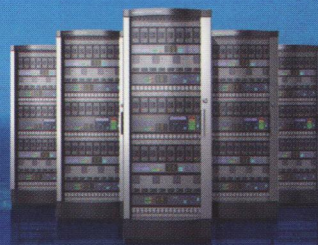


EXPRESS COMPUTER

INDIA'S FOREMOST ENTERPRISE IT MAGAZINE

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STORAGE

Mid market is the new battle ground for vendors

SDN: The Soft Side of Networking



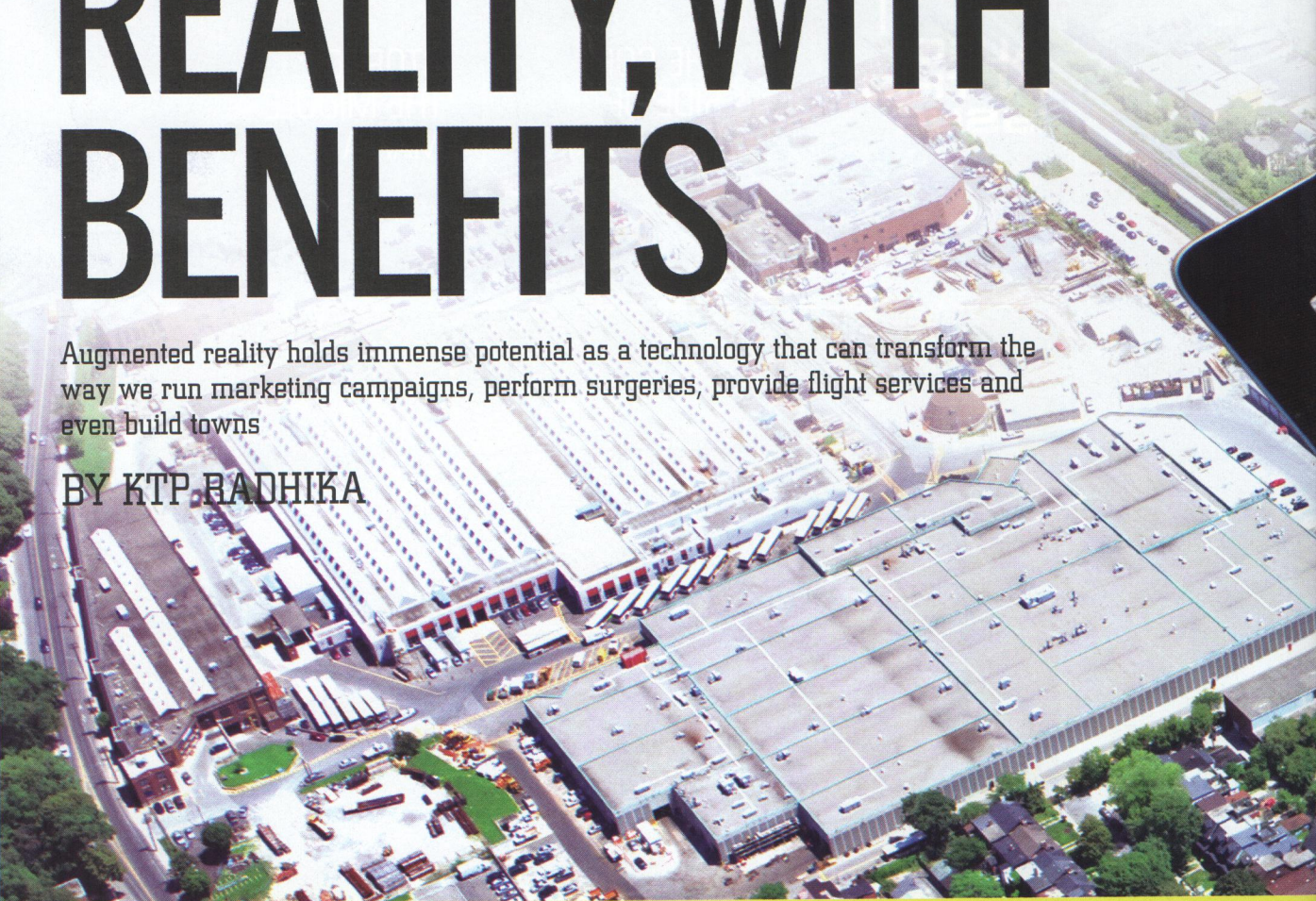
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BY KTP RADHIKA



