

## DIGITAL MEDIA: DELIVERING ON THE PROMISE



A Frost & Sullivan White Paper

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## EXECUTIVE SUMMARY

Digitization today pervades every aspect of our lives and has transformed how we consume content. The mass consumer market is demanding content on-demand, anytime, anywhere, on any device. Broadband proliferation has led to new channels of video distribution and an amazing array of business models that are trying tap into the lucrative and growing market for next generation video services.

Along with this tremendous opportunity and promise there are many challenges. Rapid changes in the market have sent content owners, distributors, aggregators, and syndicators scurrying to find technology to enable them to fulfill consumer demand and support emerging business models. Lack of awareness about available product and service options has caused many companies to invest in multiple technologies that have been difficult to integrate or get a healthy return on investment. This paper deals with the pain points faced by Broadband, New Media and Broadcast companies trying to capitalize on digitization and how these challenges can be overcome through prudent technology selection.

## WHAT'S THE BUZZ ABOUT DIGITAL MEDIA?

Over the past decade Digital Media has become ubiquitous across organizations and geographies. Increasingly companies around the world and in all vertical markets have been trying to harness the value proposition offered by a digital workflow. The communications, media & entertainment market has been moving forward to capitalize on a digital workflow especially with the emergence of next generation video services spanning broadcasters, broadband and web-based new media.

Frost & Sullivan's research on the Digital Media market spanning the past decade and the entire value chain from content acquisition down to content delivery shows the market accounting for billions of dollars in 2008. Just the storage and media asset management components together achieved \$6.5 billion in global revenues for 2008. The storage and content management markets are expected to grow at a combined CAGR of 13% through 2014 despite a significant dip in 2009 due to longer sales cycles caused by the economic slowdown. Adding in the professional services and SI components, this market balloons to over \$10 billion in 2008 and is expected to more than double its size by 2014 at a CAGR of 11%.

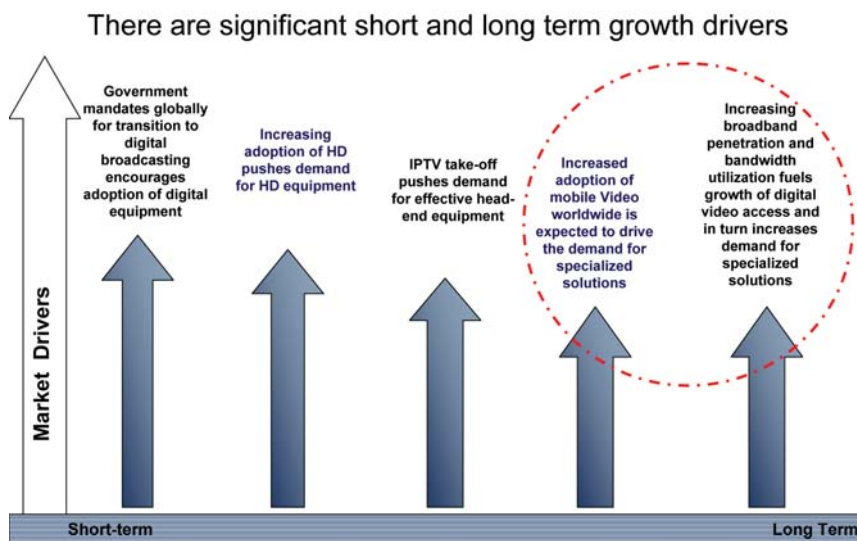
What is powering this growth? Despite the global recession and longer sales cycles, the Digital Media market has been surviving very well. Growth rates for individual markets within the ecosystem vary but are still projected to grow at a very respectable overall market average of between 5 and 10 percent over 2009.

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“Fuelled by government mandates and the value proposition that Digital Media brings to the table, companies now realize that the Digital Media revolution is here to stay and is no longer a leap-of-faith.”

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Fuelled by government mandates and the value proposition that Digital Media brings to the table, companies now realize that the Digital Media revolution is here to stay and is no longer a leap-of-faith. Reams of tangible proof are now available ranging from the elimination of costs associated with lost or misplaced content, cycle time acceleration and increased collaboration to increased revenue through content and resource repurposing. Consumers are now demanding tailored on-demand content anytime, anywhere and on any device while themselves becoming part of the content creation process. Content providers are scrambling to put the technology together to tap into this lucrative market.



