

As interest increases in Linux as a media production toolkit, Jono Bacon explores the history and prospects of Helix and its potential as a cross-platform media player

# Getting Real with Helix

**O**n January 26th 1926 John Logie Baird successfully created the world's first public television transmission. A pioneer in facsimile, fiber optics and radar, Logie Baird was a keen innovator when it came to technology, but his innovation in television was his most notable success. Back in the distant days of 1926 Logie Baird could never have imagined the ways in which the moving pictures that he had made possible would be used today.

The Net was built to handle text-based information, not audio and video and other rich media. The invention of the World Wide Web by Tim Berners-Lee at CERN in the early nineties transformed the possibilities, but the first organisation to produce specific solutions for the creation, delivery and consumption of media via the Internet was RealNetworks with the release of RealPlayer and RealAudio in 1995.

At this point in the Internet timeline, the World Wide Web was a niche technology that

was young and still experiencing teething problems. For many, the World Wide Web was a World Wide Wait. The cutting edge technologies of the time made it difficult enough to download static text and images at a satisfying speed, let alone weighty audio and video content.

Real's innovations made it possible to create a means of streaming audio and video content to the viewer, despite the shortcomings of the media. The technique is akin to an egg timer - the content is gradually moved from one part to another via the narrow limitation of the container. The method worked well for the narrowband Internet of the mid-nineties, and before long, Real had a working implementation of its RealAudio and RealVideo technologies. These technologies were eagerly snapped up by a media hungry user base who were gradually getting faster and faster Internet access. As narrowband gave way to broadband the technologies refined, and Real were able to distribute high quality content that

could be streamed across the Internet with impressive results.

## UNRAVELLING HELIX

Despite a history of innovation, Real suffered both from the proliferation of free alternatives, and from the aggressively monopolistic marketing of the Windows Media Player by Microsoft, which has been the subject of a ruling by the European Commission. The open source community not only provided alternative Operating Systems that provide a potential vehicle for Real technologies, but during the .org boom, the philosophy and culture of Free Software pushed the spotlight onto Real to get itself involved, or lose out. Organisations were rapidly jumping onto the Linux and Open Source bandwagon, and the huge press surrounding the donation of the Netscape code to the Open Source community created a potential opportunity for Real to cash in on this new phenomenon. Maybe open source code

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could help Real lower the cost of their application development, and bring in some much need publicity on the back of the hype about the open source revolution?

On July 22nd 2002 Real announced the birth of the Helix project. Nestled inside the bluster and hyperbole of the press release, Real described the project as a “a new platform and community for the standardisation of digital media creation, delivery, and playback.” According to the enthusiastic prose, the platform would provide “the standard infrastructure to empower developers, IT companies and CE companies to drive the Internet media industry forward into the future.” In accordance with the press announcement, Real created a community development site at [www.helixcommunity.org](http://www.helixcommunity.org) and released the existing Helix source code that had been developed over the previous eight years. The Open Source community jumped at the opportunity and fervent development began.

Vikram Dendi, Program Manager responsible for the Helix platform, feels that Real made the right decision in going for an Open Source solution for Helix development. “RealNetworks recognized some years back that demand for the media products and services the company had pioneered was growing at a rate that the company’s own engineering resources could not keep up with. Real began investigating possible models that could enable its IP products to get into the hands and the development schedules of the individuals/ companies interested in integrating Real’s media products as part of their own market offerings,” he explains. “Real was in search of a model that would enable the company to strike the right balance between fostering innovation in Real’s technologies and enabling the company at the same time to continue to focus its efforts on providing services to the end user”.

Although Dendi is confident that Real chose the Open Source road to apply better focus for

its engineering capabilities and products, some cynics suggest that the real reason (no pun intended) for the company’s move to Open Source was a means to bring more attention and focus to the company from the press. “Real chose to adopt an open source model as it best served the needs of moving technology and innovation forward, and empowering the global development community,” says Dendi. “This model ultimately equips individuals and organizations to help create the products that they truly want - the perfect media player, producer and server for their platform of choice”.

**THE HELIX PLATFORM**

Given the press coverage surrounding Helix, one would be entitled to assume that most people are familiar with the components of the Helix platform. Nonetheless, there is much ignorance of the project, which offers community members the opportunity to license the Helix DNA Client (the core Media engine) and the commercial RealAudio and RealVideo media formats.

The Helix Player, the free open source media player which contains only open source components, and the Helix DNA Client are available under the GPL. The Helix DNA Producer and the Helix DNA Server are also available in source code form under the Real Public Source License (RPSL) and the Real Community Source License (RCSL). The RPSL is a traditional Open Source license that is certified by the Open Source Initiative, whereas the RCSL is a license that enables the commercial use of Helix. These different components essentially provide a a media player, streaming server and development framework for the project.

The [www.helixcommunity.org](http://www.helixcommunity.org) website, where the Helix code is maintained, is built with the GForge development platform. Developers can join the various projects taking place in the

community and can take advantage of the typical development resources (CVS, mailing lists, etc.) which make it easier to get involved and to coordinate development within the community. This kind of development resource is certainly not a new phenomenon in the commercial sector, and Sun runs a similar set of resources for its Open Source projects. From a neutral perspective it is apparent that Real’s donation of a large chunk of code to the community is useful both to the community and to Real’s commercial prospects.

Unfortunately there is a fly in the ointment of this picture. Although the Helix platform is open and flexible, the Realvideo and Realaudio codecs still carry restrictive commercial licenses. The primary purpose of the Helix platform is to provide the machinery around the codecs, but the codecs themselves are an entirely separate entity.

