

Rahul and Mona Kapur, a typical young urban professional couple, both in their mid 30s. While Rahul is an investment banker with a leading MNC bank, Mona is the HR head of a leading BPO organization. Like many similar couples, they too draw home a fat seven-figure salary. Six months back the Kapurs decided to shift their new home to a modern apartment in Pune. And this was not without a reason.


Once they set up their new abode,

the Kapurs are looking to make it a true 'dream home'. Again, this would be similar to the aspirations of thousands of other similar couples. But what differentiated the Kapurs were the measures they took to make their 'dream home' also a smart and intelligent one. They wanted a house that would automatically take care of all their needs—dusting, cooking, laundry, bathroom, security, entertainment et al.

Both Rahul and Mona are determined that the pressures of working

in a stressful environment do not knock them down. And it's not the daily yoga, or a strict diet regime, or the workout at the office gym that the two are looking forward to as the solution. Instead it would be their 'home, sweet home', which would have, as the two say: "all the comforts of a fully automated place, that enables us to unwind and ward off our stresses."

Though the couple are widely travelled, they still insist that their "smart, digital home is the most com-



SMART PEOPLE SMARTER HOMES

While the concept of digital home is no more a Ray Bradbury fiction—makers of computers, phones, and consumer electronics will have to work on right packaging, value for money, ease of use, portability, flexibility... as they unleash their killer applications

forting place.” Electronic devices are all over the place—you name it, they have it. The Wi-Fi enabled home is full of modern gadgets and gizmos—from a home theatre to an MP3 player, IPTV to digital camera... But it is not just the presence of these gizmos that make Kapurs’ a digital home. The full flexibility of using the Internet in a WiFi enabled home, the ease of operating all electrical appliances with the click of a button have added to their comfortable lifestyle.

And the Kapoor are not alone.

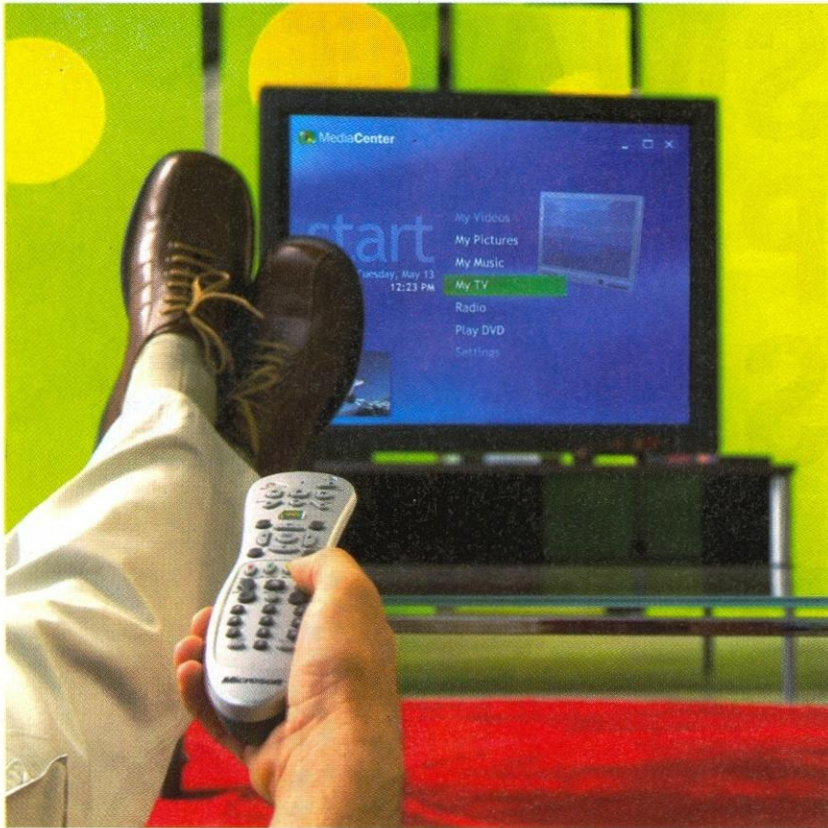
Their story is similar to several such urban couples who have opted for such “smart homes” that are coming up in Bangalore, Mumbai and Gurgaon. Not to miss the fact that India is witnessing the return of global Indians, who are using technologies, prevalent elsewhere in the world to make their home a more comfortable experience.

