

Media Asset Management in Broadcasting: Where do we stand?

By Charles Bebert and Adrian Scott

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The article below draws on his latest publication, "Media Asset Management 2003," which has been produced in an English-language version translated by Adrian Scott.

Content is King, so they say...but only if you can manage it effectively.

The technology for creating and delivering digital content has developed at breakneck speed in recent years. In broadcasting, as in many other sectors, opportunities exist to deliver content in multiple formats and through a great variety of channels: Terrestrial Broadcast, Cable, Satellite; Interactive TV, the Web, Electronic Publishing; PDAs, Mobile Phones; the list is long.

Unfortunately the parallel technology to **manage** all of this digital content does not seem to be keeping pace.

What have you got? Where is it? How accessible is it? What can you do with it and how? Is it yours to sell, and under what conditions? *How can you make money out of it?* These and many other questions remain hard to answer for many digital media organizations. Despite any number of attempts, viable enterprise asset management solutions remain elusive and the number of successful implementations remains modest.

There appear to be several reasons for this. Users struggle to define their needs clearly. Vendors have difficulty in providing solutions that meet users' actual needs. Clear ROIs are hard to establish.

This is probably why many broadcast engineering departments have hitherto looked on the whole subject of Media Asset Management with some trepidation. The consensus seems to be that MAM is predominantly an IT

discipline, it's hard to define with any precision, and in any case it's immature technology.

Some broadcasters have been surprised to get offers from manufacturers which show enormous variations in price, with some solutions being quoted at anything up to five times the amount of comparable alternatives. For example, Arte (the Franco-German channel based in Strasbourg) was puzzled by a tenfold increase over one year in the price demanded for a particular automation solution, on the grounds that the augmented offer would provide a "complete" Media Asset Management solution.

All in all, MAM presents an intriguing contrast between the claims of manufacturers and consultants, who describe reliable technology and an incontestable need, and the relatively low number of "real world" projects in the domain. There is also a contrast between the large number of European TV stations (fully 75% of those surveyed) who see MAM as their next major project, and the fact that almost all of them (paradoxically) see it as a long-term goal.

It's a somewhat confusing and contradictory picture. The gap between the claims and the reality makes it all the more vital to establish some benchmarks, to survey available solutions and actual experiences, and to test the real ROI for MAM projects.

Kane has carried out an extensive survey of manufacturers and broadcasters in the MAM domain. This original research began just over a year ago with a commission from Arte, and we updated the results at NAB and IBC 2002.

This study lists 144 separate installations supplied by Content Management providers such as Ascential, Artesia, Avid, Blue Order, Bulldog, Convera, Dalet, e-motion, Harris-Question d'Images, IBM, Omnibus, SGI, SHS, and Sony. Mass storage and HSM manufacturers include Adic, Ampex, Storagetek, IBM, Sony, SGT, and Front Porch.

Charles Bebert also visited a large and representative number of broadcasters: in Germany ZDF, SWR, SAT1 and Pro7; RAI and Mediaset in Italy; SVT in Sweden; the BBC, BSkyB and ITN in the UK; RTL-TVi and Canal+ in Belgium; Lagardere, Multithematiques, RFO and TV5 in France; Centre TV in Moscow (we saw the system in London pre-delivery); Telemadrid, Telecinco and Antena3 in Spain; and CNN in the USA.

Looking for common traits, we can easily identify 12 core functions, some or most of which are present in all of the Media Asset Management systems we have seen. These are:

- Ingest
- High Resolution Storage
- HSM (Hierarchical Storage Management)
- Mass Storage/Data Library
- Low Resolution Storage

- Low Resolution Browsing and Preview
- Indexing
- Content Management Database
- Search Engine
- Deep Archive Recovery
- Invoicing
- Streaming and Downloading

There is a considerable diversity of projects, spread across 8 types of quite different application, with a wide functional range.

Functions	Ingest	High res. storage	Hierarchical Storage Management (HSM)	Mass storage Data library or N-O-L tape robot	Low res. storage	Low res. browsing & preview	Indexation manual and/or automatic (scene change)	Content Management data base	Search Engine	Deep archive recovery	Invoicing	Downloading or streaming
Type of application												
Transmission centre or playout management	X	X	X	X	as-run log sometimes	as-run log sometimes						
News Archive for production	X	X	X	X	X	X	Often	X	X	Very barely		
News web portal	X		X	X	X		X		X		X	streaming+ downloading
Digital video catalog	X		X	X	X		X	X	X	X	X	streaming+ downloading
Archive of a given programme	X		X	X	X	X	X	X	X	X	X	downloading
Deep archive recovery	X	X	X	X	X	X	X	X	X	X		
Marketing trade-mark repository	multimedia		X	X	X	X		X				downloading
Programm indexation for repurposing	X				X	X	X	not always	not always			
N-O-L : near-on-line												

Kane 's researches show a very large range of project types, ranging from comparatively simple (and largely off the shelf) near-line archive systems such as those installed by Sony at TF1 or Telemadrid; to very large projects such as “Jupiter” at the BBC, which constitutes a complete overhaul of the editorial process and the centralization of news activities round an ambitious data model aimed at managing versioning and rights.

The most frequent type of MAM application in TV is the **Transmission or Playout Centre Management** (42% of cases surveyed). These are designed primarily to manage content through the transmission process, rather than to provide production capabilities or long-term on-line archiving (although improvements in data library technology and increases in cassette capacity are making indefinite storage more viable). Low-resolution capabilities are rare (apart from as-run logs), and content management tends to be split between a variety of legacy or existing applications: traffic, stock and programme management, rights management.

