

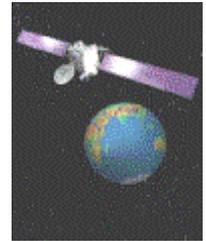
"I would like to close by mentioning a possibility of the more remote future -- perhaps half a century ahead. An 'artificial satellite' at the correct distance from the earth would ... remain stationary above the same spot and would be within optical range of nearly half the earth's surface. Three repeater stations, 120 degrees apart in the correct orbit, could give television and microwave coverage to the entire planet."
— Arthur C. Clarke, 1945

New Satellite Services: Out of Africa and Europe

By Howard Greenfield

The Satellite Dream: From 1945 to 2001.

The communications satellite has appealed to the imagination ever since it was dreamed up in 1945 by Arthur C. Clarke, author of 2001: A Space Odyssey. In a remarkable letter to the technical journal *Wireless World* at the close of world war II, Clarke, then an officer in Britain's Royal Air Force, suggested a higher purpose for rockets like the German V2 that were bombing London at the time:



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A breathtaking idea whose time has come, the business model remains challenging. Yet the services that have been created so far are nothing short of amazing. I spoke with some industry experts on where things are headed, the influences on new satellite application deployment as well as barriers to progress.

Building the Business: The Right Ingredients

When I mentioned the subject to my editor, Tony, he recommended I look to Africa. So, in addition to discussing the subject with European technologists, I also discovered MultiChoice, a thriving company headquartered in Johannesburg South Africa with 690 employees, serving the entire African continent by satellite. More on them in a minute.

Companies have found challenges and rewards pursuing successful business models as satellite technology improves and the market evolves. Europe OnLine's CEO Candace Johnson points out end-user equipment hurdles: "For the converged, digital broadband satellite broadcast, having two tuners in one set-top box remains the biggest challenge to making this product commercially available for consumers." However, by combining fast Internet surfing through Plenexis' Skybooster with it's other offerings, Ms. Johnson believes her company will overcome any barriers to a critical mass of consumers for new services as the "user gets the best of the unicast and the multicast worlds...through all types of digital products - games, videos, software, music, and films for pay".

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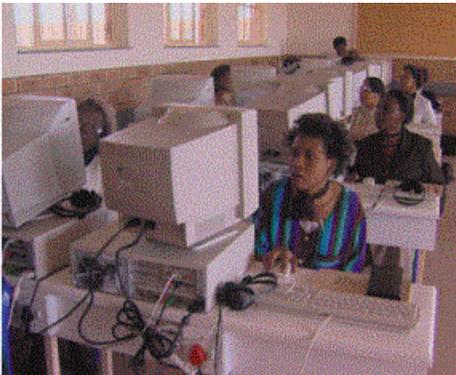
Out of Africa: Thriving, Commercial Business.

While Silicon Valley and European technology centers are stereotypes of new technical achievement, satellite is delivering its own advances faster and farther throughout (continued) the entire world. I learned this in my discussion with Nolo Letele, CEO of MultiChoice, with its 600,000 digital subscribers in South Africa, and more than a million subscribers across 50 African and Indian Ocean countries. Their Satellite reach includes PAS 7 for Ku band coverage of southern Africa and PAS 10 for C band coverage of sub-Saharan Africa. Additionally, MultiChoice recently invested \$10M to roll out a Ku band service on the back of the Eutelsat W4 satellite whose smaller satellite dish requirement will mean more customers should be buying satellite television technology and services. MultiChoice originally developed, then spun-off, specialized B2B services used by Ford to update their dealerships in the bush with marketing and business documents regardless of location. He compared his business with that of the U.S. and Europe.

“Our growth is also fueled by the fact that while your markets overseas are penetrated with TV sets, here, the economy is transforming in ways. You are starting to see upward mobility in the population, which is good and means that a market is being created as we go along. We expect our South African subscribership to peak at about two million.”

“Some of what we do is not yet available where you are in Silicon Valley. As a sole operator you have the attention of your subscribers. Our average middle to higher income person hasn’t got a lot of entertainment, so DSTV supplies 50 channels, with as many as four sports options, four movie, and all of this makes for enjoyable watching—and value that is higher than it’s US counterpart.”

