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April 2009 Edition

IPTV shows Promise in India but needs QoS Enhancement

IPTV services are gaining momentum. Looking ahead, IPTV shows long-term promise in India, helped by the presence of established players in the country.

Offered either on a standalone basis or bundled with other telecom products, IPTV services are experiencing noteworthy expansion across the world. Globally, the IPTV phenomenon has gained immense popularity. According to Infonetics Research, worldwide IPTV service revenue will skyrocket to over \$44 billion in 2009. It also notes that while subscriber growth is strong in all regions, Asia Pacific is leading the way, thanks to faster forms of DSL like VDSL and ADSL2/2+, which are stimulating subscriber growth.



Vijay Yadav
 Managing Director - South Asia, UTStarcom,

The Ministry of Information and Broadcasting took a decision in August 2008 approving IPTV Services in India. The potential for providing digital television services over broadband IP connections is huge. However, the key issue is having adequate and ubiquitous broadband infrastructure to support the delivery of such services.

The minimum broadband connection to each subscriber home to support standard definition IPTV services is approximately 5 to 10 Mbps. For HD IPTV services, the minimum broadband pipe jumps to 20 to 50 Mbps. Just getting stable broadband connectivity to subscribers at these speeds, let alone delivering IP-based television content over these connections, is a major challenge for service providers.

In India, as per IDC, the number of subscribers is expected to reach 966,000 subscribers by 2011 at a CAGR of 156.8%. IDC expects 15.9% of all the residential broadband subscribers in India to use IPTV by the end of 2011. "India has around 65 million cable and satellite homes. If even 10% take up IPTV, we are talking about 6.5 million homes and this is outside of the enterprise uptake," says Chandan Mendiratta, Vice-President, Service Provider - System Engineering, Cisco India & SAARC.

"IPTV has a great potential in the Indian market, especially with the advent of 3G. The increasing number of TV sets or personal computers in each home has made it necessary to switch over to IPTV which is now much more than mere entertainment. It can provide Internet Data Services, telephony, e-governance, and video streaming. Hence, its demand has been increasing steadily," opines Chandan Mendiratta, Vice- President, Service Provider - System Engineering, Cisco India & SAARC.

3G will enable operators to provide greater speed and better video quality which will

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provide an impetus to IPTV services. Cisco, on its part, has an end-to-end portfolio of intelligent IPTV products, through which we help service providers increase access to IPTV.

"In India, IPTV offers a great scope with growth in broadband subscribers and explosive increase in video surfing," says Nikhil Jain, COO & Director, Elitecore Technologies Ltd.

"Initially, the start was slow due to lack of awareness and myths like IPTV is complex to handle. Technically, IPTV is more sound than DTH. India has more than 115 million TV households, out of which less than 10 million use DTH platform, so there is definitely a lot of potential for IPTV in the Indian market," says Namrata Sengupta, DGM, Aksh Optifibre.

"Although IPTV market has still not been tested to its strength in India, but it is expected to grow by leaps and bounds by 2011," says Bhaskar Trivedi, Program Manager/Coach – Embedded Division, eInfochips.

But over the last few years, we have seen a lot of change and growth on the television landscape – the rise of digital cable, the growth of satellite service has left a mark in the way television is viewed. Internet Protocol Television (IPTV) has also been introduced in India and would have the telecom players providing it.

In India, IPTV will provide more economic means by which TV can be delivered to subscribers – ultimately at a lower cost over traditional alternatives such as cable and satellite. It also enables much greater interactivity, more content choices and easier bundling of services.

"Besides bringing in a new form of entertainment, IPTV can play a very important role as an economic growth engine by providing live broadcast of lectures and tutorials to the rural parts of the country," says Sudarshan Boosupalli, Country Head, Ruckus Wireless, India.

Advantages of IPTV

IPTV delivery offers Telcos some advantages over well-entrenched cable and satellite TV providers. "Unlike cable TV, IPTV allows people to do a number of things. They can watch movies, play games, make telephone calls, work on a computer and many more things, which are not possible on other platforms. In addition to these, in future, one can do online shopping, e-learning and e-banking. These things have already been accepted and used by Internet and mobile users, and once IPTV will capture the market, it will be widely accepted by one and all," says Bhaskar.