A little over a year ago, automaker Ford launched Ford Fiesta's new variant Fiesta Powershift Automatic in India. The car came with exciting new features such as Hill Launch Assist technology, better fuel efficiency and so on. During the launch, the company wanted customers to know these features and wanted them to experience these in a better way. The company wanted the new car's ad to provide much more than a static view of the features—for instance, show informative animations, enable users to go to Ford's website or book a test drive, share the ad on their social networks, etc.

Sounds ambitious? Maybe. But Ford managed to do all that and much more.

The company hired Delhi-based software startup Gamooz, which develops augmented reality (AR) applications. Simply put, AR is a way to read or view digital information that is placed on a physical, real-world object; a print ad in this case. Gamooz created an AR based campaign for Ford using an AR browser from a company called Layar. Gamooz prepared AR-based brochures and Ford distributed them to 230 Ford dealerships all over India and ran ad campaigns in mass media.

The results were stunning. Over four million people read the advertisement,

and more than 30,000 people scanned the ads and viewed the interactive digital content super-imposed on them. Users were able to view videos featuring Ford Fiesta as well as quickly jump to Ford's mobile website, book a test drive, or quickly share the car on Facebook or Twitter. All it took was a smartphone which can read AR data.

Similarly, while launching Oreo McFlurry sundae nationwide, McDonald's India used AR for the campaign. Those who enter McDonald's stores were able to download an app on their smartphones and when they point their gadgets towards the McFlurry standees in store, an unusually big and



device. A growing number of devices now sport AR apps. For instance, Nokia's AR app 'city lens' is available on Windows-based Lumia devices, which can show restaurants, stores and other venues in immediate vicinity. Layar has been offering AR for Android and the iPhone for some years now.

An augmented future

For the vastness of business benefits that AR can provide, the technology as of now is facing its share of challenges as well. "There are only a handful of vendors in India who can provide good quality AR systems. This has made the

price much higher. The immediate need is of having more vendors offering good quality AR systems which will in turn bring down the price," feels Bansal. "As the technology matures, we will see more application of AR in activities going around in India."

Other major challenges that need to be resolved include lack of quality content to engage audience, lack of awareness, issues about system integration, portability and so on. A major chunk of users are still unaware of the potential and usage aspects of AR. Many brand managers and marketers are still skeptical about the real return on investments in from using AR as a

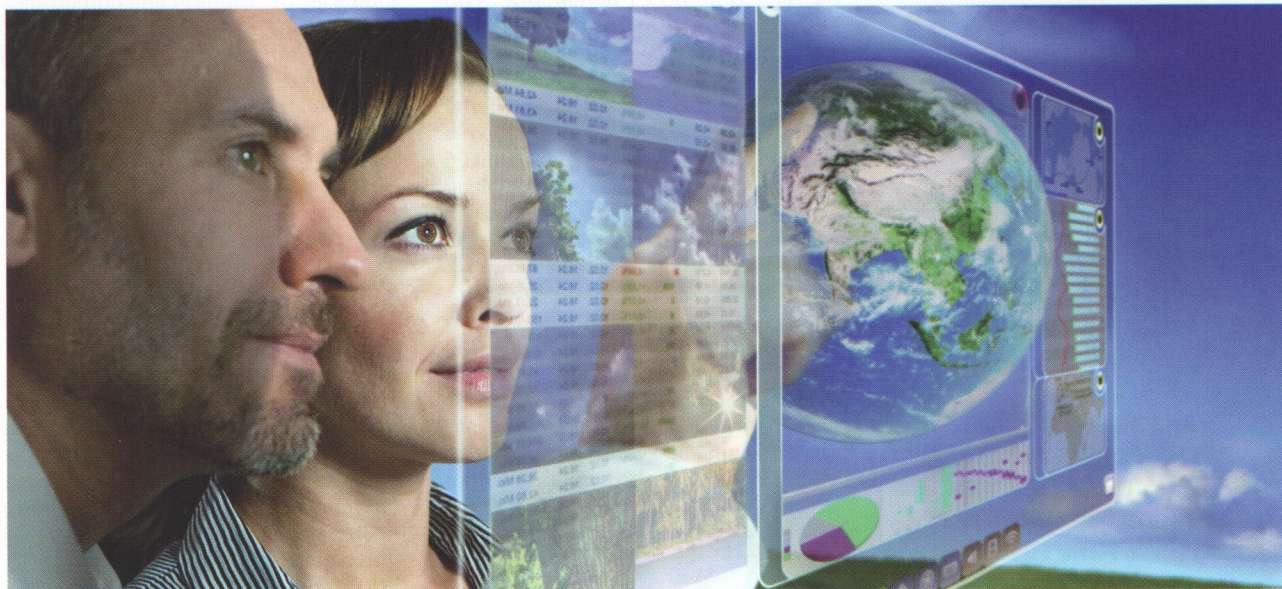
marketing tool. So industry players feel there is definite need for spreading awareness about the utility and advantages of AR. Current AR application works very well when it comes to static scenes but achieving accuracies in dynamism is also important. This is also a challenge in AR field as of now.

