world. AR is an opportunity for IT to provide leadership to enhance the enterprise's interaction with its internal user base.

AR adoption risks do apply to the current environment, as with other technologies that are new and unproven. However, Gartner said these risks will decrease over time as implementations and use cases mature. Prior to deploying an AR solution as an internal tool, companies must identify a clear goal or benefit for the deployment, such as improved access to information, or to provide training and assess how the organisation can use AR to reach this goal.

More detailed analysis is available in the report "Innovation Insight: Augmented Reality Will Become an Important Workplace Tool." The report is available on Gartner's web site at <http://www.gartner.com/document/2640230?ref=QuickSearch&stkw=%22augmented%20reality%22>.

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