RNI registration MAHENG/2009/33418. Postal Regn No. MH/MR/N/99/MBI/09-11. Posted at Patrika Channel Sorting Office, G.P.O., Mumbai 400001 on due date 5th & 6th of every month. Date of publishing on 2nd & 3rd of every month.

digitalstudio

BROADCASTING AND PRODUCTION IN INDIA

An ITP Publishing India Publication

Vol. 3 | Issue 9 | September 2011 | ₹50

CAM CONNECTIVITY
How to get most out of your camera connection

THE REAL McCOY
Singham revives action films of yore using riveting VFX

WHAT'S IN STORE?
Data deluge in M&E biz throws up innovative storage solutions

Screen Saver

UFO Moviez's Sanjay Gaikwad plugs leaks in film exhibition business

IBC 2011 Preview

• Indian M&E sector to touch ₹ 1,199 Bn by 2015 • India crosses 100 Mn pay-TV homes • Crest Animation inks $220 Mn JV with Reel FX

IN BRIEF

GOVT OKAYS FDI OF WALT DISNEY AND DISH TV

The government last month approved cleared Walt Disney's Foreign Direct Investment proposal to set up a subsidiary with 100 per cent foreign equity for production of family entertainment. This approval allows Walt Disney to start the activity of broadcasting and down linking in India. The company would inwest ₹50 crores worth FDI in its subsidiary in India. DTH platform, Dish TV also proposed to transfer shares to carry out the business of telecommunication equipment and provide management and marketing of its 'Agrani' services in the area of mobile satellite communications, to which the FIPB has agreed too. This was among the 44 FDI proposals worth ₹180 crores recommended by the FIPB, which also included several other media companies.

EROS INTL'S Q1 PAT UP 60.3 PC TO ₹23 CR

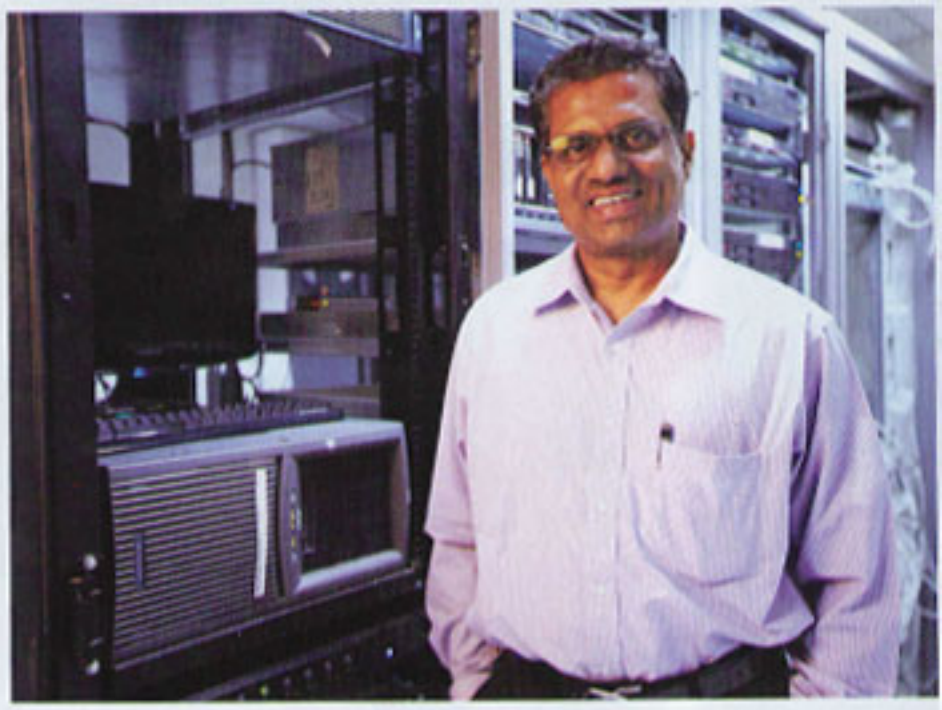
Eros International Media has posted a consolidated net profit of ₹23.33 crore for the three-month period ended June, 2011, which is up 60.3 per cent as compared to ₹14.55 crore in the corresponding quarter of the previous fiscal. The company's total income was up 26.8 per cent to ₹162 crore as compared to ₹128 crore in the previous year. EBITA increased by 47.4 per cent to ₹36.92 crore as compared to ₹25.05 crore in the previous year. In Q1 FY2012, Eros released a total of 19 films across languages and genres, which includes seven Hindi and 12 Tamil films. The company's revenues during the quarter were mainly driven by theatrical success of its movies; strong contribution from catalogue portfolio; stable revenues from VFX facility; and new media.