IPTV will bring services not yet delivered such as on-demand video content, network-based DVRs, where the content is potentially stored on the network and streamed to the device wherever it might be. The so-called "long tail content" will be readily available to consumers.

In addition, the content which is typically available in streaming media format on the Internet will be available for viewing on the television. IPTV will also bring the integration of video streaming with conferencing capability, and interactive TV applications which will provide users with a much richer experience than they get today.

Content will be interactive, with a clicking functionality, offering the viewer added features that will bring a differentiated experience for end-users.

IPTV provides digital quality at cost-effective pricing to the subscribers. While DTH or CAS service providers are strategizing to go digital and would be quite



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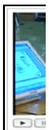
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challenging for them to reach Aksh Optifibre IPTV iControl's nominal prices. IPTV is traditional TV-quality programming transported over an IP network to a regular television set IPTV. Subscribers can look forward to bundled services which are not available on normal TV network like video on demand where the subscriber pays as per views and not on a flat fee basis, broadband, TV channels, time-shifted TV, real-time reality shows that give results of voting in real time and videoconferencing. They can subscribe for services on-demand, be better informed about their choice of programmes through Electronic Programme Guides that would be available to them, get rich content on IPTV, subscribe and pay only for things that they want. They could shop online; download content such as songs, ringtones, movies and the like. They would also have multiple recharge options. The benefits could go on and on but in a nutshell, they would have better value for their money.

From the consumer's perspective, IPTV will allow the user to experience digital quality television with the added advantage of being a "pay per view" – service. Consumers can expect services such as Video on Demand, Video Conferencing and Interactive TV – pause, fast forward and rewind live TV or recorded content stored on the service provider's remote servers. Therefore, all three parameters of comfort, cost and quality will be taken care of.

With the broadband penetration gaining momentum, IPTV is set for a boom in India and is expected to be available in around 30 cities in the next 18–20 months. The subscribers of IPTV range from residential users to government bodies to entertainment industry. IPTV is currently commercially available in Pune, Mumbai, Bangalore and Kolkata and is now showing signs of gaining traction in the Indian market.

"Our main customers are the cable service providers which are undergoing transitioning to complete digitization of their infrastructure, there are quite a few telecom service providers as well with whom we work closely on their IPTV infrastructure as the networks become very critical and needs to build QoS rich and resilient backbones," Chandan Mendiratta.

iControl IPTV is watched by MTNL subscribers in Delhi and Mumbai. It is also enjoyed by BSNL subscribers in 20 cities of North India, i.e. in Rajasthan, Punjab, Haryana, Jammu, etc.

Cisco

Cisco Services for IPTV help service providers efficiently launch IPTV services while mitigating risk and providing service assurance. They help them in providing end-consumers with a complete IPTV experience.

The services can be categorized as a) Preparatory Services, b) Planning, Designing and Implementation, and c) Services Optimization.

Preparatory Services:

- Video Readiness Assessment – The video readiness assessment (VRA) service systematically assesses and benchmarks the IP network to identify gaps between the SPs' existing infrastructure and IPTV requirements.
- Operational Assessment – To effectively deploy a scalable video solution, service providers should understand how the installation will affect business processes and subscriber interactions before making significant investments. The operational assessment identifies gaps early in the video launch process by providing a systematic, operational review of the business processes related to customer acquisition, order fulfilment, service assurance, retention, and non-pay disconnect.
- Signal Survey – The signal survey helps SPs determine prior to implementation whether the location of their proposed antenna farm will provide the best possible reception for video service delivery. The survey includes a detailed signal and

interference report for all off-air, digital television, and satellite signals, as well as a recommended site configuration.

- Site Survey – The site survey determines the suitability of the proposed headend building and identifies required facility modifications. The site survey report includes a detailed floor plan; power plus heating, ventilation, and air-conditioning (HVAC) requirements; and access and egress requirements.

Planning, Designing and Implementation:

- Solution Requirements Workshop – The Solution Requirements Workshop (SRW) is a joint activity led by Cisco to systematically collect end-to-end solution requirements and reconcile that information across multiple stakeholders. This creates a common understanding of the project scope across organizations, designers, equipment providers, and system integrators and helps align the system architecture with business requirements.

- Planning and Design Workshop – The Planning and Design Workshop (PDW) is a step-by-step process to design the network using the SRD, as well as information such as system architecture and topology, availability and security requirements, the current network environment, and the site survey. The deliverable is a high-level design (HLD) document created with templates and other resources that take advantage of Cisco's accumulated experience with the end-to-end IPTV infrastructure and with each subsystem.