Despite these obvious benefits there are pitfalls. Many companies still struggle with the adoption of a digital workflow management tool. Workflows can be very sophisticated, depending on content volume and industry - workflows of broadcasters, broadband providers and Web based new media providers can all vary significantly. The trouble is that there are as many gaps as there are available technology choices. With a multitude of competing standards and technologies that are not necessarily interoperable, media companies are caught between a rock and a hard place when rolling out workflows on shoestring budgets.

Couple this with convergence –on the demand side as well as the supply side – and the efforts are that much more complicated. A broadcaster is no longer just a broadcaster but also needs to provide its content over the Web. A Web-based media company needs to be able to repurpose its content to deliver to a plethora of devices. An IPTV provider needs to get market share from incumbents by providing time, space and platform shifted content on-demand.

“The trouble is that there are as many gaps as there are available technology choices. With a multitude of competing standards and technologies that are not necessarily interoperable, media companies are caught between a rock and a hard place when rolling out workflows on shoestring budgets.”

## **GROWING PAINS**

Every vertical is invested in Digital Media in various forms. Digital Media customers include enterprises trying to harness video, images and animation for corporate and marketing communications as well as the communications, media and entertainment markets where post-production houses, studios, broadcasters, broadband companies, New Media companies, cable MSOs, DBS providers are all deploying Digital Media to find workflow efficiencies and monetization opportunities with next-generation video services. Regardless of vertical, companies in all these markets are faced with content management and distribution challenges stemming from legacy systems, silos and manual workflows. For this paper we will look at three key markets within the Communications, Media and Entertainment space: Broadband, Web-based New Media and Broadcast.

### **Broadband**

Most telcos are trying to rapidly move to triple and quadruple play models to compete with Cable MSOs and DBS providers who have been in the market for many years and have a strong subscriber base. Without the luxury of time, telcos are trying to figure out the quickest and easiest way in which they can design and integrate the content workflow and their transactional/process workflows so that they may effectively compete against the incumbents by providing anytime, anywhere, any-device on-demand content.

For telcos the most important aspect is providing high quality content across multiple screens while managing the complexity of a multi-channel delivery and the associated contracts and transactions in a highly regulated market. They must do this while lowering costs and future-proofing themselves.

Considering how complex the distribution model is for IP delivery, inconsistent quality of experience can hurt telcos trying to get market share from the incumbents. Telcos need to consistently monitor and archive content with multiple systems. They have to react rapidly and fix issues with IP streams while suffering from limited flexibility due to traditional, proprietary systems that do not support constantly evolving distribution models. Telcos also struggle with quality of service and trying to prove or meet contract requirements. Added to this is the high cost of operating multiple systems to cover different distribution mechanisms.

Telcos need to schedule content and advertising to multiple delivery platforms simultaneously, handle video on demand (VOD) content as well as live channels while also controlling rules of copyright and advertising contracts. In a nutshell telcos have to contend with the unreliability of the traditional, often inflexible existing broadband architecture, costly and slow manual processes that are built on inefficient siloed, disparate and proprietary technologies that constantly challenge the ability to access content efficiently and reduce the potential to monetize content. Add in concerns about systems innovation,

future-proofing and cost reduction - telcos have a full plate.

### **Web based New Media**

New Media is synonymous to the Wild West, where there are few standards and almost anything goes. The ability to start a user generated site takes little effort compared to setting up a broadcast station or IPTV service. This has led to a myriad of business models and technologies with almost no control mechanism in many cases. This has led to litigation and high costs due to manual, siloed and highly inefficient workflows.

New Media Aggregators/Syndicators/Distributors are seeking efficient, automated and integrated workflows that enable them to manage content, contracts and transactions efficiently, while providing them the flexibility to re-render content for multi-channel distribution.

As with the broadband market, the New Media market still in its infancy and has been plagued by costly and slow manual processes that have been built upon inefficient, siloed, and disparate proprietary technologies. Whether transcoding, distributing, or collaborating on content, companies struggle to archive, manage, and maintain large volumes of digitized content.