UFO TO MIGRATE FROM MPEG-4 TO H.264

UFO Moviez, the world's largest satellite-based digital cinema network, is in the process of migrating its media infrastructure from MPEG-4 to H.264 standard. The move will allow the company to provide better video quality at substantially lower bit rates than the previous standard.

The H.264 belongs to the same family of MPEG-4, a standard used to compress audio and visual data. It contains multi-picture and inter-picture prediction, besides features such as using previously-encoded pictures as references and allowing up to 32 reference pictures to be used sometimes.

"With this new standard, the same set-top box can play stored as well as live content for both 2D and 3D formats," Sanjay Chavan, Chief Technology Officer of UFO Moviez told *Digital Studio*, while adding that the company had tested H.264 for playing back content at theatres during the Indian Premier League matches of 2010.



Sanjay Chavan, Chief Technology Officer, UFO Moviez India Ltd

The company is presently testing the encryption compatibility of the standard. It has already tested the playback on H.264, and it has successfully started encoding in the new standard.

H.264 standard belongs to the same standard as MPEG-4 and is also referred to as MPEG-4 Part 10 or Advance Video Coding (AVC). It is jointly maintained with MPEG so that they have identical technical content.

"What we are presently using is MPEG-4 Part 2. So we will have to make changes at every level from the central site to the head-end site. The encoding would be different, and the encryption should be compatible. The playback should be such that it can decode the H.264. Hopefully we should be able to migrate by this year end," said Chavan.

INDIA CROSSES 100 MILLION PAY-TV HOMES: STUDY

Pay-TV is now consumed by over 100 million households in India – 70 per cent of the homes in the vast south Asian nation, according to a new report from Digital TV Research.

According to the report, India's appetite for premium content is still growing, with 139 million paid for subscriptions expected by 2016, equating to revenues of US$8 million, so average revenues per unit (ARPUs) will remain low.

While cable and analogue will continue to dominate India's television landscape, internet protocol TV (IPTV) is on the rise thanks to investment in broadband, and the country should register 8.7 million IPTV subscribers within five years.

Direct to home (DTH) satellite TV households are forecast to reach 47 million by 2016, up from 30 million at the end of 2010. As ARPUs increase, Digital TV Research expects DTH revenues to reach $3.4 billion in five years.

While large, these figures are still eclipsed by those hooked into India's expansive cable TV networ Over the coming five years, digital conversion will step up a pace, although most Indian homes (51 million) will remain with analogue cable services. However 32 millior homes will receive digital cable T services come 2016.

In total, the report suggests India will register 111 million subscribers of digitally-delivered pay-TV come 2016 – be that by cable, DTH or IPTV.

UFO Moviez's Sanjay Gaikwad plugs leaks in film exhibition business

By Nirmal Menon

A phone call to a theatre in the gateway of Thar desert on a sleepy afternoon tells the tale of UFO movies, the world's largest satellite-based digital cinema network. Shyam Chavigrah, a small-town cinema hall in Churu district of Rajasthan, is abuzz with people queuing for the next show of popular Bollywood film *Zindagi Na Milegi Dobara*. While the show hasn't met the expectation of the owner of theatre, his voice exudes the confidence of a new-age entrepreneur.

"The collections of *Zindagi Na Milegi Dobara* haven't been encouraging, but we hope to cover up the shortfall with *Bodyguard* slated to release next week," says Sanjay Agarwal, the second-generation owner of Shyam Chavigrah, a theatre established way back in 1968.

Shyam Chavigrah joined the UFO movies network in February 2007. The move was a radical one because Agarwal had to entirely refurbish the theatre and convert the erstwhile 730-seater hall to a plush, air-conditioned, digital cinema hall, hosting 370 seats. In the last four years, Agarwal increased his average ticket price from Rs 13 to Rs 60, but that hasn't really dented his business.

