



Transforming staff alongside the technology

We have talked about transformations in the broadcast environment at every big change: black and white to colour, analogue to digital, SD to HD. But today's change – from linear audio and video to file-based architectures – is a real transformation, and it requires careful planning not just for the equipment but for the people.

From the dawn of television you could unplug a BNC and plug in a waveform monitor to see what the signal was like. If the automation went down you could still put an emergency programme into a VTR to keep the station on air. Yes, staff needed training on new equipment, but it was always a development on the familiar. The systems we are building today for our customers are largely file-based, built on IP infrastructures. To give one example, we are currently building what is effectively a greenfield start-up for Sky News Arabia. As well as what we might regard as the traditional HD newsroom and production system this involves accepting content from new platforms like Skype video calling, and it has to deliver to the internet, tablets and mobiles as well as broadcast channels.

File based architecture

The only practical way to achieve this is through a file-based architecture, and no-one, I think, could argue with that

decision. But it does mean that, for broadcast engineers, the 100 or so racks of equipment are largely alien territory. The



"Success in any integration project depends on identifying the right people to support the system once it's installed and operational," says Suhail Ahmed, manager of Technical Services for TSL Middle East in Dubai. "When a new station goes to air the operational staff need to be fully equipped and fully enthused to make it work."

risk of bottlenecks and critical points of failure are around the IP switches and server drivers, not router ports or VTRs.

So the system integrator has to take responsibility for designing a system that can be supported, incubating the internal resources within the broadcaster to understand what the system can and should do, and provide a common point of support to triage faults and get them corrected as quickly as possible. The first critical decisions come at the design stage. The choice of equipment has to be led not by performance alone but by how it can be supported. There is no point in specifying a mission critical piece of equipment if there is no local support in the territory in which it will be installed. Relying on shipping in spares – or an expert engineer – from half way around the world is not acceptable in broadcasting.

Design decisions

The second and more subtle design decisions are around what happens when

a fault does occur. How can problems be mitigated? Without the fall-back of putting a tape into a VTR and patching it on air, you need to understand where the redundancy paths lie, and how they will be implemented should disaster strike.

Systematic transfer of skills

It is at this point that the staff of the customer organisation starts to become involved. Because you are implementing not just new equipment but new concepts, there has to be a systematic transfer of skills. Installing the system then planning for two weeks of training is probably not going to work. It is only by understanding the logic of the design that engineers will be able to work through issues and develop a clear idea of where a problem lies. Those engineers will come with different skill sets, so the way in which knowledge and understanding is passed on will need to be tailored.

Lack of engineering talent

As I said earlier, some of these major file-based installations are going into greenfield sites, which means the in-house engineering team will have to be recruited. It is important, therefore, that the system integrator works with the human resources department of the broadcaster to

understand who is coming, what skills they bring with them, and when it will be most advantageous to develop those skills with site-specific knowledge. There is real concern around the lack of new engineering talent coming into the industry. The IABM is beginning to tackle this, with introductory courses on the fundamentals of broadcast technology for IT engineers, but much more will be needed. While some technology will be based on commodity IT hardware and software, the special requirements of television will always be there, making extra demands on processing. Bringing the brightest and best engineers into broadcasting is going to take years, so for now at least the system integrator and customer have to work together to develop an effective support structure. It cannot happen overnight, so it needs to be in the implementation programme from the beginning. Finally there is the issue of long term support. In a traditional broadcast architecture the end user would agree an SLA with the key vendors, specifying the speed of response to issues and the replacement of faulty components.

When things go wrong

But that implies knowing where the fault lies. It is fairly obvious if a VTR stops

replaying, or a DA goes dead, but it can be far from obvious when data no longer moves around a complex infrastructure. At that point the broadcaster needs a single person to turn to, and it is likely that the system integrator is the best placed to triage the fault and bring about a speedy resolution. In a support agreement the system integrator can manage the individual SLAs to ensure minimum downtime and maximise performance, as well as verifying upgrades.

Commercial benefit

Am I suggesting this as a way of justifying further fees for the system integrator? No, I do not see it as a new way of driving profit. There is a commercial benefit, though, in that it helps the SI get even closer to the broadcaster, thereby understanding the real requirements and helping focus future investments as the system evolves. That, I would suggest, benefits both parties. Ultimately, though, success depends upon identifying the right people to support the system, helping them to buy in to the thinking behind it, and developing their understanding of it over time. The goal is that, at the moment of going on air, the broadcast team know the system and are fully equipped, and fully enthused, to make it work. 