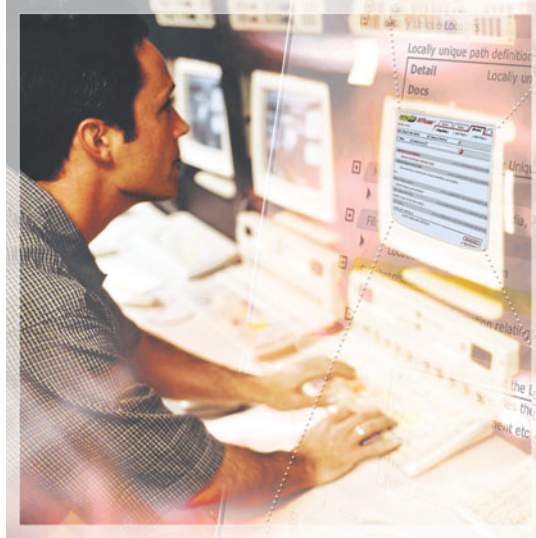


Demystifying Metadata



...and adding value to your business.



www.metaglue.com

The issues today

Things aren't what they used to be.

The television & media business is still a stimulating, creative environment in which to work. But over the last decade there has been a substantial increase in business pressures. This comes from the need to both actively manage costs and to grasp opportunities in the expanding markets.

The pressure to cost effectively fill ever increasing numbers of distribution channels has brought a new range of challenges to the industry. This applies equally to any of the possible broadcast, cable, online or phone routes to the consumer. In simple terms, the pressure is to increase output while maintaining quality and, at the same time, reduce costs. There is plenty of room for conflict here.

While it is the equipment that technically stores, manipulates and delivers the content, it is the staff who ensure that each step in the process works properly. With the requirement for a high volume output of content, it quickly becomes a repetitive factory process. This repetitive process can result in many types of loss. The inherent lack of creativity can mean that new ideas and thinking are not exploited. Quality control can fall, leading to errors being made. And valued staff may leave because of frustration or boredom. None of these are good. Content that needs to be reworked or output that is lost both cost money. Recruiting new people costs money, if you can find people with the right skills at all.

Parts of our existing technical systems often operate in isolated pockets. With little or no interconnection between them, the overall efficiency of the process is poor.

The current trend

At this point, enter the new file-based systems, frequently exploiting central storage with many users sharing the access. Suddenly there is the potential for big improvements in content handling. Whilst the move from tape to a file-based format has brought many benefits, it has also brought some logistical problems.

We all know videotape, but it has its problems. It is linear in its access, doesn't allow instant review, takes up huge amounts of space in storage, needs a runner or bike to transport it around – we all know the problems. BUT we all understand it – and it is tangible. You can see it easily. You can stick a label on it and put it on a shelf.

Storage and processing technology has advanced steadily in recent years – and efficient file-based online storage is available from many manufacturers. This has many potential benefits, especially in immediacy of access and content sharing but only if all the people or processors that need access can find it. As an example, consider the relatively simple requirement to track multi-version trailers or keep multi-language subtitles or signing in track with the A/V content. This can be a nightmare.

And yet, this is only an exercise in efficient labelling of the content. And this is where help is at hand, with the use of metadata, sometimes pre-existing, sometimes newly provided.

So what is metadata

Metadata is the additional information that accompanies the video and audio "essence" which makes up the programme material. It can provide a huge amount of information about the content of a clip and is critical for file-based workflow to be successful.

With a well designed metadata management system, an editor, director, transmission controller and anyone who needs to find and use content can do so quickly and easily. It represents a universal labeling system which can exploit "standard" labels which are used across the whole industry plus custom labels which are specific to your company. Where necessary, sections of metadata can be kept private, by being "invisible" to people and systems outside of your organization.

Without the effective use of metadata, the potential efficiencies that a file-based system offers go unrealised. And, of course, the cost of not using metadata grows each time a piece of information has to be re-entered along the production and distribution chain.

By contrast, the earlier in the chain that you add a piece of metadata, the more value you can extract from it downstream.

