mediaMano

The CTO's Guide To Smooth Media Workflows.

Introduction

The digitalisation of media has produced enormous challenges and opportunities for companies in the media sector. Established companies are looking to hold onto their current position, new companies are challenging existing markets and innovative companies are looking to establish new markets. All share one common issue that sits at the heart of today's media company CTO:

- "Do I have the right technology to be able to deliver what my customers and/or installation needs today and in the future?"

Many CTOs, irrespective of what organisation they are in, or where they are in the technology lifecycle, will answer with broadly the same reply:

- "Almost"

It seems that this "almost" reply is for very good reasons. Think about these factors:

1. You need scalability because you need to handle big volumes. But big, scalable systems are typically less flexible. So they don't quite hit the spot as much as you would like.

2. Customers' requirements have a bad habit of changing. And big, scalable systems don't like to change.

3. Competitors have a bad habit of providing products and services that you have a hard job matching.

4. Your marketing people are constantly asking you to deliver things that are costly in terms of manpower or systems. It's not that you don't agree with them, it's that it's difficult to deliver with your current technology platform.

The here and now for media workflows

When faced with the challenge of improving workflows, the natural tendency can be to turn to existing vendors. And the initial reaction can be very positive. All vendors have a temptation to believe that their technology can solve all problems, but realistically it cannot. Introducing new vendors or products into the existing mix can bring new problems. The table below shows a simple summary of the situation faced by CTOs when deciding with whom to work on the development of extra workflow capability:

Option	Advantages	Disadvantages
Extend functionality with an existing vendor.	Known entity, good understanding of your set up. Knows their own existing installation well.	Potential difficulty in meeting exact requirements. Drift towards channel in a box.
Bring in a new vendor.	Capable of adding the specific functionality, plus possible other useful features.	Lots of overlap and incompatibility. Difficulty in unbundling.
Use a consultancy.	Can solve the specific problems without affecting existing workflows.	Often lack specific industry understanding, expensive, long development times.

Is there a different way to look at this?

The first thing to mention is that your workflows in a media company are very similar to the way production works in a factory. The product that passes through your hands begins with some kind of ingest, or creation process, and then it passes through some kind of value add process. Finally, it gets distributed out somewhere to be used.

So an aircraft factory brings in steel and engines, seats, windows, computer systems and so on, it assembles them all together, then sends them off to the airlines to be flown.

With perspective, these aircraft, and the work people do on them, can be seen.
Also, progress can also be seen, since the aircraft move along the production line at 2 inches per minute.

If something is not being done at a specific moment in time, or things are going back and forth, it's all visible.

As a media company CTO, you have the same structure. Your raw materials are your footage, your produced media, your stock clips. You add value to those media in a variety of different ways, then your end product is made available for distribution.

