JURY'S SPECIAL MENTION AWARD

SHELLEY SINGH

Shelley Singh won the PoleStar Award for 2011 for his article, 'How low cost computers are used for education, livelihood', which appeared in The Ecomonic Times, dated October 2011.

Shelley Singh has been with The Economic Times for the past 7 years and is currently a Senior Assistant Editor. A veteran journalist with about 18 years of experience across magazines and newspapers, he has covered different beats ranging from personal finance to technology. He has written extensively on how corporates are changing with the deployment and use of new technologies and work practices. Shelley has also covered developments at leading technology companies, both Indian and multinational, and has analyzed the new technology that they have bet on. He was awarded the British Chevening Scholarship in 2002.

How low cost computers are used for education, livelihood

Shelley Singh

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Apuroop Sethupathy is now quite used to juggling between the HP Laptop in his bag, the iPad in his hand and an Android smart phone in his p.ocket. The 19-year old sophomore at the National Institute of Technology in Rourkela pursuing biomedical engineering uses the three gadgets for studying, entertainment and connecting with the world. They pretty much meet his needs.

Yet, he's visibly excited about the 1,750 tablet, recently launched by the government and the slew of new computing devices Asus, Samsung, HCL, Reliance and others have rolled out in the last two months. Almost all of them are available around the 10,000 price point. "They are good for a web based lifestyle," he says. Sonali Garg, 19, a Chandigarh based Commerce student who shares a laptop with two other siblings is also eyeing these new devices. "We can buy tablets with saved up pocket money," she says. At far away Agartala, 20-year-old Bishnesh Das fancies them too.

"These gadgets will do to computing what sub 3,000 phones did to mobile communications," he says. Similar attempts at building low cost computers undertaken about five to seven years ago flopped here. Remember India's own Simputer? Or Nicholoas Negroponte's One Laptop Per Child (OLPC) project? Intel, the world's largest chipmaker flew in anthropologists to create a device that's not only light on the pocket, but rugged enough to be used in the hinterland. In 2005 AMD joined hands with HCL to launch a 10,000 PC. The devices were low on cost and high on promise, but they failed to get buyers. The devices were minimalistic (low on memory, hard disk, RAM, processing speeds) and didn't offer internet connectivity.

They failed. So why should things be any different this time around? Seven years later, the devices available now come with better technology and performance. Not only are they lowcost, but they also offer more value for every rupee paid. But more than that, what's changed the equation now is a whole bunch of new applications, software, content and delivery methods that are now enabling consumers to do what they earlier couldn't - put the devices to good use for education, livelihood and entertainment. It took the country three decades after the first PC was launched to get to an installed base of about 50 million computers. The next 50 million devices could get added in only 3-4 years if the new wave of applications and content marry well with the new low-cost devices. Even then, India with a base of 50 million personal computers now would lag behind China (300 million) and the US (394 million). There is still plenty for room to grow.

THE APPLICATIONS WAVE

Netbooks for text books - that's the switch technology training company NIIT has done in the last six months for all students in its premier GNIIT course. In the next six months it will migrate all its courseware onto netbooks and tablets. "Students won't carry books, but tablets to class," says Vijay Thadani, CEO, NIIT. NIIT has also invested 200 man-years of work generating digital content for the curriculum for classes 4 to 12. Says Thadani: "The devices add richness to static content. For instance, Rani Ki Jhansi can come alive on tablets via video. Graphs will be more dynamic. There's a tremendous opportunity to create a revolution with tablets.

"NIIT courseware is available in 14 languages. Educomp, another education services provider, also plans to migrate course content to tablets. About 500 people are working on converting its content into digital formats. It already uses a combination of projectors and electronic white boards to deliver classes in 7,200 schools across the country. "Now, we will give each student a tablet," says Shantanu Prakash, founder-CEO, Educomp Solutions. School students, even from poorer sections, could be big consumers of low-cost tablets.

The government is offering DataWind's Aakash, a 7-inch tablet, to students at a subsidised price of 1,750. "Specs of Aakash look ok for use by students," says Prakash. Subho Ray, president, Internet and Mobile Association of India (IAMAI) says that the device will catalyse the market if it finds its way into 5-6 lakh schools. "There was a vision earlier, but low cost computers were never given away to target communities. At least now the government is giving away the tablets to students to try out," he says.

Its not just schools, but tablets could make a difference to India's farm lands too. S Sivakumar, chief executive, agri business, says crop management advice can be personalized to individual farmers, if they can video or photo shoot the field conditions and transmit to experts via tablets. "Through use of video/photo

transmission, price negotiation process can be instant and more effective. Order aggregation for farm inputs will help in streamlining logistics and reduce costs," he adds. Mass adoption, says Tuli of Datawind, will happen when such devices help users generate business. "Today a phone is a commerce tool for all segments of users. Same will happen with computers. When mobile phones hit the market no one thought your neighbourhood small merchant or a rickshaw puller will buy them. Today they all do."

LOW COST GAME

More applications and content will make low-cost computing more relevant to consumers. But cost is crucial too. Many expect Mukesh Ambani to be a game changer. ET recently reported that Reliance Industries will unveil a new range of 4G-enabled tablets at 3,000. Such a price point would have been ridiculously low even one year ago. But prices of components like the hard disk, RAM etc have come down enabling manufacturers to come out with innovative offerings. Says NIIT's Thadani: "The real breakthrough has come from Moore's Law: processor power doubles every 18 months and costs come down. There's more power packed in each new generation of computers." Alok Bharadwaj, the president of Manufacturers Association of Information Technology (MAIT) attributes low cost computers to economies of scale and an average decline of 15% a year in component prices.