That said, as an enabling technology, AR can take enterprise to the next level in doing business. "Further advancements in the technology will open novel ways of deploying AR in enterprise mobility," says Lalvani. Having already made its presence felt in many fields, in coming few years, we can see novel ways of deploying AR technologies in business. In the near future AR will become a common tool. Urban planners and those in real estate will use it to see how new construction will look, feel, and affect the area, doctors will use it to ease surgical procedures, kids will use it as a learning tool. Experts feel that as AR technology matures what we see in science fiction will become a fact. What we are seeing today is just the tip of the iceberg.

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AR Components

An augmented reality system consists of hardware and software components. The hardware includes processors, display, sensors and input devices. Displays can be implanted with head mounted displays, glasses, contact lenses or handheld devices. There is a tracking and orientation system to pinpoint user location in reference to their surroundings and additionally track the user's eye and head movements. The software part derives real-world coordinates, independent from the camera and camera images.



impact on productivity and efficiency." The software can vividly show real or simulated flows of trucks, forklift trucks, and other machinery within the premises and enable simulations that help assess the impact of redesigning the warehouses and docks or modifying transport routes or stock configurations until performance is optimized.

AR in education and marketing

Another beneficiary is brand activation and marketing initiatives. Gamooz's Wadhwa comments: "AR is a superb tool for brand activation and mall activities. For businesses, it complements overall marketing strategies and is highly effective in creating a buzz around the brand." Using AR apps, customers can be better engaged since it creates excitement among them. Usage of AR techniques also reflects the inclination of a brand towards

technology. Sandeep Shukla, Head - Marcom, Jaquar & Company, which is into bathing solutions says, "Our products including shower systems, whirlpools, steam cabins and spas could be only showcased better if they are demonstrated with full functionality. Some of our products require water flow, creation of a whirlpool, mist formation. It is not possible for stores to show the water movement actually in the real product like a shower system. Consumers do not understand the benefits unless they see the complete functionality rather than just the product on display. AR throws an opportunity to create a virtual demonstration to viewers at large over PCs, tabs, handhelds, screens etc. This works for both B2B customers & B2C consumers."

In the tourism industry, AR can enhance tourist experience with contextual information about buildings and monuments. Today, AR-based translations apps are available to help

read and interpret signboards and menus. "Mobile AR offers the possibility to provide all the information easily to citizens to improve their quality of life such as locating the nearest citizen facilities, providing relevant tourist information about a sight, monument or museum, public offices locations, timings etc," says Purswani. AR apps are also changing the way educational content is offered in classrooms and makes classroom learning much more interactive.