Then come **News Archives** (23%), **Web Portals** (8%) and the **computerization of rights-holders’ catalogues** (6%). These last are becoming somewhat less frequent since the bursting of the dot-com bubble,

which was a big setback to those who were hoping for large profits through marketing content via e-commerce.

It should by now be obvious that it is difficult to generalize about MAM, in view of the large diversity in target usage (B2B, B2C, internal applications); of content types (TV programmes, commercials, marketing collateral, multimedia objects); and of the types of enterprise involved (broadcasters, production houses, advertising agencies, parliaments, government, defence, academia).

Digital playout centres do seem to be becoming more common, thanks mainly to the widespread adoption of MPEG2-Long GOP as a transmission format and of data storage techniques sourced from the IT world. There is still, however, a question in the minds of many production centres (as opposed to those who simply play out acquired programmes) who want to store material at IMX resolution which allows easier repurposing, i.e. for HD. Moreover, the market seems to have doubts about the longevity of the MPEG2 format and the arrival of MXF is eagerly anticipated.

It seems there is a measurable profitability threshold for digital playout centres using MAM techniques: payback seems assured when the number of channels transmitted is four or above.

The situation is very different for other types of broadcast MAM application, where the projects are more diverse especially in the production area. Content management for news and programmes remains at an experimental, almost prototype stage.

The variety of legacy systems, and applications already in use at each site, tend to make each news project rather individual, as is shown by ZDF, Sat1, Pro7, Telecinco, Mediaset, CNN and SVT, where the browse transactions and data model are different at each site, even though all adopt a solution from either Blue Order, Ascential or IBM.

While it still seems hard or impossible to prove a clear economic payback for MAM in news, justification can be found in improved editorial credibility, in a greater volume of output, and in a more extensive use of archives. In or despite the absence of a clear ROI, three separate news strategies have emerged:

- An “on-line” strategy with relatively developed content management and permanent mass storage. SVT is a good example of this, all the more so since it takes in 11 regional newsrooms as well as Stockholm and links all of SVT’s news production facilities to a central archive
- A “near-line” strategy where stations are happy with short term digital archiving (i.e. several months) with recourse to a videotape robot such as LMS for long-term archiving, and a much less developed content management application. ITN is the prototype of this.

- A “waiting” strategy, where no investment is made in archiving, little use is made of archive material, and stations are clearly only interested in ‘hot’ and breaking news. Sky News is the example here, where only 3% of material is ever re-used after it is more than 5 days old.

Where, then, does all this leave us?

The market seems to be waiting for MAM solutions which are more specialized by application type, but more standardized in their platforms and infrastructure and above all less costly. Francis Hericourt, Technical Director of France 2, is one prominent TV engineer who laments the fact that MAM is not yet a “product” and who is unwilling to take on the cost of a custom development.

It is clear that if MAM is really to penetrate the programme and content management area, it must be part of a complete reform of a channel’s or a station’s entire information technology infrastructure. For the present, no ERP (Enterprise Resource Planning) solution of the SAP type has really established itself in television production, in contrast to other industries where “supply chain management” is all the rage. Many TV stations seem happy merely to enhance their existing point-solution programme management systems by adding additional metadata items or by introducing only that data necessary for transmission automation.

However, while applications and systems are still very diverse, we have observed some extremely important common factors which affect broadcasters whatever the nature of the project.

Organization and workflow are key issues. We are seeing the emergence of a number of new positions and evolving job functions, including:

- Multiskilling (especially for journalists, production staff and control-room technicians)
- New jobs in the newsroom and production area which are largely IT-based and concerned with system implementation, support and maintenance.

Asset Management projects inevitably involve considerable integration effort with multiple systems from different manufacturers (hardware, software, robots) demanding real-time interfaces. This is another significant challenge, for which the key success factors are mostly concerned with the effective management of what is always a considerable engineering project:

- The quality and experience of internal staff and of external contributors
- Sensible phasing
- Professional project management from the outset
- Contractual arrangements adapted to multi-vendor projects

Also important is genuine change management and internal marketing of change, which is appropriate to the significant organizational evolutions taking place and to the large editorial and financial investments involved. Important factors in this are:

- The involvement of senior and middle management
- Staff training (at a recent major digitisation project at TSR in Switzerland this took up 22% of the total system budget), which does not end when the system is installed
- Measurable quality control both before and after the installation

So what of the future? In the short term, we expect to see the continued development of applications which are limited to specific jobs, such as:

- The repurposing of programme content
- The production of sports magazine programmes where football games, for example, must be rapidly turned around
- Browse applications for output where a lot of material is reused

The advance of browsing and thumbnail indexing, as well as speech recognition, is likely to lead to some significant developments, especially in providing a “decision support” tool for programme managers.

Permanent long-term archiving, thanks to robotic systems and the emerging DVD-RAM technology, looks like being actively pursued for economic reasons on the transmission front, and for editorial reason in news, especially as storage costs continue to fall in real terms.

The “holy grail” of a truly joined-up, enterprise-wide, and profitable MAM system will probably be found only when a broadcaster is brave enough, far-sighted enough and rich enough to make a serious attempt to apply MAM principles and techniques right across the entire content creation and delivery process. Several projects are now underway which may well succeed in achieving these lofty aims.

In conclusion, we are under no doubt that such enterprise-wide MAM systems are possible, even inevitable. They may not have arrived at quite the speed everyone expected them to. But they will arrive.