A Normal Working day

Imagine the daily routine of a normal working day: in the morning, Rahul is woken up by his current favourite audio and video track by the Columbian pop star, Shakira, tuned to ring at 06:30 am in the morning. Being a music freak, the hip-hop number per-

fectly sets the tone of his day. Even without getting into the kitchen, he starts his electric kettle with a click and the tea is ready for both Mr and Mrs Kapur. While working out in his personal gym, he listens to his other favourites downloaded from his i-pod onto his music system. The lamps of the room light up and the doors open (with just a click) as he enters.

As Mona sips her tea on the bed, she can automate the geyser temperature in the bathroom—soon it will be time to get Payal ready for her school bus. Breakfast, the favourite meal of the day for both the Kapurs, is ready on a trice, even as they are busy with their other chores. In fact, they have to enter the kitchen only



The Kapurs' home, though just a case in point, is a welcome exception even in the urban landscape

to put the food on the dining table; from the outside, they can control everything else—the cooking range and the toaster. Meanwhile, both the milkman and the newspaperman have made their calls—their specific rings are automatically stored and the Kapurs need not bother to check out. And, anyway, the door security CCTV shows who's at the door. Once ready for the day's grind, they click open the garage door using remote switch and are out in their car. On their way they drop their six-year old daughter Payal at the school bus pick-up spot. And, not to forget, before leaving they have put food in the refrigerator and the microwave—obviously with automated timers at regulated temperatures, which Mona can control from her office only.

As Payal comes back from school

at 1:30, her favourite lunch is ready. And though the maid has also come in, Mona can get a complete view of her house sitting at the office. Apart from monitoring security of the house, Kapurs' 'Smart Home' also gives both of them a glimpse of what Payal is doing and the tricks she is up to. The door security CCTV enables the maid to ignore calls of any unwanted strangers.

That's not all! The menu for the day's dinner is there on the PC. They get hot cups of coffee as they come home after a long, tiring day at work. The room temperature is automatically adjusted according to their requirements. The digital answering machine handles all their calls, saves in all voice messages in their personal voice message box.... On other evenings, they regularly catch up with their relatives through chat using we-

bcam—Rahul's parents are in Amritsar, Mona's in Lucknow; their cousins in varied places ranging from Dallas, Birmingham, Ontario, Auckland to Mumbai, Bangalore and Dubai.

Gaming, videos, movies, music, live TV, video on demand and photos from flexible, connected and interoperable devices; it's all there and much more. The Kapurs' home, though just a case in point, is a welcome exception even in the urban landscape. Though digital homes are starting to show up in India, there is still some time before we see a regular influx of smart homes, like the one Kapurs have, across our cities. How far are we from this dream is certainly a million dollar question, which most tech giants are grappling with.

No Pipe Dream This

While the digital home that the Kapurs have built in Gurgaon sounds like a Ray Bradbury fiction, for urban India it might not be such a futuristic dream after all.

Recent activities though point out that fully automated digital homes may soon cease to be the brickwork of imagination. Residents, at least the ones occupying space in some fresh realty projects in Pune and Bangalore, would be able to control their home security, appliances and seamless telephony with a click of the remote or a swipe of the smart card. Mumbai-based Aftek, who under the name of Digi Home Solutions has deployed Digital Home Gateway Solutions can be thanked for this. Currently installed at Rohan Tapovan (112 flats), Wonder Futura (118 flats) in Pune and Rohan Ashima (64 villas) in Bangalore, this solution claims to address areas like security, safety, automation, entertainment, information and communication, and deliver a hi-tech home for its denizens.