So you understand the concept of a workflow. But the question is: Does everybody involved have the same understanding of the workflow? Do you get mixed up between how things should be, and how they actually are? If you actually have documented your processes, have you documented how they should work, or how they actually do work?
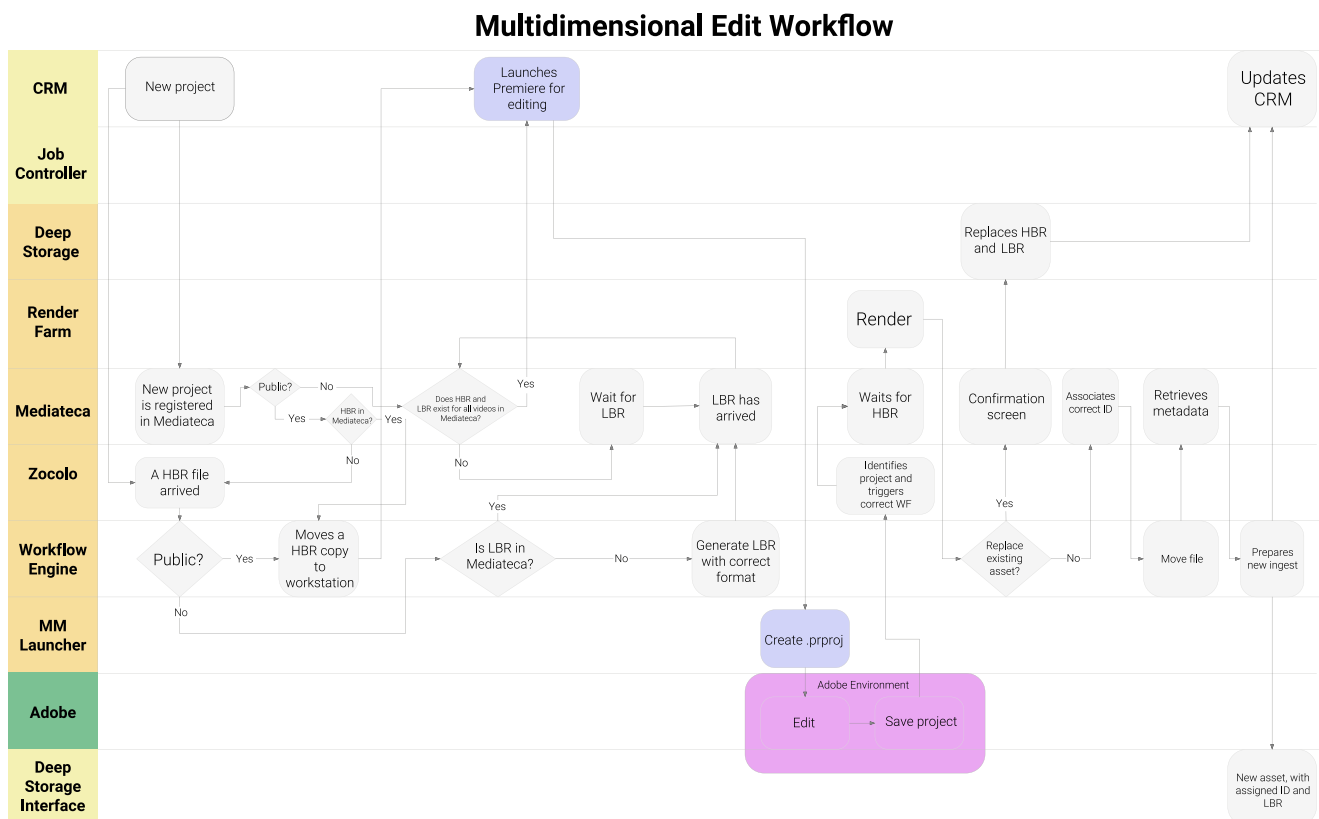
When it comes to analysing processes, you should always be clear as to whether you are talking about "as it currently is", or "as should be". They are often very different. It could be that you are using significant amounts of people's time in workarounds and patches just to get the workflow running properly. If you are only documenting "as it should be", you'll be missing situations as they are, and taking decisions based on misinformation.

Here you are at a disadvantage in comparison with our aircraft manufacturing colleagues. In their working environment, people's actions, and the progress of work, is visible. But with media, it often isn't visible. You can't see how much time people are spending with workarounds, with methods that are extraordinarily inefficient, and with simple mistakes that are adding extra effort downstream. That's why it's so important to investigate and document what is really happening.

Functional Flowcharts

To get control of your processes, we recommend using functional flowcharts. These are flowcharts that show different departments functions as swim lanes, which enable you to visualise the interfaces between departments. When the flow goes horizontal, that's within the same group. A vertical flow indicates an inferance. From a process point of view, it's the vertical movements that give you the most problems.

Why is that? It's because these vertical movements, the "jump" between swim lanes, are actually like jumping over walls. Different departments and people don't understand in detail what their colleagues do.

Multidimensional Edit Workflow

They have to make assumptions, and they inherit requirements that are long since out of date. Similarly, when no one has a full view of the process, things can get into loops that make no sense, but are not actually seen by anyone.

Finally, when you document your workflows as functional flowcharts, try to document what really happens, in all its detail. You will probably run out of space to include all of the things people have to do to make things run smoothly, but once it's documented "as is", it's much easier to identify how specific and often simple changes can make things better.

The real, hidden cost of inefficient process is found in the detail, so the investment in time to improve things pays dividends.

This is a real life example from a project we have been involved in. The complexity of the process is not apparent until you get down to the level of following the flow of activity and logic around the different systems and agents involved in delivery.

## Flowchart after reality check
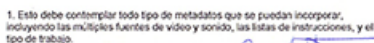
State diagrams

Many CTOs will be familiar with State Diagrams. These are, in our opinion, the best way to link functional flowcharts with system design.

A state diagram allows you to document the different "states" that exist within a particular process. Take as an example the versioning of a documentary. You have the documentary within say a MAM or CMS, and you need to sell it to a different market that requires additional audio and subtitling.

From the time the work order comes in, different states will be achieved. For example, "work order received" is one state. "Work order processed" may be another, and "sent to agency for subtitles, waiting for reply" another. In order to progress from one state to another, certain events must take place.

State diagrams are understood by most technical people. They are one step more technical than functional flowcharts, but the big difference is that they are close enough to a system design document to enable a clear and unambiguous communication between the client, the project manager and the development/implementation team.