"People here are now getting acquainted to multiplex culture, so they come in groups for a movie," says Agarwal, while adding that the only sad part about the whole transition was dumping the Westex film projector that he was using since the theatre started in 1970.

Agarwal was one of the early adopters of digital cinema projection not because of his penchant for technology. He was one among thousands of cinema hall owners in C- and D-class towns, who would get the film print four weeks after the release of a movie. By that time of course the locals would have seen the movie on pirated DVDs.

But his fortunes changed after installing the digital cinema projection. UFO Moviez, founded by Valuable Group in 2005, presently has about 2,500 2D and 100 3D technology screens. It is the single largest networked digital cinema (via satellite) company with a base outside the metros accounting for several single screen theatres in 1,200 cities, which have got a fresh lease of life.

"For me the concept of digital cinema was incomplete without satellite delivery. In a country as vast as ours, satellite delivery was the only way to build up a scalable model. Also, film prints were just reaching 100 towns at best. To reach 1,200 towns and cities, satellite delivery was the only way out," says Sanjaj Gaikwad, Managing Director, UFO Moviez India Ltd.

THE BIG IDEA

For a technology that had no precedent, hosting a nationwide release of the first day first show of any movie over a satellite was an uphill task, but not impossible. After carefully studying market realities, the company created an end-to-end digital cinema solution, which revolutionised the film distribution and exhibition business.

The solution goes through four stages before finally being screened at the theatre. The telecine stage deals with converting the print into a high definition standard on a D5 magnetic media tape. The telecine process is presently being done at Prime Focus, a leading post production house.

After the telecine process, the tape is sent to capture stations for conversion into a MOV file, using a Bluefish card. The file is now anywhere between 1.5 and 2.5 TB is size. In the second stage, the file is compressed in an iVast encoder and the output is an MPEG-4 format, which is of about 8-12 GB in size.

iVast was an encoder developed by DG2L, a company acquired by UFO Moviez in September 2006.

"After the DG2L buyout, we added features of editing into the encoder. So the encoded file could be edited. We could also introduce text into the encoded file if required," says Nitin Mohani, Assistant Vice President – Technical, UFO Moviez.

In the third stage, the film gets encrypted frame by frame on a cine processor and is stored on an NFS (Network File System) server. The encryption standard for the file is 192-bit AES, which is reasonably higher than the 128-bit AES followed by competing Digital Cinema Initiatives (DCI), a standard architecture devised by seven top Hollywood studios, which included the likes of Metro-Goldwyn-Mayer, Paramount Pictures, 20th Century Fox, Universal Studios etc. From the NFS server, the print is remotely delivered to the cinecaster at the satellite hub station located in Gurgaon over a 20 Mbps link, which is the fourth stage.

"The MPEG file is encrypted in to an EPS file. This EPS file goes to our external server room, which is connected to Gurgaon hub, so typically a 8-12 GB of file will take 2-3 hours real time to transfer from the server room here to Gurgaon," points out Mohani.

The movie is transferred from the NFS server to the Cinecaster, and theatres can then download the movie over a secure VSAT link. At the reception end, a typical theatre has a one-way dish and a two-way dish. One-way dish is used for downloading of content, and two-way dish is used to sending data logs such as ticket sales, occupancy of the show back to the server.

The satellite and bandwidth services are provided by Hughes Communications India Limited (HCIL), a subsidiary of Hughes Communications Inc. HCI has a global market share of 55 per cent in VSAT industry, and is a leading supplier of broadband satellite and wireless products, services and networks. "The link from hub to remote is 12 Mbps and from remote to hub it is 1 Mbps because you are not uploading much from remote to central site," adds Mohani.

At theatre end there is a dual projection setup for 3D projection along with a playback server, 3D format converter, passive polarised filters, silver screen, and 3D goggles. A movie processed in stereoscopic format is played back from the server, and the video out of the server is connected to a 3D format converter, which is further sent to the 3D projectors.

Depending upon the screen size of the theatre and luminous intensity required, UFO Moviez installs different varieties of projectors: DW 7000, a 6,000 lumens projector; Morpheus, a projector ranging from 7,000 to 8,000 lumens; and DW 100 offers 10,000 lumens projection. While the DW series are manufactured by Panasonic, Morpheus is a Digital Projection brand.