The concept has been woven around Aftek's flagship IP Jadugar, which can operate and communicate, without interruption, between vari-



Smart Tips for Smart Homes

- The level of bandwidth at your home should be as high as possible
- Get wiring done throughout the house
- Brick and cement affect wireless network; signals are stronger through wood
- Continuous power supply or else invest in a spike protection unit
- Check out the size, noise it makes and performance capabilities
- How easy is it to use—can you turn it on without a keyboard?
- If you have a gaming focus, the memory and hard disk drive should be big enough

ous protocol interfaces like GPRS, GSM, Bluetooth and VoIP. The solution is based on this platform and the company has developed software and hardware around the same. The main control motherboard is interfaced with wires to various points like telephone lines and network related connections. Commands for switching on/off travel between the control and sensor units to the board. While the company optimizes and customizes the OS, it comes from standard vendors ranging from Embedded Linux and Windows CE, while on the server side Desktop Linux and Desktop Windows is used.

However, it's not just Aftak but a host of vendors who are making efforts to have similar smart homes across the country. Software giant, Microsoft, which launched its concept early this year on a partner driven model, has a clear idea of what a smart home should look like. "Our smart home is to give consumers an environment where they can integrate various technologies with their

everyday lives in a seamless manner," says Rishi Srivastava, director, Windows Client Business Group, Microsoft. Entertainment, security and automation of processes are three key elements in a digital home, he adds.

He recognizes the fact that the market is still nascent. According to him, "Though the idea of digital homes is not new, the market in India is very small, so our thrust really is to first spread awareness about what technology can offer."

Consumer electronics company Samsung India's deputy-managing director, R Zutshi, agrees when he says, "We are still in a 'market creation' and 'awareness creation' stage, and it is still very early. For instance, till 2005, a huge chunk of the market for digital still cameras and camcorders was grey (approximate 65%), and it is only now that it's coming into the fold of the organized market."

The digital camera market grew by leaps and bounds in 2005, registering a growth of 60% in unit terms on yearly basis and a CAGR of 43% for

the organized market between 2006-10. According to IDC, this is just the beginning. The growth of these is a good sign as these would lead to growth of digital homes.

The fact that there are too many choices available to the consumer in not just the digital camera market but also in the other product ranges—is an optimistic sign. As per industry estimates flat CTVs; VCD/DVD players; Microwaves, and PCs, all saw more than 25% growth in 2005 and other product categories are fast catching up.

According to Zutshi, "Samsung is not marketing it as a concept solution, it is promoting its digital products through its brand shops. Till last year, we did not even have too many products in the digital product range, but now we have introduced many products. What we want to do is offer top quality products at competitive prices."

The phone makers too are gearing up. Mobile handset maker, Nokia, feels that the increasing consumption



of digital content, such as music, photographs, and video, on a variety of different consumer electronic devices coupled with new connectivity solutions such as wireless local area network (WLAN) is ushering in a revolution in how people consume digital content—both outside and inside the house.

The leader in the mobile phone maker market aims to be at the forefront of developing the networked home by providing solutions that introduce mobile handsets to the digital home offering, said a Nokia spokesperson. Although Nokia's UPnP enabled phones are available in India, these have not really taken off, says the Nokia spokesperson. Nevertheless, Nokia is bullish about the market picking up.

Apprehension Aplenty

Consumer electronics major, LG's R&D, consumer electronics and IT head, Vipin Gupta, more or less agrees with the phone maker but feels there is still a long time before the digital home concept truly picks up. "What

we know from our experience is that prototype concepts do not work here. At the moment we find the digital home concept gaining popularity in small bursts—from LCDs to digital cameras and camcorders," he quips in a matter of fact manner. Nevertheless, LG already has a global concept of digital home in place.