- Proof of Concept – The proof-of-concept (POC) lab lets SPs cost-effectively assess a proposed architecture with specific subsystems and product choices in the flexible, controlled environment of Cisco IP Next-Generation Network (IP NGN) Experience Centres. This lab environment accommodates typical design scenarios that include third-party equipment. Evaluating the robustness of an end-to-end IPTV design in a Cisco IP NGN Experience Centre can accelerate a successful IPTV deployment with a small initial investment.

- Integration Services – Cisco integration services combine the IPTV methodologies of Cisco and Scientific Atlanta with proven processes and industry practices to effectively integrate IPTV systems. Based on a SPs in-house expertise, they can select subsystem integration or end-to-end system integration services.

Services Optimization:

- Video Quality Monitoring – Video quality monitoring lets SPs monitor video streams and quickly identify and resolve problems concerning video quality or the end-to-end IP network. This service uses Cisco Multicast Manager and network-based probes to measure video metrics. The metrics are based on industry standards such as the media delivery index (MDI). The IPTV solution requires an understanding of multicast, network flow behaviour, Cisco Multicast Manager, probe placement methodology, and MDI-based alarm thresholds. Cisco Services are available to help SPs in these areas.

- SP Base – Cisco SP Base Service complements an SP's internal resources with the expertise they need to maintain network availability. This service can also reduce risks for systems running mission-critical applications.

- Software Application Support – Cisco Software Application Support (SAS) includes the following services:

- Minor and maintenance application releases
 - Timely resolution of technical issues with 24-hour access to support
 - Access to the Cisco.com knowledge base to build in-house expertise
- Cisco Software Application Support plus Upgrades (SASU) includes all SAS support services plus major application upgrades.

eInfochips

In the vertical of IPTV, eInfochips has services and solutions offering for all stages of Video broadcast chain, i.e. Creation, Transmission, Distribution, Testing, and Consumption. eInfochips is working with many global players in the value chain of IPTV which includes semiconductor companies, equipment manufacturer both for broadcasting and customer node.

eInfochips has design expertise of STB (set-top box), DVR/PVR, transcoding, automated solution for video quality verifications, AV container libraries, real-time content streaming stack, etc.

eInfochips recently announced availability of H.264 HD AVC and H.264 SVC and also launched High-definition (HD) reference board design based on Texas Instruments' DaVinci media processor last year. This will reduce TTM (time to market) for system/product manufactures and designers for HD-based solution.

Aksh Optifibre Ltd.

Aksh Optifibre Ltd. provides iControl IPTV and Pigeon VoIP (Voice over Internet Protocol) services. Aksh was also the first to prove the concept of Fibre to the Home (FTTH) and has established a pilot project in Dwarka. Once this gets implemented, it will provide High Definition and Multiplay services to the customers. As a matter of fact, the company is also the third-largest manufacturer of fibre in the world and has the largest plant in India.

Aksh Optifibre is the pioneer in IPTV technology and enjoys highest subscriber base in this industry with MTNL and BSNL. These PSUs enjoy the last-mile connectivity factor over the other players entering this space and hence there is no question of other players entering this segment and posing a threat. There is enough for everyone in this segment. Airtel is the new entrant in this segment, while Reliance and some other companies have delayed their launch for the time being. Currently, we have signed a contract with MTNL for two cities, namely, Delhi and Mumbai and also signed with BSNL for 20 northern cities. "We are also hoping to get the contract extended for 60 cities with BSNL soon," says Namrata.

Ruckus Wireless

Ruckus Wireless provides in-home equipment that enables television to receive IPTV without having to connect TVs to any cabling. This equipment is sold to broadband providers who bundle it with their service and offer it as a package to consumers. Our systems give consumers complete freedom to place their TVs anywhere within the home without being constrained by cabling.

Ruckus Wireless has a team with a number of national carriers around the world such as Belgacom, Deutsche Telekom, SwissCom, Telekom Austria, SingTel, Telefonica del Sur, PCCW in Hong Kong and many others. India is an emerging market for Ruckus Wireless and represents a significant new opportunity as the broadband infrastructure is built out.