"Film prints were just reaching 100 towns at best. To reach 1,200 towns and cities, satellite delivery was the only way out"

Sanjay Gaikwad, Managing Director, UFO Moviez

"Even on Thursday night, if I get a message that this theatre has been added to the list of my release chain, I offer them content"

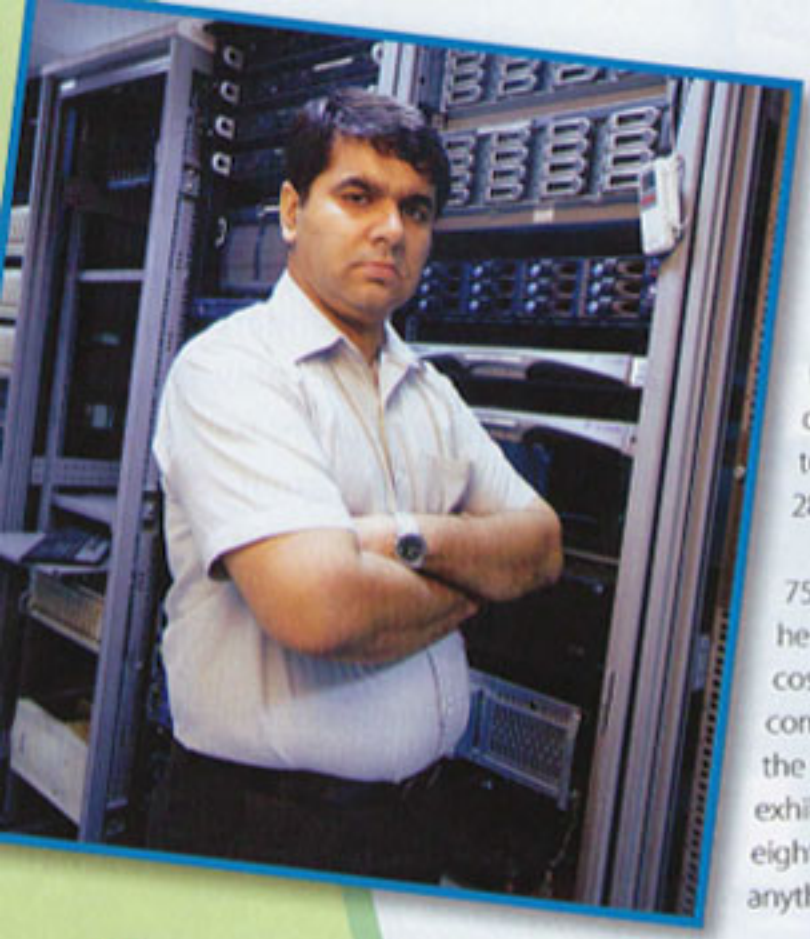
Rajesh Mishra, CEO - India, UFO Moviez

BUSINESS SENSE IN TECHNOLOGY

The beauty of the whole mechanism is that frees producers and distributors from the hassles of making a print and sending it across the theatres, thereby offering absolute control in their hands. So typically what UFO Moviez does is whenever a film is about to be released, it gets the film in advance and encodes it.

"If it's a Marathi film, then the Marathi theatres are targeted. If it's a Hindi film, then Hindi theatres are targeted. Till Thursday or sometimes even on Friday people keep striking deals. Even on Thursday night, if I get a message that this theatre has been added to the list of my release chain, I offer them content; it's only a matter of issuing a license," says Rajesh Mishra, CEO – India operations, UFO Moviez.

The company works on a business mode where it charges the distributor on per show basis. So if a distributor commits 400 theatres for a film and the day before the release of the film sends a release order for 375 theatres, the company issues license only for the 375 theatres. Once the license



> "After the DG2L buyout, we added features of editing into our encoder"
>
> **Nitin Mohani**, AVP - Technical, UFO Moviez

is issued, the exhibitor can download the movie into his theatre using a smart card provided by the company.

For exhibitors, the company charges a refundable deposit of Rs 2,00,000 for the equipment provided, besides levying an average monthly rent of about Rs 12,500 and a fee of Rs 360 per show. This Rs 12,500 includes cost of depreciation, the interest cost, maintenance cost, and the warranty.