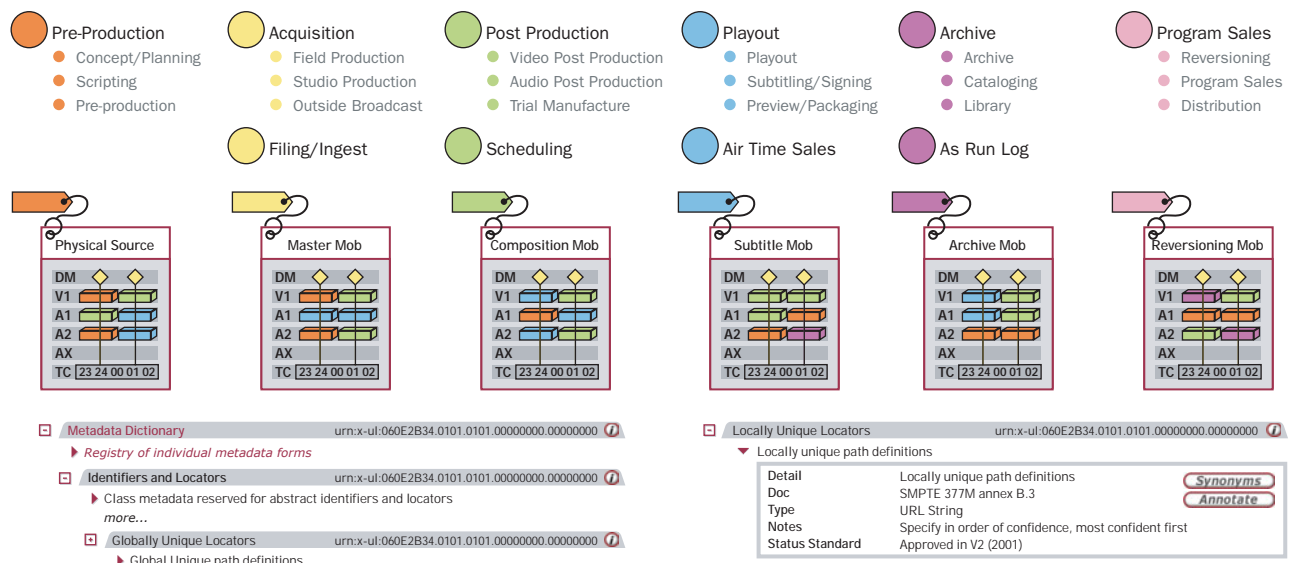
How to address the problem

Many providers of content and product vendors already use metadata. This alone can provide a start in improvements in process efficiency. And with careful consideration of how your organisation can use it, real benefits can be delivered.

Of itself, metadata can deliver very little. But in its ability to properly label your content, it represents a vital tool when incorporated into a process that is designed around your business and its priorities. This is a big step towards meeting your overall business goals.

Where it fits into your business

The diagram shows a simplified concept for the process and the flow of content. Even at the early planning stages, information exists which can help others downstream in the programme chain.



The impact on your business

No two media businesses are alike. However, we all strive to be efficient, cost effective and satisfy our customers.

Some of the early benefits are likely to be

- The labelling of content being done once only.
- The ability to add valuable information during your own processes.
- The right content being found more easily and quickly.
- The correct content is edited or transmitted.
- Quicker turnaround within the process.
- Customer satisfaction, leading to new or repeat business.
- Staff work more efficiently and are less bored by repetitive tasks.
- Staff are available to make a more creative contribution.
- Staff find more job satisfaction and stay, saving recruitment costs.
- Reduced overhead costs.

In the longer term, you are better positioned

- To develop your business and stay competitive.
- To accommodate increasingly demanding customers.

Frequently, making changes to a programme process costs money. But not taking action can cost much more. We all face the escalating costs of running a business – through inefficient use of staff, content "lost" inside the system, transmission errors and missed opportunities for sales revenues.

What would be the result if you conducted an audit of *your* operational efficiency?

What help is available

Metadata is not yet as tangible to users as a conventional tool like a camcorder or an edit system. Combined with its specialist terminology and relative newness to our industry, it has been a subject that has daunted many people. Our philosophy at Metaglue has always been to demystify the subject of metadata and its usage.