Opportunities galore

Still in the emerging phase, AR can provide vendors with immense opportunities to explore. Many applications and services are currently emerging in almost all sectors. Wadhwa says, "There are very few players in the market. Opportunities are only going to increase manifolds from here. AR vendors are tapping this market by creating customized AR applications for their clients and also offering services via their AR platforms"

Big players as well as start-ups are currently guiding their R&D initiatives in to AR. In the display area, major companies such as Microsoft and Google have become front runners. Google has developed prototype glasses which can stream live information in front of the user as well as respond to voice commands, take pictures and record videos. Microsoft has got patent for its AR glasses late last year. Apple too has got patents for an AR system that would work with a hand-held communication

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information and branded virtual games and activities. Research and Markets estimates that the AR applications market is expected to grow exponentially from \$181.25 million in revenues in 2011, to more than \$5 billion by 2016, at a CAGR of 95% from 2011 to 2016.

This growth is driven by various factors. Industry experts feel the advent of AR-supporting smartphones and tablets in enterprises is one of the major driving forces behind it. As Sunil Lalvani, Director - Enterprise Sales, BlackBerry India, puts it, "AR is a big advancement in the mobile world and has the capacity to amaze people with its possibilities." He says the technology allows brands to actually interact with consumers. "And as the costs of AR-capable mobile devices go down along with advancements in AR technology, the costs of employing AR into apps is also reducing considerably." This is encouraging enterprises to try AR out. Another important factor is the increase in mobile Internet speed and the adoption of mobile-enabled Web use. This is enhancing usage of AR apps beyond limitations of time and space. In the past few years, there has been a rise in m-commerce with every big and small brand making its presence felt in the mobility space, providing consumers with access to their products and services. Brands in search of providing interactive, and near and closer physical shopping experience to consumers are leveraging on AR.

AR offers immense opportunities for enterprises to leverage internally and externally. "The major benefit is that AR

takes interaction to the next level by making content more engaging over the competition," feels Pawan Bansal, COO, Jagran Solutions, a marketing agency on brand activation. "As it develops further, it could add up a new dimension to business delivery both at business to business and business to consumer levels." According to Jai Ganesh, Principal Research Scientist at Center of Innovation for Tomorrow's Enterprise, Infosys Labs, among all the user interaction technologies and applications out there, AR is one of the most compelling and so versatile technologies. "It can be leveraged along with any of the global mega trends shaping the opportunities and challenges facing tomorrow's enterprises," he says.

AR in medicine and manufacturing

AR technology can find application in a variety of fields that range from engineering, design, medical imaging, aviation, military, marketing, robotics and training to movie production, gaming, logistics and even fashion shows. Some AR techniques make it possible for weather forecasters appear on-air in front of computerized maps. AR is finding a lot of application in the medical sciences, especially in surgical simulation, training, planning and implementation.

One of the most significant applications of AR is in image-guided surgery. For instance, AR technology will provide immense visualization for laparoscopic surgery. Ganesh observes, "Rising cost and the criticality of medical



MANY COMPANIES HAVE ALREADY IMPLEMENTED AUGMENTED REALITY AS A PART OF THEIR MARKETING. IT HAS A GREAT FUTURE POTENTIAL.

PURSHOTTAM PURSWANI,
CTO, ATOS INDIA

care has awakened a new health consciousness. Patients want greater control over health decisions. AR technology can allow patients to interact with a kiosk inside the pharmacy to receive advice on the best course of action given a set of symptoms, source alternative remedies from a peer group, or scan a market to receive instructions on how to use medical equipment." Experts say AR can also improve day-to-day lives of the rural poor in developing countries by enabling social workers to deliver video demonstrations on important issues such as health and sanitation.

Like in healthcare, manufacturing too can draw a lot of benefits from this emerging technology. AR-simulated environment will enhance design and manufacturing processes. For instance, car manufacturers can use AR to visualize and design a car body and engine layout. With the help of AR apps, medical equipment manufacturers can allow their sales team to provide 3D demonstrations of the entire product range to doctors on a smart phone or a tablet. "3D simulations and management software and systems can greatly improve logistics," feels Purswani of Atos. "Layers describing geo-information and warehouse facilities are superimposed upon with information about routes, utilization, throughput and other parameters than

AR Predictions

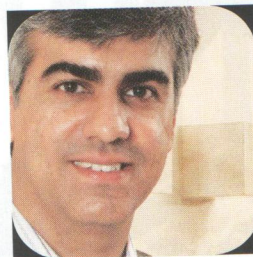
- Enterprise applications with AR elements are expected to account for the third-largest proportion of revenues by 2015, according to Juniper Research
- More than 864 million mobile devices will be equipped with AR technology and annual revenues from mobile AR apps will reach \$732 million by 2014.
- More than 2.5bn AR apps to be downloaded to smartphones and tablets per annum by 2017, with games accounting for the largest share of downloads, states Juniper Research
- According to figures from ABI Research, the market for AR in the US alone is expected to hit \$350m in 2014, up from about \$6m in 2008, or, around 50 times more
- More than 103 million cars could have some form of AR technology embedded by 2020.