The math also suggests a win-win situation for the company and the distributor. If the film print cost is Rs 50,000 and a distributor wants to release it in a cinema, he would want to recover at least Rs 15,000. So he would not give the film to the exhibitor unless the cinema has a potential of Rs 75,000 revenue or a theatre gives me a minimum guarantee of the same amount. Now, when the same distributor gets into the digital network, the cost comes down to Rs 10,080 because the exhibitor now pays him Rs 360 per show for 28 shows per week.

"Earlier, the distributor would need Rs 75,000 minimum guarantee otherwise he won't sell the film. Today the print cost has gone down. Suddenly it becomes viable for the distributor to spread the film widely also. Also, earlier the exhibitor would have got the film after eight weeks, and he would not settle for anything more than Rs 2,000," says Mishra.

SURVEYOR OF SKIES

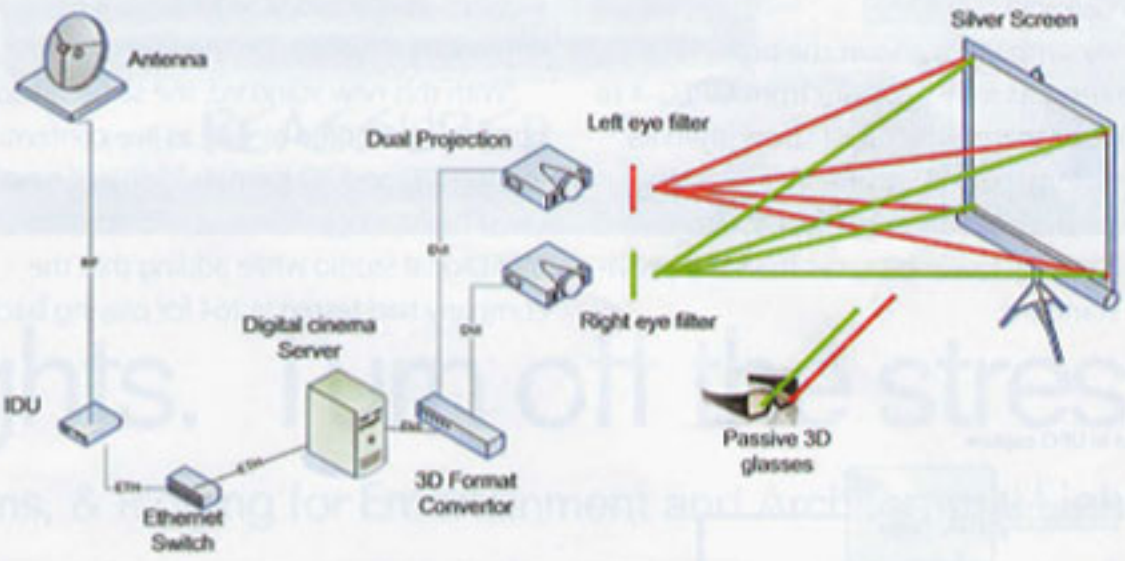
The technology backbone based on satellite broadcast has in fact widened the vistas of opportunity for the company. Today UFO Movies is poised to become an online exchange for the industry, where film exhibitors and distributors can strike a deal on their e-commerce platform. The company also has the capability to become a true video on demand (VOD) player where it could send movies to a media server using push technology as opposed to the prevalent practice of pull technologies such as video streaming.

In fact, using satellite technology, the company recently launched a whole new initiative called Edubeam, where the technology is used to impart two-way, interactive lectures in schools. Lectures are presently being held at a centralised studio where the lecturer reaches out to 80 schools across Mumbai region.