Adds Apratim Sharma, country product manager, Asus India: "We observe 15-20 % yearly drop in cost of same hardware'. You can get a hard disk that went into high end laptops 2-3 years back at lower costs in netbooks or tablets now, he adds. Asus just launched a 10 inch net book at 9,999 with a 250 GB hard disk, 1GB RAM, web cam, WiFi and Bluetooth. "Three years ago a similar device would have cost double," he adds. NIIT's Thadani still remembers the first PC they bought back in the 1990s. It cost 1.5 lakh. It had 10 MB hard disk and 5 MB RAM. "Now, you get a far more richer device for less than 10,000," he adds. Last week HCL Infosystems launched a 10,490 tablet complete with a touch screen, 1 Ghz processor, 2 MP camera and 512 MB storage.

Says Harsh Chitale, its CEO: "Now, with more value at lower costs computing in India will take off in the next 12-18 months. Tablets could do to computing what sub- 5,000 phones did to telecom." Computer penetration in India is very low and tablets account for just 2% of PC sales. "Once you have a device priced at six to eight weeks of annual income, computer adoption will take off," says Prashanth Adiraju, director, new platform business group, Intel Technology India. "We are at that stage now." He believes that 90 million households in India can now afford buy a computer with less than a month's income. Ten thousand rupees is emerging as the new price point for netbooks.

But tablets are becoming available at even lower costs. A typical low cost tablet would come with a 7 or 10 inch touch screen, a free operating system, fast processors, graphic cards and internet connectivity. Datawind, a Canada based company that launched the $35 (about 1,750) Aakash tablet (subsidised by the government for students), says the actual cost is $49. Datawind has been able to get it at this price point due to cheaper hardware and free OS, Google's Android 2.2. Google gives the OS free and makes money via user downloads.

Says Suneet Singh Tuli, CEO, Datawind: "Prices have come down due to open processor architecture. Earlier it was an Intel-AMD monopoly." At present the screen is the most expensive part-about 22-25 % of the cost. Though costs may not decline further, performance could improve a lot more. "It's like a 100 meter race. After hitting these levels ($35) there's very little room for further price cuts," says Rachna Nath, executive director, PricewaterhouseCoopers (PwC). "But each new version will come with better hardware at similar or lower costs." Adds ITC's Sivakumar: "Functionality of today's devices is far superior to the options available earlier." And this will only get better. "Telecom backbone is also more evolved today."

NUMBERS BUILDING UP

About 9.3 million computing devices were sold in India in FY11, according to MAIT. While desktop sales are growing just 10%, Net book sales are growing at 100% this year. Tablet sales have really started only this financial year, and already more than 100,000 units have been sold so far. "We expect the fastest growth in the smaller devices," says Bharadwaj.

HCL expects that the market shore of low cost netbooks and tablets will grow from two per cent of all PCs sold to 30%-40 % of total computer sales in just a couple of years. Such devices are invariably the best selling tablet in the portfolio of any company. Samsung N100, a 12,000 net book launched on August 15, is the company's `rock star' product. About a third of the N100 sales are in small towns like Patiala and Nagpur. Ecommerce is also helping push sales of computers in smaller towns. For example, about half of the sales of online retailers come from remote locations where customers.

Two problems remain. First, these devices should not only be cheap, but also useful. That means a whole bunch of locally relevant applications needs to be built in order to improve the utility of such devices. "There's an expectation that all people are literate to use a computer. Tablets will definitely add mobility, but are there relevant programs or native language applications?" quips Jesse Paul, CEO, Paul Writer, a marketing advisory firm.

Paul says that unless such devices help a taxi driver make a booking it won't be too relevant for him. Or can a small merchant

do accounting on it? She points out that application developers don't come from a bottom of pyramid background. Hence, they may not quite know what will work for the masses. Adds Sivakumar of ITC, which is experimenting with tablet applications for farmers: "Because of lower education levels and poor infrastructure (for mass roll out) these devices need features like multimedia, video and photo shoot and transmission, battery time and ruggedness.

An eco-system that supports solutions will help in adopting computers." Education, where industry sources expect high demand for low-cost devices, will be a big testing ground. "They (low-cost tablets) will benefit only a small percentage of overall schooling in the country -- only 4-5 % of 1.5 million schools," says Anurag Behar, CEO, Azim Premji Foundation. "For mass education computers are irrelevant, unaffordable and unusable."

The Premji Foundation works in teacher training and developing curriculum and impacts 2.5 million children. It developed school course in 175 CDs in 15 languages between 2002 and 2007. About 25,000 schools in 10 states use this. However the foundation has discontinued converting courseware to digital formats. "The process of learning does not happen via computer but via good teachers. But computers can be great for teacher education and adult education," says Behar.

Second, manufacturers earn profit margins of only 3%-4 % from the computers they make. It is even lower (2-3 %) for low cost devices. "Companies will need massive volumes to sustain. Only companies with nationwide sales and services play might succeed," says Vishal Tripathi, senior research analyst, Gartner India. While R&D has worked hard to get all frills computers at low costs, some of the business and user models might take longer to emerge. Mass computing may not happen in a jiffy, but users are closer to it than five years back.