The sheer increase of content has also seen an increase in the formats the content is encoded in, making content distribution from the aggregator to the distributor challenging to say the least. With no comprehensive repository standards many new media companies are buckling under the pressure of managing an explosion of unstructured content. Many of the business models out there to support the New Media supply chain have not been built for digital distribution. Throw in the utter chaos around the migration from paper contracts and tapes to digital delivery formats and you have a perfect storm. This is why New Media companies have been unable to silence their critics who constantly question their viability.

### **Broadcast**

Similarly, broadcasters have been typically trying to juggle many different proprietary technologies and integration challenges. Apart from the integration nightmare that they constantly face, the amount of original programming and various different stations at different stages of digitization produce a unique set of problems in terms of organizational, transactional and creative silos; the inability to effectively monetize content using new media, budgetary challenges for technology purchasing due to infighting as well as the need for strong regulatory compliance.

Broadcasters want cheaper off-the-shelf technologies that can easily integrate within the workflow and reduce the reliance on proprietary systems, thus reducing capital expenditure. They also need a versatile system that can help integrate their content with a

Web-based interface so they can accelerate content monetization by using new media channels to create additional syndication opportunities and garner more eyeballs to support Web-based advertising.

Unfortunately broadcasters have to contend with costly and slow manual processes requiring manual tape exchange despite the desperate need to go digital end-to-end. This was the biggest pain point pointed out by almost every broadcaster Frost & Sullivan spoke with for a global survey in 2008. As with the other markets and even more so for broadcasters, inefficient siloed, disparate and proprietary technologies reduce their efficiency. Geographically dispersed operations amplify manual and unlinked processes deficiencies. Further the IT group at broadcast station is growing in power creating further internal clashes over budgets and responsibilities around content management within these organizations.

Workflows are thus still pockmarked with silos and a lot of manual intervention is required. With content and content companies going digital, online as well as international, the ability to manage the associated contracts and the ability to monetize and cross publish media has become a major pain point despite its promise.

## **AND THE WINNER IS...**

The result has been a field day for system integrators (SIs) and vendors who have jumped on the opportunity to provide a solution for the missing glue that would bind such disparate and siloed workflow components seamlessly into a comprehensive, efficient and profitable tool. Unfortunately not every SI/vendor has the necessary domain expertise or product capabilities to do everything you expect. If you have time and the deep pockets to throw enough money at your problem, sooner or later you will have a workable solution, but in economic times like this everyone does not have that luxury and more importantly – the market is extremely dynamic.

People can only guess what the next big killer application would be. Companies need to future-proof their investments as best as they can so that they are nimble enough to proactively and efficiently adjust their business and technology processes to stay profitable and grow with iterative investments without having to re-architect everything from scratch every few months.

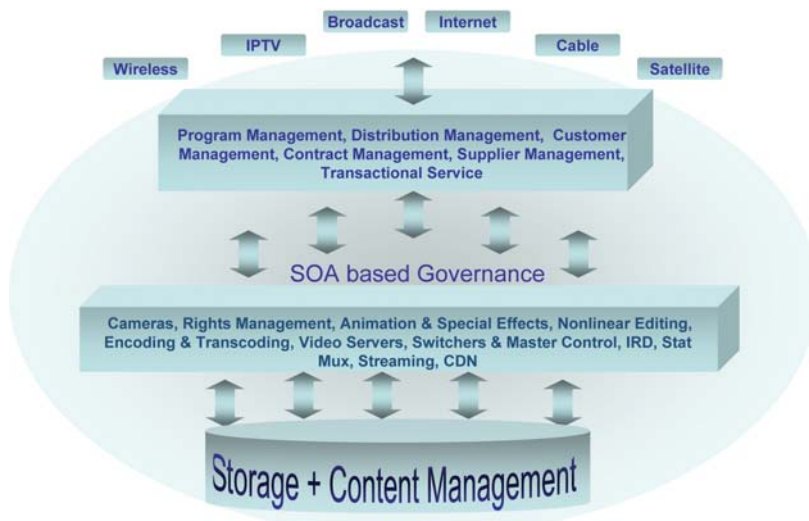
Companies should look at modular instead of a monolithic approach for their digital workflows. In most cases, the solution should be as unobtrusive as possible and adapt to the customers business model and not the other way around. Companies should not have to rethink and change their business models to justify their technology investments.

