

# Innovation key to success

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In the landscape where nothing is more constant than change, it takes a fair bit of expertise and guts to predict the trend and pick out tools and technology that would define it.

People in the business of Research and Development like John Apostolopoulos are aware that any view of the future, irrespective of being called a "prediction" or "forecasting", is fraught with great deal of risk. But they also know that acting out innovation, rather than merely talking about it is key to keep IT behemoth like Hewlett Packard in business for decades to come.

No wonder then that the R&D arm of HP, the HP Labs, has shortlisted 24 "best bets" that is likely to alter the way technology is being used and is giving a serious look at the mobile computing space, which has somewhat remained the unconquered frontier for the PC giant.

HP may be the leader in the personal computers and laptops, but company officials are under no illusions that making their devices "engaging" and "immersive" at the end of the day is key to win the heart of consumers.

As mobile devices allow users in developing countries to leapfrog traditional technology adoption cycle, the Labs are invariably working on platforms like WebOS, obtained through the acquisition of Palm Inc in July.

"Seventy or eighty per cent of SMS messages go through HP's software (functioning at the backend) due to its high availability and better throughput. Our technology has also proved to be the best in video streaming, fix-mobile conversion etc, but we must admit that we are not visible in the consumer software side," Apostolopoulos, who is the Director of HP's Multimedia and Networking Labs, said.

"We relied too much on Microsoft to take care of our consumer software requirements which was a mistake. But we are correcting it now through business and technology strategies

(such as acquiring PDA and smartphone makers Palm in July). This has given us great scope for innovation."

Four of the "Big Bets" — seamless audio-video collaboration, next generation display systems, glasses-free continuous view 3D, and alternative ways to interact with the Internet including using mobile and television— are currently being pursued by Mobile and Immersive Experience Lab. With fewer alternatives to glass and "traditional" technologies, display is one of the areas where HP Labs is said to have made inroads.

"Besides CRT (Cathode Ray Tubes), LCD (Liquid Crystal Display) and Plasma, there are very limited options for display for devices. There are major challenges with glass, which is heavy and fragile and is therefore unsuitable... HP has been investing on a plastic substrate that would work on low power and give good clarity..."

The substrate enables illumination from the ambient light rather than backlighting. It promises to be lighter, thinner and more durable than the most advanced LCD available today.

The fact that it would cost a fraction of what it takes to manufacture LCDs and requires far less power to function also make the display technology more attractive than the ones available now.

Despite all the advantages, plastic isn't

dimensionally stable, which means it would shrink and expand in unstable temperature conditions that would disturb alignment of the layers of lithographically defined patterns that ensure it functioned properly. The research team seem to have achieved a major breakthrough to solve the issue, bringing the technology a step closer to reality.

Though innovations in display technology may not directly impact the mobile space at least for the time being, HP believes it may have some role to play in future. With High-Definition videos becoming the trend, a flexible display technology would potentially change the way people use videos.

"Construction workers, for instance, can wear the displays on their sleeves and listen to instructions from their superiors," Apostolopoulos said.

## The India challenge

The presence of HP Labs in India — Bangalore is one of seven labs the PC giant has across the globe — provides an ideal testing ground for technologies that would make mobile devices more attractive.

The Labs here is working around rich and intuitive user interfaces, HMI (Human Machine Interface), gesture based interactions, mobile and social computing, which can be applied in the developing countries eager to latch on to newer technology features. "We think Palm's smartphone IPs (intellectual Properties) would fuel our research in the mobile space," said Sudhir Dixit, Director, HP Labs India.

"We know that mobile phones are becoming central to the way of life here and surely things like gestures and multi-lingual functionalities etc would make them more useful for the diverse population."

The team is also working on 3D technology which, it believes, has greater application in a range of areas from education to entertainment. The challenge for them is to create an experience that requires no glass to view 3D videos.

"These are still brewing in the Labs and would take sometime before becoming a reality, but the results are promising," Apostolopoulos said.