COVER STORY



**AR TECHNOLOGY
RESONATES WITH THE
USERS. WITH AR
DISPLAYS, INFORMATIVE
GRAPHICS WILL APPEAR
IN YOUR FIELD OF VIEW,
AND AUDIO WILL
COINCIDE WITH
WHATEVER YOU SEE.**

SOUMYA DAS,
DIRECTOR, RUDRABHISHEK INFOSYSTEM



**AS THE COSTS OF
AR-CAPABLE MOBILE
DEVICES GO DOWN
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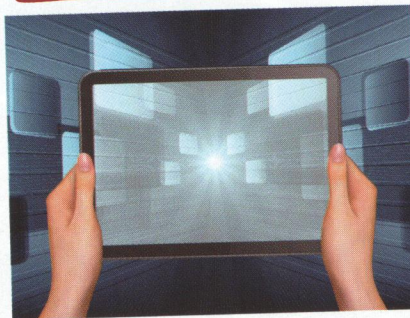
SUNIL LALVANI,
DIRECTOR - ENTERPRISE SALES,
BLACKBERRY INDIA

animated McFlurry cup would jump onto the phone screen out of the poster. Besides, customers were able to scan the QR code printed either on McDonald's try mats, menu cards or shop front and could then take their pictures, post it on social media and get a personal McFlurry experience.

Augmented reality has become new buzz word for marketers. But creating augmented ad campaigns is just one of the many areas AR could help with. Like big data and cloud, industry experts feel AR is going to be the next big trend in enterprise technology. In detail, AR is a digital technology that integrates virtual scenes generated by a computer with a real environment that runs interactively in real-time, to add more information and meaning. These are inserted in a manner to complement the real picture, generating a composite view.

It is not virtual reality. It does not replace the real. As the name suggests, it just augments it. It's a big leap of the mind, in a way. It blurs the line between real world and computer-generated world by enhancing what we see, hear, feel and smell. For a user, AR provides a real-time view of the immediate

surroundings improved or enriched with digital information. "Computer-generated 2D and 3D graphics are merged with real world imagery to provide an enhanced experience to the viewer. It helps users to understand the concept better and acquire more information from the same," explains Soumya Das, Director, Rudrabhishek Infosystem. "AR technology resonates



with the users in such a way that it enables brands to really move with them. For instance, they can take a test drive of a latest car model. With AR displays, informative graphics will appear in your field of view, and audio will co-incide with whatever you see."

An emerging market

Enterprise AR is at a nascent stage and is enticed to grow rapidly. "AR technology is yet to establish itself in India" says Purshottam Purswani, CTO, Atos India. "Even though the concept is new, Indian enterprises have started understanding the importance of AR. Many companies have already implemented it as a part of their marketing. It has a great future potential." AR technology is today used in the promotion of movies, in media and entertainment sector, healthcare and so on. "AR's market is growing very fast in India. Here, business usage of AR started around three years ago with QR codes. Then the technology has grown to image tracking and face tracking and even motion tracking," says Gaurav Wadhwa, Co-founder, Gamooz. "Every day, we see a number of advertisements in newspapers embedded with AR. Many print publications in India have also got their own AR browsers or platforms for delivering their exclusive news content to their readers in a fun-filled and interactive way. More and more companies and brands are trying out AR now as a new interactive medium to engage with their customers."

It's catching indeed. A recent report from Juniper Research has found that with brands and retailers increasingly keen to deploy AR capabilities within their apps and marketing materials, AR applications will generate close to \$300 million in revenues globally in 2013. It found that many retailers now perceive AR as a key means of increasing engagement with consumers, for providing additional product

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