Whether the market indicates a go-ahead also matters to chip giant, Intel. While Intel has a global concept paper ready, John McClure, director, marketing and operations, Intel South Asia, says, there are no plans to launch the technology in India. "We had carried out a study to see if the time was right. We found, that it wasn't," adds he.

Intel has named their digital concept, the 'Viiv' technology. The concept includes latest devices from all major companies along with a powerful computer to obey and perform according to the will of its user. The whole system of their digital home is cordless and free from all types of switches and cables.

Even though these top IT giants

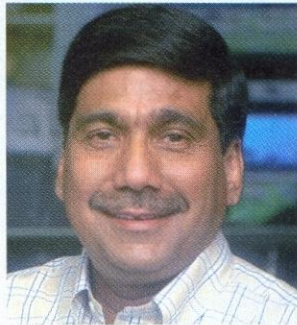
are at various stages of conceptualization of the digital home idea, apprehensions of introducing their products in India are clearly visible, as they feel the Indian market is not yet ready for adopting the same. Pricing is another crucial issue that the consumer electronics companies feel, needs to be resolved. It is also an area where the government has an important role to play as well. "In 2005, the government had cut down duty on MP3 players by approximately 16% and the idea really was to create a market for it through encouraging competition. Till then one only had MP3s from Apple," explains Zutshi as a case in point. LG's Vipin Gupta admits that LG's concept of digital home, Home Net, which is still available in the market, did not take off primarily because of pricing and poor Internet infrastructure.

On the other hand both Intel and HP refrained from spelling out a time-frame for introducing their advanced technologies for digital home in the Indian market. According to an HP



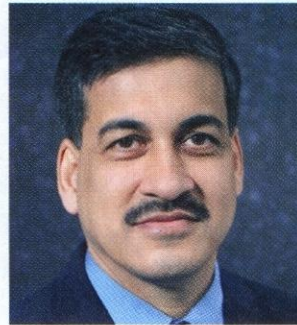
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‘Increased affordability and the growing need to stay connected, will drive growth’

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spokesperson the company is trying to get some clarity on issues like the end customer cost of digital homes. “We are close to finalizing details of digital homes, and by the end of the year we would be able to shed some light on our concept,” is the only thing he said.

Bandwidth Tangle?

So is it just a case of supply side problem or is there more to the lack of IT’s penetration at all levels in an average Indian home? While Japan boasts of a higher penetration of its automated toilet seats than PC penetration, experts suggest that India is typically struggling to get on board because of the sensitive pricing issue and the bandwidth tangle.

Senior semiconductor analyst at IDC, Ida Rose Sylvester, couldn’t agree more. According to Sylvester, “Companies that can bring their silicon expertise from carrier class network and security applications into the price-sensitive consumer space may have a competitive advantage in the market.”

While there remains no doubt that resolving pricing issues will have to be

done going forward, broadband connectivity too is a factor, which under no circumstances can be ignored. No prizes for guessing that at this point of time, digital home is more popular in countries like USA, Australia and Japan.

A research carried out by a US market research firm Parks Associates, which looked at digital living trends in 13 markets in Asia, Europe and North America, revealed that Asian tech giants Taiwan and Korea took the lead, followed by US, Canada, Japan, and Australia in the index.

The study examined the availability, adoption, and use of technology-driven products and services in each individual country. China and India ranked the last two in the index. However, despite the low ranking of China and India, they still have large digital markets in key urban areas because of their high populations, the survey noted.

Interestingly the survey also noted that within Asia, individual countries are developing distinct areas of leadership in driving the digital trend.

While India is using number of dig-

ital products, greater broadband penetration holds the key to the growth of digital homes. Perhaps what is worrying is the fact that broadband, which is a key enabler for digital home is virtually missing in India.

As per IDC, India is way behind the other Asian countries in terms of broadband penetration with less than one percent adoption. According to IDC, till 2005 the number of broadband numbers for household segment stood at a disappointing 0.7 mn.