State diagrams should include beginning state, end state, and a full description of the different system states that may exist between those limits. They should include the transitions and events that cause those transitions, along with any actions that should be executed upon entering the state. It is important to remember that State diagrams must be absolutely precise. There can be no room for interpretation in the description of any aspect of them.
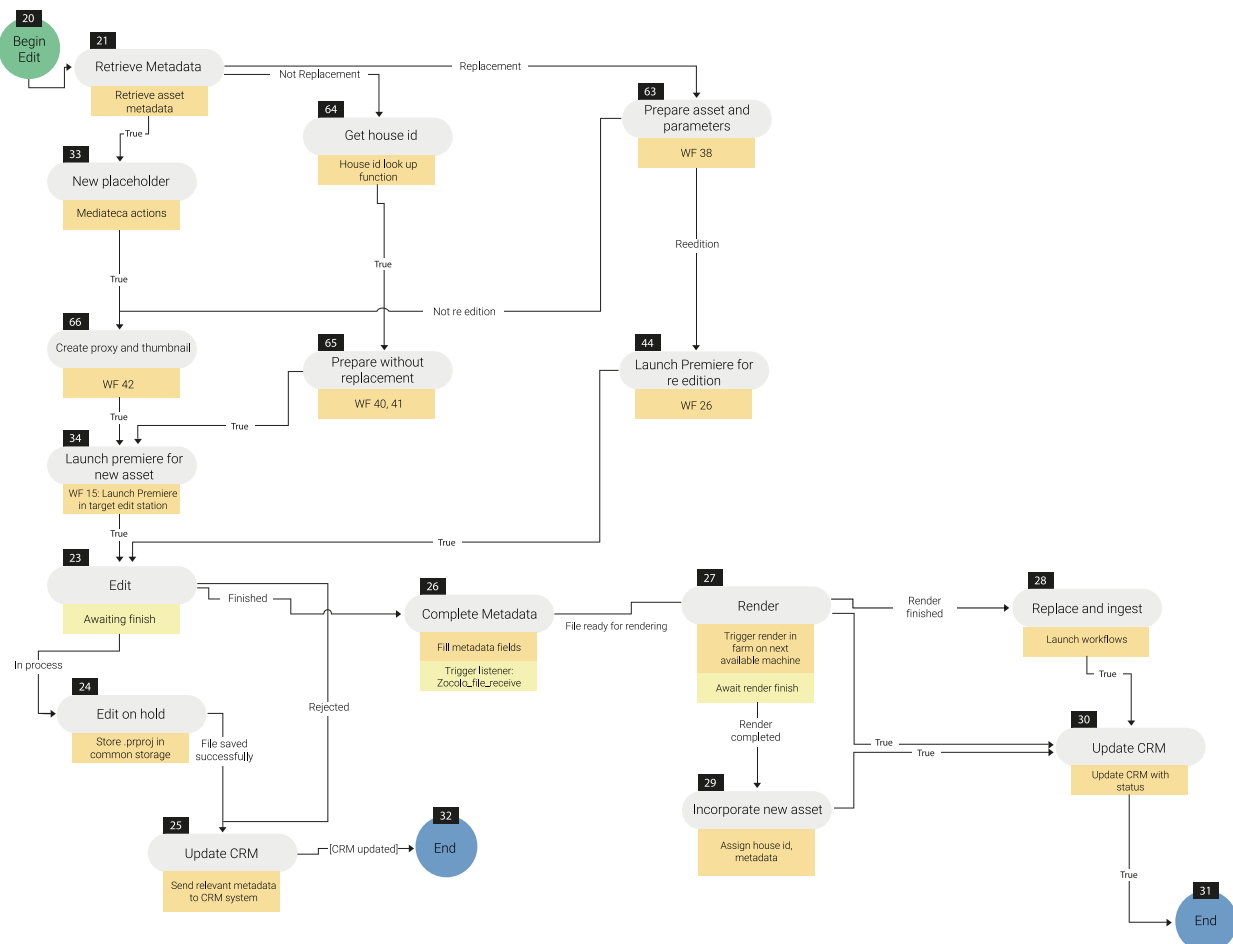
Conclusion

The difficulty in changing focus from systems based thinking to workflow and process based thinking should not be underestimated. The pace of change will not slow, competition will not cool down and customers will not lower their demands or expectations, so in order to stay competitive this change must happen in any organization.

By applying these concepts, it becomes much easier to see where the areas for improvement are. By having more focus, the vendor decision is made easier, because you are now armed with specifics that vendors are forced to answer with yes/no questions, rather than more generalist questions that are easier to fudge! In the long term, the right choice of vendor benefits everyone.

About Mediamano

Mediamano provides highly flexible, module based workflow solutions to the broadcast and professional video sectors. Based in Madrid, Spain, the company provides Ingest, Production, Archive and Publishing solutions to Tier 1 customers in Europe, the Americas and AsiaPac.

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