Original Article

Emerging use cases and technology for creative group production are disrupting the DAM marketplace: Creative executives are demanding better tools for the production groups

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ABSTRACT Moving beyond DAM, cloud computing, user mobility and social computing have changed the way software is designed, deployed and used. Meanwhile, DAM systems have stagnated and continue to build tools for IT and technology-focused individuals rather than for creative groups. Creative executives are demanding better software for their production groups and are sparking a new wave of technological innovation that will fragment and disrupt the DAM market.

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INTRODUCTION

As a company with roots in creative production background, Industrial Color Software began building digital asset management technology only because there was nothing on the market that could handle our initial requirements. We needed a way to upload multi-day photo shoots (thousands of files are captured each shoot day) and provide access for art directors and creative teams to review using a web browser. The requirement seemed simple, but there were no products that could accomplish the goal. In our

desire to solve a problem for creative users, we discovered that there was a market of products called DAM, but that these products did not provide the ease of use and global access that our clients were seeking. The solutions were slow, desktop based, and, worst of all, difficult to use.

Building a comprehensive solution for our creative users required that we build technology at every layer from low-level business logic for rights and permissions to highly simplified user interfaces for actors and creative executives to

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review and approve assets. If the technology had been available for us to simply skin existing components we would have done so, but instead we were forced to architect and implement something new. This is the central opportunity that customers and vendors in the traditional DAM market must seize in order to move technology forward and truly solve the problems at hand. The process of building this new wave of technology will have much less to do with the information technology (IT) teams, consultants and technologists who dominate the landscape currently, but rather will focus on creative groups who are capturing, producing and delivering content and looking for better tools.

People don't want quarter inch drill bits. They want quarter inch holes – Ted Levitt, Harvard Business School

What is the current market for DAM products and ideas? If the market is IT groups and technology teams looking for ways to manage libraries and provide solutions to their technical user constituencies, then the current choices of products and market organizations make sense, but technology has changed expectations and the creators of content are also the content managers. Digital assets are managed as they are produced by the production teams that capture, review, approve, distribute and archive content. To these creative people, DAM often means extra steps imposed by IT for reasons and benefits that are unclear. Creative teams use different tools and have needs that are more in line with traditional desktop creative production software and specialized media production suites such as Adobe's Creative Suite and Apple's Final Cut Pro.

Since content formats have evolved and become fully digital and file based, the limitations of desktop software environments have become more pronounced. Creative projects are not completed by one person, and tools that would be powerful for a single user require clunky and manual workflows to connect creative teams as projects move through the production process. Although there are basic solutions to connect creative desktop software with asset management systems, these are band-aid solutions that leave both

technologies to evolve on separate tracks. Many of these integrations break when component tools are versioned or when new media types are introduced into the workflow. In addition, most asset management systems cannot be accessed from outside the company walls.

The typical day for a creative professional involves coordinating production logistics, managing the content approval process, sending and receiving files, managing creative and post production vendors, dealing with talent and creative executives, and managing tight deadlines. There is no time for digital asset management, while the shoots and projects continue to build up fire wire drives under the desk. The IT department is often viewed as an obstacle more than a solutions provider.

The IT and creative departments are not really speaking the same language. They do not watch the same TV shows; they do not live in the same neighborhoods; they do not read the same books; and they certainly do not shop at the same stores. These are sweeping generalizations to which there are, of course, exceptions but visit enough organizations and you will quickly come to a similar conclusion. If IT is buying the software and IT does not understand the creative users, then who is building software for the creative users beyond the desktop?

What are DAM products anyway? They range from simple desktop software costing less than \$100 to enterprise solutions costing millions. Enterprise vendors would argue that the simple solutions are not DAM as they are fairly limited, but they do provide value for the individuals and small groups who buy them by solving some basic problems. Meanwhile, the enterprise solutions are often not products at all but core pieces of proprietary technology augmented by huge amounts of customized software implemented by professional services teams. Enterprise solutions often address use cases as varied as video transcoding, instant messaging, project management and web publishing. If a customer requests missing functionality, the answer is most often that the vendor would be willing to bolt on new functionality for a price or to gain the customer. DAM technology has evolved in many directions, taking it away from its roots in asset library functionality and into new,

workflow-driven use cases. The next logical step is to expose the logical DAM foundation to the end users, but the end users are not looking for DAM.

BETTER TOOLS FOR CREATIVE GROUPS

Most organizations already have a DAM system in place. What is new is the rising voice of the creative and particularly the creative executive. Successful creative executives are a unique breed who make financial decisions, understand the needs of their creative productions, evaluate new technology, and need to create new efficiencies and economies of scale in their operations. These are the people who will make or break the next wave of technology. What they want are easy-to-use tools that eliminate bureaucratic tasks and allow their staff to spend more time being creative and less time managing assets. Therein lays the opportunity for technology companies to invent, innovate and create.