Nevertheless, the industry observers and optimists cross their fingers as they point out that the need to stay connected is getting deeply entrenched in India, and thus that would play an important role. The household PC market along with broadband growing at 25% and 55% CAGR (2006-2010), respectively, is no doubt a positive sign.

Microsoft’s Srivastava sounds optimistic, “The technology will only grow. The trend, however, is going to be more of a requirement based house here in India,” adding that, “Connectivity is a crucial link to the growth of e-homes. The market penetration at the moment is very little, but we

know that the urban Indian lifestyle is growing and improving very rapidly, and we do see it as a great potential market, once broadband penetration further increases.”

According to IDC estimates, SEC A, which is the potential target audience for digital home constitutes 2% of the population, while it is only 7.1% of the urban population, which translates to five million homes in India. Another positive indicator is the increasing number of working females (approximately 12%) in the urban scenario.

As the working women population grows in urban areas, a need to have a comfortable lifestyle, and ‘get work’ done at home will play an important role in the adoption of the digital home concept. Also if the growth in the consumer durables market in India is any indicator, it is time we start talking about digital homes as a concept that is here to stay.

Rx: The Five C Approach

Not that the roadblocks to the digital home and pricing issues have stopped the companies from focusing on the space. To begin with, Microsoft has drawn a two-pronged strategy to promote e-homes. According to Srivastava, “Microsoft is concentrating on creating group concept centres in Delhi and Mumbai, first in order to showcase what technology has in store for people.” The company plans to scale this up to 20 cities.

Srivastava sees support coming from urban Indian households, though according to him, the penetration rate is still very low. “There still is lot of hope as we go forward,” he said adding that, “It is very important to get more and more partners excited about the concept.” Others from the industry feel that although individual digital products are selling like hotcakes, there is still a need to integrate them into a single device or sell it as a complete home solution.



It is very important to get more and more partners excited about the concept

It is perceptible that IT vendors are adopting a broad vision for their digital home strategies. One obstacle that they face will be communicating their vision to consumers—which is too complex and difficult for some consumers to comprehend. Another difficulty faced by IT vendors will be that the retail outlets for their devices tend to be restricted to IT channels, but consumers are accustomed to shopping at CE channels when purchasing devices for home entertainment.

Though the numbers for digital homes right now are no great shakes, but the five Cs are expected to do the trick—control, convenience of use, community, choice and customization, and, most essential, content... Well don't we all buy and use technology because it caters to these core values?

Digital home solution provider, Linksys, banks on support coming from the ease and convenience of use of digital products. Says Sanjeev Gupta, regional sales director, Asia Pacific, Linksys, “It slowly becomes a way of life as users experience it and enjoy it. Increased affordability and the growing need to stay connected will drive growth.”

All said and done, convenience of use of technology and efficiency of the product will remain key drivers for the growth of smart homes. So where do we really stand? Are the companies offering the right price for the products, or the right solutions. Who will decide?

Well the golden rule that “consumer is the king,” will reign here too. Are consumers open to adopting new technology? Or is it the companies who have to fit the bill by offering right solutions at a great price.

In the absence of any killer application available to consumers at a price, which fits their pocket, one has no option but to go slow hoping that the consumers will adapt to technology. Is that not what all companies are doing?

As the technology is advancing faster than consumers can absorb it or afford it, and with too many choices floating around, are we expecting too much from consumers? That's where simplifying technology—right packaging, value for money and ease of use, portability, flexibility of use, will come in to play and become the key words going forward.

When it comes to digital homes, it's the world where technology would need to adapt to people, versus people adapting to technology...

—Urvashi Kaul
 urvashik@cybermedia.co.in
 With inputs from Shailendra Gupta
 sgupta@idcindia.com
 Pratima Harigunani in Pune

www.dqindia.com

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