I asked what were some of the biggest challenges facing MultiChoice. “The biggest challenge faced is, given we were the second digital satellite in the world after direct TV (we opened in ’95), we’ve acquired different generation decoders and our user base has over fifteen models with varying memory sizes, processor speeds, and capabilities—a major nightmare for developing interactive applications to port to all the boxes. Some would not receive properly, and in terms of upgrading boxes, it was a major challenge – but we’ve achieved it [compatibility] and the benefit is that 85% of our base receives full interactive service on OpenTV middleware including TV-mail, e-shopping and enhanced television. We’re now doing a lot with sports channels, and other shows similar to ‘Big Brother’, and it was a major technical accomplishment to do that.”



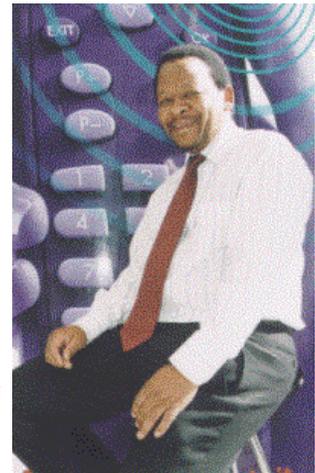
The SHOMA Foundation, a MultiChoice subsidiary, providing teacher training to educators in remote areas through the use of satellite technology.

MultiChoice has also been proactive in partnering with other corporate leaders to provide services to improve social conditions. In a variety of programs they are bringing distance learning to remote areas. “On the educational front, our distance learning programs, such as SHOMA foundation send video and IP materials to computers in community centers and schools—part of a corporate social investment. This gets content into rural areas—content that we develop in conjunction with developers we hire.” MultiChoice pays for the infrastructure and satellite capacity, and then facilitates third party sponsor companies, including Ford, Liberty Insurance, and Anglo-American mining, to stream educational content to various centers throughout the country, introducing teachers to PC-type skills they would otherwise not normally receive.

“Also, we created the Vuka (“wake-up”) awards, a Public Service Address (PSA) film production competition. We invite amateurs to produce a thirty-second PSA depicting a cultural life situation—often in context with harsh suffering to address social issues. We then bring in professional, world-class judges experienced in their own right. The

winners get prizes, scholarships, or grants to help with their future work, and their production is shown to viewers receiving our service”.

MultiChoice's Letele is probably most excited about the interactive services just introduced that they've been developing for some time in association with OpenTV software and IRDETO in Holland. "We're launching on a platform integrating modem and a new, futuristic keyboard. We don't know what the usage pattern will be. Though it has been disappointing elsewhere in world, we think with our business model of retention, enhancing substance for enjoyment . . . we stand to keep subscribers in "sticky" applications. Down the line, when usage is up [higher] on interactive applications, we'll see revenue streams through games, TV-mail (mainly text and short document messages) and the ability to send post card [e-greetings]. We have a Hallmark movie channel that is quite popular—and because they have a separate established business in greetings cards, we think it will be possible to do interesting things with Hallmark's digital content on our channel. We focus on interactive services and will add as we go along including sending SMS from the living room, to games we'll launch later in year with remote control, and down the line with on-line betting."



**MultiChoice CEO,
Nolo Letele:**
*"We've grown and
learned our lessons.....
and paid the price of
being a pioneer."*

"Also, many channels are going to support integrated data attachments. For example on the Discovery Channel you will be able to click and drill down and get information on what you're viewing. Funnily enough, the States [U.S.] tend to lack in these functionalities. We ourselves have been providing them on our own channels for the last year and a half. But more exciting is that programming from channels like CNN, SKY News, HallMark, Discovery Channel, and National Geographic will now start to have this type of content pushed down to the subscriber from a click on their remote."