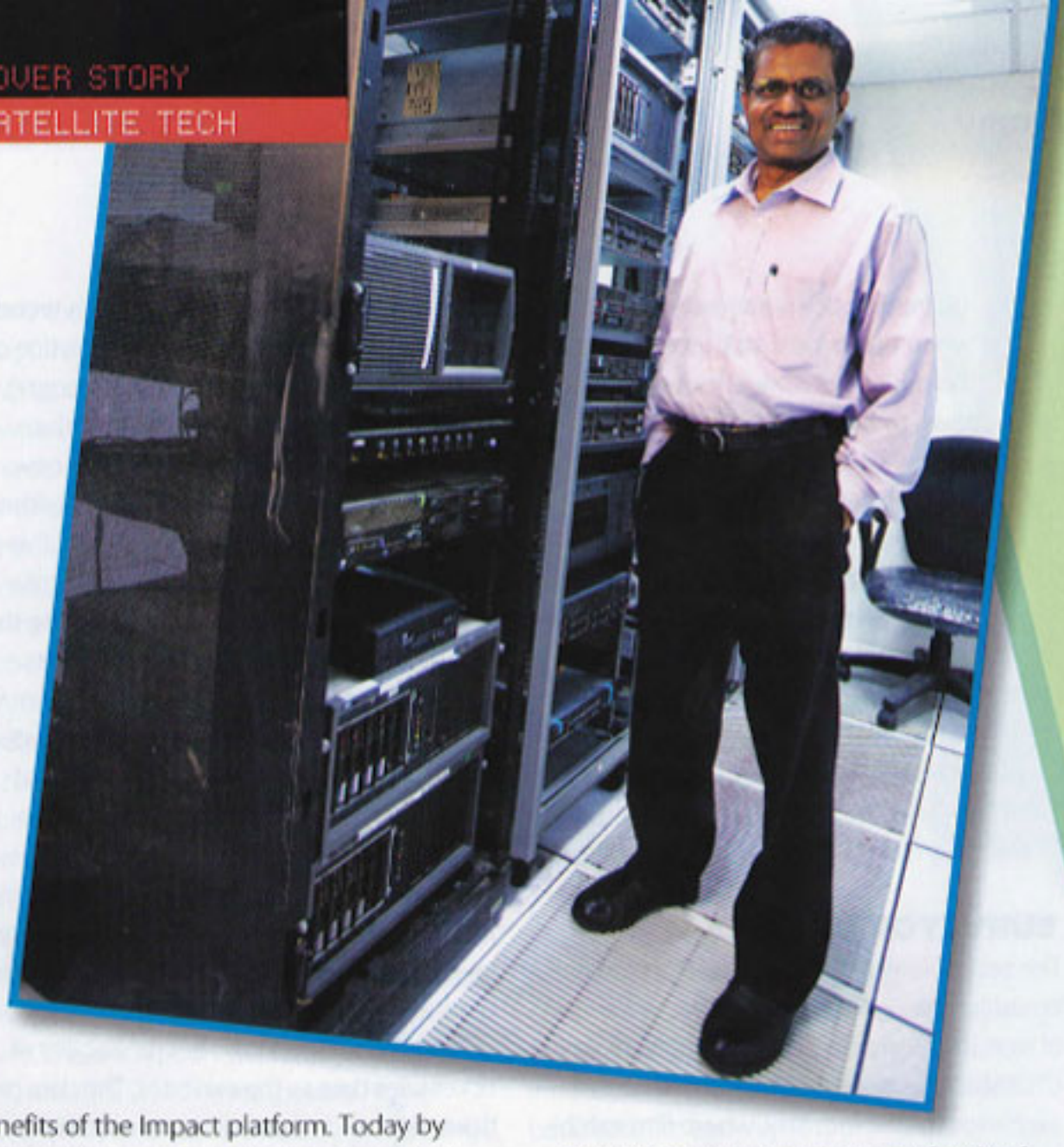
UFO Moviez has also launched Integrated Media Pact (IMPACT), a very powerful platform and has the potential to change the way the industry conducts its transactions. The settlement platform of Impact will bring about a transformation in the transparency levels in the industry. Currently the platform has been installed in 200 cinemas.

The technology allows online visibility of ticket sales data to the exhibitor. The data on ticket sales and theatre occupancy can be sent online directly to distributors, saving effort and cost, besides generating using trend analysis.

"When we reach 500 cinemas we will take it to the next level and launch the various