According to Dendi: “The goal of the community is to provide developers and companies with access to an entire framework of media technologies. RealAudio and RealVideo are available as multi-platform codecs, as well as MPEG4 within the community.” Dendi also sees a massive potential for Open Source codecs, “Ogg Vorbis and Ogg Theora are available, and there are several open source codec initiatives underway. The tangled intellectual property situation makes it difficult to offer open source codecs”.

The web of IP dependence is nothing new when it comes to software, but Real has not been forthcoming in explaining exactly what kind of IP problems may result if the company open sources its codecs.

Despite the lack of open source Realvideo/ Realaudio codecs, the Helix Player developed within the community is focused on Open Source codec support and was one of the first media players to offer Theora support. The project worked closely with The Xiph Foundation to offer this support, and the relationship between Real and Xiph has been good - Xiph were one of the recipients of the Helix Community grant program in 2003.

**DETERMINING VALUE**

August 3rd 2004 was a key date in the history of the Helix project - the day that the Helix Player was officially unveiled. Real re-branded the product and presented it as RealPlayer 10 for Linux and the wheels of the press began to

roll. Since the release, a number of distributions have picked up the software and included it within their package archives. The new player was built with GTK and fits seamlessly into GNOME and other GTK based environments. The free Helix player will happily play Open Source formats such as Ogg Vorbis and Theora formats, but if you want to use Realaudio or Realvideo, you will need to use RealPlayer 10 for Linux. In addition to the Real formats, the RealPlayer 10 for Linux product has been extended to support MP3, Flash and other non-Open Source products.

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The approach that Real have taken is certainly similar to that of Netscape and Mozilla, but there are restrictions. Despite the limitations, Dendi feels that releasing the code to the community has been the right way forward. “Both the Helix Player and the multi-format Real Players are free to the end user - like the Netscape/Mozilla model”, he suggests. Dendi is happy with the policy of visibly separating open and closed chunks of the Helix platform to avoid potential legal issues for both Open Source hackers and the Real payroll.

“A central concept of the Helix Community model is that the Helix Player will function as a completely Open Source product under the terms of the GPL or the RPSL. The player’s licensing options have been designed to provide the open source community with the flexibility to modify, experiment, and redistribute Helix Player technology without worrying about the commercial complexities surrounding the RCSL and Binary End User License Agreements (BEULA) licenses. This model allows for the Helix Player, and the underlying core media engine, to grow as a cutting edge and innovative media player platform that stays ahead of the digital media curve.”

From a cynical standpoint, it is difficult to identify the true value in the development of a Helix based media player. With the sheer number of flexible and feature laden open

Source media players available, it seems the only true value is in being able to play back the Realaudio and Realvideo formats that are lacking from most Free Software media players. The offset to this cynicism is that the developer community will have a hand in which features go into the commercial RealPlayer 10 for Linux. Depending on your ethical stance towards commercial companies making use of freely submitted work, this can be a good or a bad thing. Dendi is fully supportive of the model: “RealPlayer is focused on creating a stable, solid and robust media player for end users.

RealPlayer adopts and integrates the mature features of the HelixPlayer, to ensure that the RealPlayer delivers a great media playback experience for Linux users, as well as adding service oriented features such as premium content availability.”

**DRAWING THE LINE**

When Real decided to mount the Open Source bandwagon, the company was eager to explore the potential of working with the Open Source community. Real has taken a long-term view of the market, and Dendi is confident that the Open Source development model will win. “Real’s focus is on delivering compelling media services to end users, and the Open Source model enables Real to focus its resources on creating superb end user media experiences”, Dendi says. He is also confident that the potential with Open Source can result in specially developed versions of their software. “The Open Source model also offers Real the opportunity to develop premium/paid versions of its software. For example, there have been a number of requests from Player users requesting the creation of a paid ‘premium pack’ that would see the addition of DVD playback, MPEG4 playback etc to the Helix Player/ RealPlayer offering.”

The true value of the Helix platform comes from the perspective of media encoding and

distribution. Although the Realaudio and Realvideo codecs are closed source and are more restrictive, the ability to have a consistent media encoding, distribution and playback framework that is truly cross-platform will be a godsend for those who want to create cross-platform media content. This in turn will open up Linux and other free platforms to media that was typically off limits when a more commercial approach was applied to these tools.

The challenge that Real will face is in keeping their Realaudio and Realvideo codecs current. If the Theora codec continues to develop well and provide a compelling codec to be used with the Helix DNA Producer/Server/Player, this could relegate the commercial codecs to obscurity. As with other similar initiatives though, it is likely that the Real brand will add value and commercial confidence in the technologies created under the Helix community. This brand confidence will no doubt convert to prosperous revenue when combined with the lower engineering costs due to the contributions from the community. Although this makes commercial sense, Real will need to be careful to not push the community too hard, or give the impression of exploiting the good will of software developers as wage-less slaves. If the line is drawn correctly, the symbiotic relationship between Real and the open source community could mean great things for the future of media production all platforms.

**Helix as a usable platform?**

With all the hype and discussion of Helix, many content producers are only interested in seeing if the platform can provide a means to create cross platform content for a low cost. With the different Helix tools, the Linux media guru can:

- Encode using the Helix DNA Producer
- Distribute/Stream using the Helix DNA Server
- Play media using the Helix Player/ RealPlayer

Each of these tools can be utilised with no licensing costs. Licensing options are available for the RealAudio/RealVideo codecs. Real also offer some Digital Rights Management (DRM) services for the Helix platform.

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