"MultiChoice's medium-term future is in dual-view decoder—something new we will introduce next year to allow homes to watch different programs in separate rooms, simultaneously. Further, is the introduction of Personal Video Recorder decoders with hard drives ('TIVO-like') that will facilitate a number of things: pause and rewind function, but most important will be video-on-demand where customers can download movies and CD's onto their hard drive, and choices are replenished and encrypted once a week so like a hotel mini-bar model—they only pay for what they use. I think it is going to revolutionize how TV is watched here. We think it is too early to introduce it today, but like all things new, it will get soon over its teething. We are a 'fast follower', studious of other global rollouts, but not too late to market. We've grown and learned our lessons . . . and paid the price of being a pioneer."

Expert views from Europe

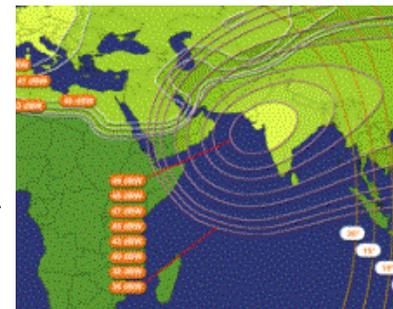
As these commercial services get better established globally, improving the technology and business model is an ongoing process. I spoke to some other experts about key ingredients and upcoming developments. Jeff Hustad is an independent Senior Architecture Consultant for Broadband Systems—very experienced in European satellite service deployment. Part of his current focus is easy customer access to the expanding range of content and capabilities offered by satellite carriers. "The problem is going to be the variety of entertainment sources and making it easier for customers to access a combination of services including both broadcast and downloads to a set-top box. Cable and Satellite distributors will be under more pressure than they are today, they will be competing for customers every

hour and the battleground will be on the EPG (Electronic Programming Guide) selected by the customer.” Hustad believes EPG functionality will be a key catalyst in the widespread adoption of services: “EPG’s are going to be the drivers. The content that achieves the prominent positions in an EPG is going to be watched. The EPG is the combination of a TV Guide and the channel selector. The content and service that is integrated into the EPG will be available at a click. The flow of content will come from satellite, cable, and the internet and will be controlled by a set-top box or PC in the home.”

The satellite’s power to transmit video programming, interactive media content, and massive data files to global audiences through transponders in the sky, faces other hurdles in the growth of applications for the home customer, and corporate environment. Perhaps completeness is the key. Charles Josa is Executive Director of Intellicast in Luxembourg, a video-on-demand broadband service provider that is based on both satellite and cable. “I believe our media-on-demand market is still emerging because [for] suppliers (us) the challenge is to design . . . services and it’s risky because it’s not clear what the market wants. So suppliers must dream, but stick to what the market is able to accept. During the last years there have been many good ideas but implementation is challenging—you face technical problems, and you must improve on what you need to market (i.e. “are my ideas satisfying the customer?”). The business model is most difficult because you need to buy rights, own the set-top box, deliver equipment, and refresh content frequently! High speed satellite access is critical when there’s no terrestrial alternative—like Eastern Europe, or if you want to make a seamless network, but it’s also costly, and you need enough customers to pay for that cost to make it ubiquitous.”

The Final Frontier.

Space, the final frontier, is now home to satellites and a new business that provides sophisticated communications capabilities, along with its technical and commercial challenges. Pioneers like those we heard from look to the future integration of satellite, set-top, Internet, and interactive applications. Meanwhile, in 2000, EUTELSAT’s Director General Giuliano Berretta launched its SESAT satellite and dedicated it to Arthur C. Clarke. It now serves data and video broadcasting, Internet connections, high-speed internet access, distance-learning, transfer of software and mobile phones to many parts of the world—including Clarke’s home in Columbo, Sri Lanka.



EUTELSAT’s coverage of the Indian Sub-Continent —including Sri Lanka.

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About the Writer



Howard Greenfield is a freelance writer who has held leadership roles in Fortune 1000 and some of Silicon Valley’s top companies including Sun Microsystems, Informix Software, University of California, Apple Computer, Kraft and was VP, Product Marketing at Obvious Technology and Sofface. He is principal of Go Associates, a leading consultancy that develops and implements high-tech product marketing and business development strategies. Howard also currently serves on the board of BlueVoice, a non-profit marine life preservation organization.