UFO Digital Cinema in 3D Block Diagram

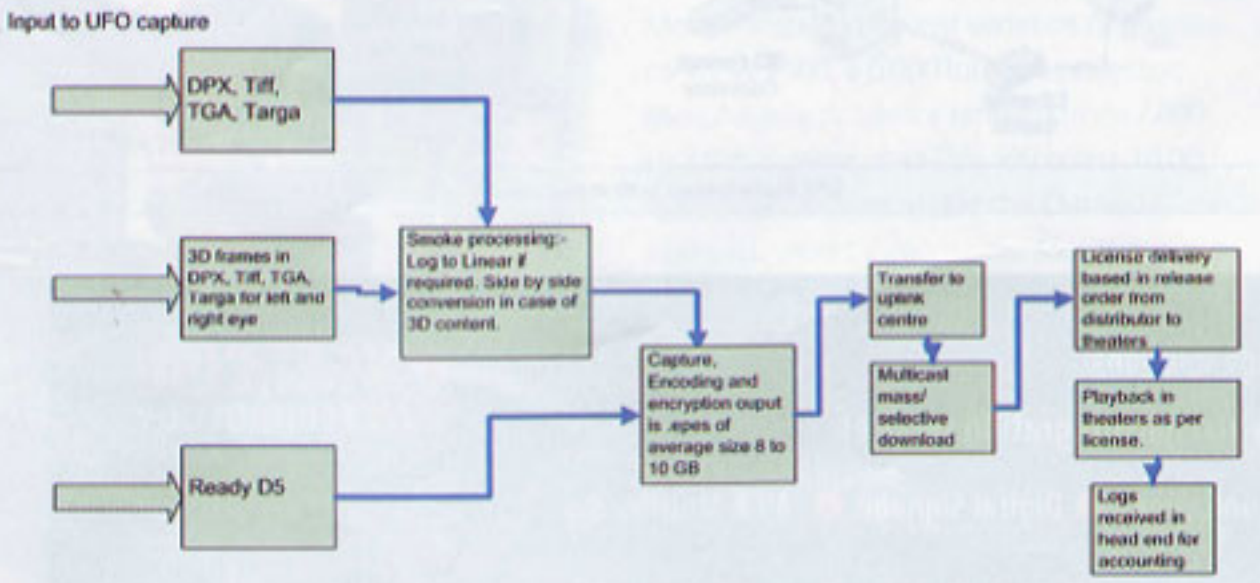


benefits of the Impact platform. Today by the time the money reached the producer from the exhibitors via the distributors, it can take anywhere from eight to ten weeks. With Impact, this same thing can be done in two days in a transparent and seamless manner," says Gaikwad.

The company is also in the process of migrating its infrastructure from MPEG-4 to H.264 standard, which will strengthen its technology backbone and further allow it to provide better video quality at substantially lower bit rates than the previous standard.

The H.264 belongs to the same family of MPEG-4, a standard used to compress audio and visual data. It contains multi-picture and inter-picture prediction, including the features such as using previously-encoded pictures as references and allowing up to 32 reference pictures to be used sometimes.

"With this new standard, the same set-top box can play stored as well as live content for both 2D and 3D formats," Sanjay Chavan, Chief Technology Officer of UFO Moviez told Digital Studio while adding that the company had tested H.264 for playing back



UFO Capture, Encoding & Delivery process Block Diagram

> **"With the H.264 standard, the same set-top box can play stored as well as live content for both 2D and 3D formats"**
>
> **Sanjay Chavan**, Chief Technology Officer, UFO Moviez

content at theatres during the Indian Premier League matches of 2010.

The company is presently testing the encryption compatibility of the standard. It has already tested the playback on H.264, and it has successfully started encoding in the new standard.

H.264 standard belongs to the same standard as MPEG-4 and is also referred to as MPEG-4 Part 10 or Advance Video Coding (AVC). It is jointly maintained with MPEG so that they have identical technical content.

"What we are presently using is MPEG-4 Part 2. So we will have to make changes at every level from the central site to the head-end site. The encoding would be different, the encryption should be compatible. The playback should be such that it can decode the H.264. Hopefully we should be able to migrate by this year end," says Chavan.

The company is also gung-ho about its 3D initiatives. It has already rolled out 100 screens, and set a target of 1,250 screens by March 31, 2013. Over time the 3D content is bound to increase. However this will not happen till there are 3D screens. So the company has identified this space and has launched a cost effective 3D solution so that it can reach out across India.

UFO has recently achieved a major technological break-through in the field of 3D. It has indigenously developed a very cost effective technology to convert existing 2D screens into 3D screens. The last four matches of Indian Premier League (IPL) in 2010 were brought live in theatres in 3D with spectacular results. This was perhaps for the first time in the world that a sporting event of such magnitude was brought to the theatres live in 3D.

"The next big thing for UFO is 3D. We strongly believe that 3D is the future and that is why we are investing heavily into this technology," says Gaikwad.