UTStarcom

Besides being a leader in IPTV in China, UTStarcom is also India's leading provider of IPTV and broadband infrastructure in terms of scope of deployments and total commercially-deployed subscriber lines. For the last three years, we have taken various steps to promote growth and acceptance of IPTV in the country.

UTStarcom enables service providers to further monetize their existing broadband infrastructure by offering IPTV and complementary value-added services that can be bundled with existing voice and data services to improve ARPU and reduce overall churn. UTStarcom's RollingStream end-to-end IPTV system can be integrated into existing broadband networks to serve as the delivery platform for revenue-generating applications such as IP video surveillance, video conferencing, distance

learning, digital signage, interactive voting, hospitality applications, and advanced advertising.

As of year-end 2008, UTStarcom's RollingStream end-to-end IPTV system supported more than 1.27 million live IPTV subscribers globally and had a total live system capacity of more than 2.5 million subscribers. UTStarcom has announced IPTV deployments in India with Bharti Airtel, BSNL/Aksh, MTNL/Aksh and United Telecoms Limited, in Sri Lanka with SLT, in Japan with Softbank, in Latin America with Brasil Telecom and in Taiwan with Markwell.

Aksh iControl, India's first Internet Protocol TV (IPTV) service, built on the end-to-end RollingStream IPTV solution framework provided by UTStarcom, and being offered through BSNL and MTNL, allows end-users to pause, rewind and fast-forward, as well as record, live TV. However, in order to differentiate itself from other video services available in India – or even in other global markets – this interactive IPTV offering will enable subscribers to message and talk with one another live through video communications tools on their television, as well as interact live with their favourite shows through polling and karaoke. iControl also offers a time shift feature that allows viewers the ability to view missed programming that was aired in the past seven days. The Video-on-Demand feature brings a library of more than 200 Hollywood, Bollywood and regional content by pressing only a few buttons on the TV remote. With another feature, CAS allows users to subscribe and de-subscribe a certain TV Channel or Channel group using just your TV remote and TV without any need of calling a call centre or suffering a long IVR delay or filling a form for the selection of channels. A-Tube is India's first innovative video yellow pages, which provides a variety of information ranging from lifestyle to video résumés. A-Shop is the viewers' outlet to buy and sell various products in a virtual marketplace. Similarly, Bharti Airtel is also providing a lot of value-added and innovative services on its IPTV platform. The company has launched its IPTV services in Delhi NCR region with a tariff plans of Rs.999 a month and Rs.599, under which the company is providing 100+ channels, a 256 kbps speed Internet connection as well as a landline.

Present Scenario

Initially, the medium of entertainment was restricted to the usual Cable operators with limited content and low pricing. But the changing technological scenario and the digitization of broadcast industry has brought a wave of change in the entertainment sector. Customers are demanding more value added-content, with digital quality at cost-effective pricing. IPTV faced a slow start as people were not aware about this new experience of watching television. Over a few months, it has spread to the other cities/ states and is now gaining momentum.

IPTV is also growing in popularity in the urban and rural areas due to the content and pricing. IPTV is now attracting more private entrants in the space.

"Presently, the market for IPTV in India is at a nascent stage, with only a handful of operators having their presence. Also in India, we have lesser percentage of Internet users compared to the other developed countries across the globe. At present, India has just 9,000 subscribers for IPTV, but India is expected to be the fifth-largest IPTV market by the year 2011 in the APAC region," says Bhaskar Trivedi.

According to Frost and Sullivan, the Asia-Pacific region is likely to have over 27 million IPTV subscribers by 2013, with China and India being the high-growth markets.

The IPTV adoption in India has been somewhat sluggish in the past, but we believe it will pick up this year onwards. Initially, any new technology takes time to reach its "point of inflection", after which it starts growing at a much faster rate. Even

broadband adoption in India was very slow initially, but since 2007-end, it has really picked up steam. In case of IPTV, with the government now giving go-ahead to broadcasters to share their channels with IPTV providers, the deployment of Internet Protocol Television is all set to revolutionize and enhance television viewing experience in India. The slow but steady growth is already visible – we have observed more announcements on IPTV launches in the last few months than in the last few years.

Finally...

However, to make IPTV more popular, the service providers should lay stress on the quality of services and strengthen the customer care department, which is in a very poor state at present. The TV watching experience should be uninterrupted and smooth one, which for IPTV is like surfing Internet in a PC as of now.