Exploring SOA-based workflow governance is also an option that companies need to seriously consider. A Service-oriented Architecture (SOA) allows for the integration of various technology components through the coupling of functions required for a particular

workflow process. By creating such interoperable “service” modules for each process, the manageability of these complex workflows increases and the processes are repeatable and trackable. SOA allows a better alignment of IT with business goals while allowing for the maximum reuse of IT assets. Not only can SOA-based point solutions be spread horizontally across the workflow from ingest to distribution, but they can also provide critical functions at the micro-level.

To put SOA and workflow governance in perspective the chart below illustrates the large array of technology components required on the asset and process layers to enable a Digital Media workflow. At the heart of any workflow would be a storage system married to a repository service, such as a content management system, which becomes the nerve center and collaboration hub of any workflow.

Complexities of these workflows, as discussed in this paper and seen below, can easily set the stage for inefficient, siloed, disparate and non-collaborative processes. By exploring architectures like SOA, as discussed earlier, using Web services and effective governance rules, companies are now looking at eliminating workflow silos and bringing disparate systems and processes together in a collaborative environment. Companies are additionally reducing manual intervention by using SOA-based point-solutions to automate processes around content management, scheduling, monitoring and delivery.



## WHAT ARE YOUR VENDOR OPTIONS?

This paper has highlighted the huge market potential for SIs and product vendors that can help narrow the gap that exists due to the siloed, disparate and proprietary technologies that constitute any workflow today. This has led to many vendors and SIs to adopt SOA and Web services to provide point solutions or integration services. These products and services are designed to address the pain points discussed earlier in this paper. Products and services crafted to erase these pain points center around providing storage, content management, traffic management, scheduling, monitoring, contract management and integration services among other functions necessary for a robust workflow.

“According to Frost & Sullivan research, implementation of storage and content management solutions can result in a 5:1 reduction in time spent on the management of media assets.”

Companies like Microsoft, IBM, HP and EMC provide options for collaboration and integration platforms. Microsoft has evolved its SharePoint platform to create the Interactive Media Manager to foster workflow integration and collaboration. IBM's SOA-based Media Hub framework and Digital Media Center focus on the storage, collaboration and integration aspect of workflows. HP has married its domain expertise in the Communications, Media & Entertainment space across its professional services and product groups to provide point-solutions as well as system integration through a holistic approach. EMC Documentum leveraged with EMC storage solutions is also focused on content management, storage and collaboration.

SI's such as Accenture, HP, TCS, Infosys, HCL, IBM Global Services, EMC Consulting and IT Services and Cognizant have started building domain expertise to start tackling integration issues. Through numerous deployments, these SI's have been building best practices for integrating disparate technologies

Apart from these vendors, there are many others that focus on providing media asset management solutions, storage products and other point solutions that enable the tracking, scheduling and monitoring the delivery of content.

To put these offerings in perspective the next section of this paper will look at a vendor example to illustrate how these solutions can help companies accelerate the deployment and monetization of digital content. The next part of this paper will explore HP's offering in this space as an example.

## **HP DIGITAL MEDIA OFFERING – A QUICK OVERVIEW**

HP has leveraged its business and IT consulting services along with its deep storage management expertise to create a unique structure that provides a high level of customer engagement involving all manner of stakeholders.

Using SOA-based workflow governance as the backbone; HP has been developing modular point-solutions for the Media & Entertainment market that encompass business needs, core infrastructure elements and workflow. The following is a quick overview of HP's offering:

### **HP Media Workflow Master**

One of the key pain points we looked at earlier in this paper was around the ability to monitor and track process activities within the workflow. HP Media Workflow Master is an enabling technology that allows companies to integrate and streamline the entire media lifecycle value chain across isolated departments and organizations. HP Media Workflow Master monitors and tracks both automated and manual activities helping reduce re-work costs and inefficient workflows. Based on SOA, the design enables integration with existing

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“Media Storage deployment enabled a large European broadcaster the ability to allow multiple users to browse, access and export content freely and flexibly. The solution enabled data to be shared, stored and transported across the company as never before while reducing OPEX by limiting the need of handling and transporting video tapes”

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and future environments without compromising existing assets.

