

21st Century subtitling

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An increasing percentage of programming today is subtitled for both translation and hard-of-hearing access, often across multiple languages. Not long ago, subtitle management was an add-on to the broadcast process. Times have moved on from the occasional single subtitle language insertion, or the distribution of transmission media with burned-in captions. Now subtitling is more complex and needs to be at the heart of transmission management. Subtitles have a place alongside video and audio as a key part of the delivered content.

The complexity is increased by the diversification in transmission media. Material is often re-purposed on the fly for transmission on DVB, mobile phones and broadband, as well as the familiar trio of analogue, cable and satellite. And I haven't even mentioned HD yet.

Therefore, in order to remain sane, the typical broadcaster must integrate subtitle workflow into their planning, automation and monitoring systems. Building up a separate but parallel system just for subtitles is no longer feasible. This presents an interesting set of challenges for manufacturers and broadcasters alike. Huge technical changes in the broadcast world are accompanied by seismic shifts in the marketplace. Consider, for example, recent moves by Omnibus into transmission and Pharos into media management, evidence that the role of traditional automation systems is becoming less clearly defined.

Nowadays, programme content is often bundled up shortly before transmission into a

series of parcels specific to the transmission media and the languages needed for that particular schedule entry. This equates to a 'just-in-time compilation' approach for content. With its Quicktime-based file format, the Omneon Spectrum Server lends itself to this type of approach: a wrapper file can be easily created or edited to achieve the required mix of subtitles, audio tracks and video.

For subtitle equipment manufacturers, there is both good news and bad. The good news is that the volume of subtitling is increasing. This is due in part to legislation in favour of the deaf and hard-of-hearing communities, and in part to the growing number of programmes in foreign countries which require translation from the original language. And yet the top dogs at Starfish, Softel, Sysmedia and other manufacturers (a surprising number of whom also have names starting with 'S') do not seem to be excessively well off, judging from their modest cars and frugal expense accounts. It would appear that they, just like the automation vendors, are finding the shape of their market niche being both squeezed and stretched. Not a comfortable feeling, but one that does offer interesting opportunities for those willing to grasp them.

Rather than concentrating on the production of discrete boxes and applications, these manufacturers are now required to provide subtitle-management systems of wider scope, which can integrate with the broadcasters' existing programme-planning and media-management systems. Subtitle-management systems must identify situations

where subtitles are required, commission the subtitles from the chosen subtitle authoring house (more about them later), receive and identify the subtitle file, check the file for consistency and finally transmit it. Status information, reports, warnings and all the other Corporate IT tools and safeguards must also be provided. One such example of this type of system is Starfish ProTask, a generic task management system which also recognises the need for open standards. To this end, Starfish publishes the specification to the ProTask plug-in interface so that broadcasters can write or commission their own plug-ins (searching their bespoke subtitle file archive system, for example).

At the transmission end, the days of the traditional subtitle inserter box are numbered. Products such as the Starfish Compositor system write closed captions directly into the high-resolution files on an Omneon server, offering a far more elegant and efficient solution for subtitle insertion than downstream boxes with all their redundancy headaches.

That's all very well, but it rather jumps the gun. To achieve their purpose, subtitles obviously need to be transmitted. Without transmission, they are useless. Even more obviously, the subtitles must first be authored. The subtitle authoring market is very keenly contested: turnaround times are tight; there is constant downwards pressure on prices. To reduce costs, many UK authoring houses are now outsourcing their work to other parts of the world. Translators are usually cheaper in their native countries, and broadband internet allows browse-quality media to be accessed from almost anywhere. Although at first glance this seems a cost-effective option, it

has its problems. How do you support software around the globe? How do you manage freelancers in a range of time zones all working different language translations for the same programme? Subtitle authoring houses have had to invest heavily in IT infrastructure. Their FTP sites are accessed day and night and must be reliable. Home-workers connect via VPN. Workload must be balanced between sites. The technology used in subtitle-authoring operations must be cutting edge. It is often more so than at the broadcast sites where the resultant subtitles are transmitted!

Statutory requirements, combined with pressure from special-interest groups, mean that broadcasters must increasingly provide subtitles on live programmes such as news and sport. Live subtitling brings the authoring house face-to-face with the broadcaster in a high-pressure environment. It must be acknowledged that the stressful ambiance can give rise to some superb howlers. 'The refugees arriving by sea on a Vietnamese goat' is the only example I will give, but please note that some people compile lists of these bloopers and there is, allegedly, a web page on this subject. I do not know the URL. But if we leave aside these aberrations, live subtitling is generally a very effective service.

The two main types of live subtitles can be described as 'somewhat prepared' and 'realtime'. In the first instance, story text is available in advance but cannot be timed for automatic transmission. Many live programmes - news, for example - are scripted by journalists or editors in advance, which means that modern subtitling systems (such as Starfish Isis) can interface with newsroom servers to collect rundown and script data. Prepared text can then be manually keyed out by the subtitler, with the option of quickly typing in ad-libs or unscripted sections. For truly live or realtime subtitling, stenographers can be used. But good stenographers are increasingly hard to find, and the training process extends over several years. Stenography is increasingly giving way to speech-recognition subtitling. Subtitlers, who are relatively plentiful, are cross-trained to use their voice to produce subtitles using a speech-recognition subtitling system, rather than the traditional keyboard-only system. This training takes weeks rather than the years required for stenography. Incidentally, live subtitling has also joined the outsourcing club: live subtitling on British TV is routinely done from Australia.

After that brief overview, whither

subtitling? It seems to me that just as content is changing, so subtitling must change. Content is no longer just a tape or MPEG file. Rather, it is a collection of elements, including some or all of the following: a video clip; alternative audio clips; several subtitle sets; audio description

(possibly in several languages); metadata for identification and copyrighting; graphics. Subtitling therefore should be included in the mainstream programme acquisition and planning processes of each broadcaster as well as transmission and archiving. It can no longer be an add-on. Once it is properly included through all these stages, broadcasters will uncover rich benefits. With modern archiving systems, subtitles have extra uses: combine the subtitles and audio-description script of a programme and you have a complete text description of the archived item, offering a simple yet comprehensive search process for specific items within the stored media.

The challenges are not just technological. Subtitle ownership is another crucial topic. Authoring houses buy and sell subtitle files from each other, sometimes without

considering rights management. Do they own the right to re-sell the subtitles that they were commissioned to produce? At the other end of the scale, one programme is often subtitled several times by different broadcasters - a waste of resources, equally frustrating (surely) to broadcaster, subtitle provider and viewer. Neither approach is sustainable. The rights to subtitles and other ancillary data must be considered along with the rights to video and audio.

In a nutshell, then, subtitles must go mainstream. From commission to transmission, subtitles should be considered as a key element of the content. The challenge facing broadcasters and subtitle-system manufacturers is how to implement this new world order. Done well, the benefit is twofold: increased access and reduced costs.