There are tools and human skills to support you through the adoption of effective metadata based systems. These are spelled out in the accompanying brochure from Metaglue. This includes details of Diffuser™, the software package that allows your company to exploit the industry-standard metadata library.

To support this approach Metaglue can provide quick and easy independent consultancy to analyze where greatest impact and payback can be found. It is vital to make informed decisions and to ensure that even modest investments produce the best possible returns.

The Metaglue Corporation operates in both the USA and Europe.

Metaglue has the expertise and experience.
Metaglue works with you to plan and implement business improvements.
Metaglue act as your agent in working with vendors.

What Diffuser™ can do for you

Diffuser™ provides a base from which to make flexible use of metadata, and allow your use of metadata to grow with your needs. Some of the many ways that Diffuser™ can be the base from which to build your metadata infrastructure are shown below.*

- **As a valuable reference tool:** Diffuser™ provides instant access to all the metadata keys that have been published and all your own private metadata keys. Thus, whether using metadata from other organizations, or designing your own systems you will know what the metadata means.
- **As a tool to design your own metadata schemes:** Diffuser™ guides you through the process of developing a metadata scheme, and enables you to publish whatever part of the scheme is appropriate. It makes it possible for you to select your own metadata fields.
- **As a server for metadata information:** as well as an easy to use web interface, Diffuser™ provides a web-services interface so that other applications can make sense of otherwise unknown metadata.
- **As a way to add metadata:** Diffuser™ will allow you to design input forms and, in conjunction with MXFixer™ and AAFixer™, will add that metadata to an MXF or AAF file.

*Not all versions of Diffuser™ provide all functions listed.

Beyond Diffuser™

The metadata that you create with Diffuser™ conforms to SMPTE KLV, MXF, and AAF - the industry standards that allow it to pass safely down the production chain. These standards are supported by a broad range of equipment from many manufacturers. Today you can install systems to capture, create, edit and deliver metadata-enabled content.

Metaglue's MXFixer™ and AAFixer™ provide key functions for management of the metadata within MXF and AAF files. With MXFixer™ you can cost-effectively add metadata to every piece of content. AAFixer™ allows you to read, enhance and adjust your metadata all the way through postproduction. Then with MXFixer™ you can later retrieve and re-use your metadata in distribution and repurposing.

What you can do next

If you feel you would benefit from advice on how your company can get closer to its business goals, please contact us at:

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Abbreviations and Glossary

AAF - Advanced Authoring Format (<http://aafassociation.org>): A file format that wraps essence and metadata together to encapsulate an entire media project with all information and content.

Essence - the media used within a project, as distinct from the metadata.

KLV - Key Length Value: A method of encoding metadata, the key tells you what the meaning of the value is, the length tells the length of the value and the value is the actual data. Diffuser is designed to manage the meanings of the keys and distribute the meanings to other users.

MXF - Material Exchange Format (<http://www.mxfig.org/>): A file format designed to pass program streams and associated metadata.

Metadata Dictionary - A repository of all the meanings of metadata keys. This is required so that the meaning of an individual piece of metadata is consistent.

Metadata Register - another name for Metadata Dictionary. The SMPTE Metadata Registry is at <http://www.smp-te-ra.org/mdd/>

Obj - Metadata Object: A data structure that holds the metadata for a piece of program material and labels it with a unique identifier.

Schema - The formal structure of data. Often used in referring to the structure of an XML document.

SMPTE - Society for Motion Picture and Television Engineers (<http://www.smp-te.org/>). The internationally recognized standards-making body for this industry.

Wrapper - A file format such as AAF that wraps up information from several sources into one file.

XML - eXtensible Markup Language. A widely used standard from the World Wide Web Consortium (W3C) that facilitates the interchange of data between computer applications. XML documents are in plain text and therefore can be read by humans as well as computers, albeit sometimes with difficulty.

Synonym - A link between two entries in the Metadata Dictionary that mean exactly or nearly the same.

UL - Universal Label - A 16 byte number that is used in several ways. A particular subset of ULs is used as a key in KLV encoding.