## **HP Media Storage**

Another critical point of concern discussed in this paper has been the inability to effectively and efficiently manage content regardless of vertical. At the infrastructure core HP offers the Media Storage solution – a centralized storage platform for high-speed content workflow and integrated archive and retrieval of media assets. HP Media Storage allows simultaneous access to a single file and the transfer of massive data with the scale to handle up to petabytes of data. Media Storage enables the virtualization of a single pool of shared storage on an existing network. Using Media Storage, companies can streamline the post-production process and accelerate cycle time for their content. The solution enables companies to create cost-effective digital archives and repurpose content to generate new revenue streams.

## **HP Control Room solution and HP Traffic Control solution**

Looking back at the earlier part of the paper, we identified challenges faced with scheduling and monitoring the delivery of content as another key pain point along with the difficulty of managing the quality of experience. At the workflow level in the Media Control solution family, HP provides the HP Control Room solution and the HP Traffic Control solution. These are point solutions built using SOA to enable better management and scheduling of content.

### *HP Control Room solution*

The HP Control Room solution modules are designed for broadcasters, broadband and New Media providers to manage the quality of experience over IP and integrate distributed operations and video and service events. Media companies like broadcasters, broadband and New Media providers can reduce their capital expenditure by leveraging off-the-shelf servers or workstations and even reduce operational costs by allowing effective resource utilization for monitoring multiple displays.

HP Control Room provides the ability to track content streams at each step of the workflow across the asset lifecycle from ingest through distribution thus creating a control mechanism that helps with compliance and governance. There are three modules within the solution:

The video wall functionality enables the play-back of multiple IP streams or local files on a single display as well as across multiple displays.

The ingest archive feature enables real-time timestamp overlays, transcoding and recording of multiple IP streams. The only limitation to the duration of recordings is the allocated storage space. Companies can increase their ROI by leveraging multiple stream types

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“By deploying an IPTV workflow from HP this regional European telco was able to manage overall content (live TV feeds and VOD library) more effectively and doubled the subscriber take-up rate in ‘08 by offering new enhanced services while reducing cost per channel, infrastructure and operations by close to 65%”

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instead of a single baseband video.

The media monitor functionality combines the video wall and ingest archives to display alarms overlaid on the multiviewer and trigger recording of faulting channels. The media monitor provides customizable pre-defined templates for easier selection of key performance indicators based on the customer's business rules.

#### *HP Traffic Control solution*

Broadband providers and traditional broadcasters are increasingly deploying New Media strategies. Taken in perspective with device convergence, the need to re-render content in the appropriate format, manage all the outbound traffic with intelligent ad-insertion while maintaining quality has become very critical. The HP Traffic Control solution is a point solution also based on SOA and targeted towards broadband providers, broadcasters and operators providing mobile video.

The solution enables simultaneous scheduling of content and advertising to multiple delivery platforms such as DVB, IPTV, WebTV, and 3G. The solution allows media companies to handle VOD content as well as live channels while enforcing copyright rules and advertising contracts. This functionality allows for the broader use of rights and contracts – a perpetual priority for content owners.

#### **THE BOTTOM LINE**

The Digital Media revolution has created an unprecedented opportunity for traditional media companies as well as New Media companies to exploit the potential of the digital age, to launch innovative products and services, and to satiate the never-ending demand for anytime, anywhere, any-device on-demand content. But with these opportunities come challenges.

The vendor community has stepped up to the plate to meet these challenges, as seen through the HP example in this paper. By harnessing domain expertise and available technology to create solutions that are supportive of changing and emerging business models, vendors like HP are leading the way in creating the infrastructure and best practices that will enable companies to deploy their Digital Media initiatives faster, cheaper and more productively.

Digitization coupled with SOA and Web services have created a landscape that puts customers in a situation in which they have never been before – they now have choices. Companies need not be shackled by proprietary systems and suffer integration headaches anymore. The market today offers products and services that have been built over a period of time through careful understanding of the pain points customers face. The only real limitation today is on the customer's end. It is imperative for companies to do their homework and chose products and service that best meet their needs and not invest in

technology for technology's sake. With infrastructure and technology finally available to support the huge end-user demand for digital content, it's time to accelerate the Digital Media revolution and deliver on the promise!

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