Building such new tools may prove difficult for incumbent software development companies who are not directly in touch with the creative workflow. A technology culture cannot fully understand how a creative user thinks about their process and tasks. Although the user goals, requirements and specifications created by an engineering group may accurately capture a problem and how to 'fix' it, the result will most likely fall short of the target because the solution is not designed for the end user. What they missed was a real connection with the creative user and a true empathy for the frustrations that difficult software can cause. The mismatch between creative and technology cultures is the single biggest reason why enterprise production tools are often so difficult to use.

We see this often when we are testing new user interfaces. As we are lucky enough to share our space with photo retouchers, CGI artists, video editors, color specialists and other creative production folks at our sister groups within Industrial Color Brands, we test our new tools on them. When we have a new User Interface (UI) that we would like to validate or test, we can go down the hall and watch someone try it for the first time. Once our test users make contact with the interface, their body language will reveal whether we have designed a good

user experience. If they lean in, they are engaged and will start to put the pieces together. They may make some excellent points about what could work better or parts of the task that they found confusing, but we know we are on the right track as they responded positively to the interface as a whole. If they lean back, we know we have to go back to the drawing board. They often scrunch their eyebrows and look distastefully at the screen. They are put off and they fear that every subsequent interaction will be confusing, frustrating and unrewarding. They have been conditioned to respond this way by years of bad interface design and their instincts usually serve them well. Moreover, they have very low expectations to begin with as a result of years of awful user interfaces.

A bad user interface has cascading ramifications as it ripples through a large organization. Something that is difficult for a single user to use is a production disaster for a group of 100 people relying on each other to produce amazing work. Creative executives are the people who feel this pain as they field the complaints and watch the collaborative friction grind down their production process and turn their creative professionals into bureaucrats. The industry known as DAM is not set up to solve this problem. The companies that bring solutions to market to help creative executives manage group production will most likely have roots in creative production.

EVOLVING CONTENT MANAGEMENT – TOWARD SIMPLICITY

Technology tends to follow an evolutionary path toward simplicity. First-generation technology is typically highly complex as it is designed to solve complicated problems for which there are no existing solutions. This technology is often justifiably expensive and the operators of this new technology must master complex but powerful controls. From there, this new technology faces a never-ending challenge toward simplicity and ubiquity. At each stage of evolution the technology is simplified and made available to less technical users to expand its user base. This continues until the technology reaches a state of ubiquity where it is available and usable by just about everyone. A telephone

is a good example of this. Most technology never make it out of the complex phase.

Digital asset management technology is at an inflection point. The next generation of users will require greater simplicity. New products will be built for and marketed to creative executives and the forward-thinking IT groups who actively seek new creative products.

Fortunately, there is a wealth of opportunity for new product ideas. The Internet is getting faster, bandwidth costs are dropping every year, new devices such as the iPad are providing amazing opportunities, and Internet browsers are becoming more stable and standardized. The most significant trend has been the consumer adoption of tools such as Google, Facebook, Twitter and LinkedIn. These tools have been adopted by even the most non-technical people and made it clear that it is possible for software to be usable. The result is that many people have far more powerful and useful collaboration tools available from home than they do in their work environments. This often leads to the adoption of the consumer tools in the workplace or, more commonly, mounting frustration with the seemingly archaic options available at the office. It makes no sense to people that they can update their Facebook page and show images to their connections all over the world for comment and communicate, while at work there are no tools or workflows to accomplish the same goal. The reason for this discrepancy is that software developers in the enterprise market are late to the game and are not culturally structured to build easy-to-use solutions for creative groups.

SIMPLER TOOLS ENABLE WORK-IN-PROGRESS CONTENT MANAGEMENT

Most DAM systems are implemented to manage an organization's archival library of digital content. DAM systems are often extended to facilitate distribution, self service, re-purposing and other features, but the main objective is that content goes into the DAM when it is approved and final. Approved content, however, is only a small fraction of the total asset volume produced in most organizations. The unused images, retouching versions, outtakes and other 'clipping room floor' materials are typically unaccounted for and can usually be found in a

stack of fire wire drives under someone's desk. That person is usually one of the busiest people in the production group, fielding everyone's rush requests for files.

The truth is that content management begins the moment content is created. From the camera, to the desktop workstation, to the fire wire drive, to the office, to the vendors and so on these files are duplicated and versioned for months before they make it into anything resembling a DAM. Meanwhile, there are entire production teams that need the files, to make decisions and collaborate with their vendors and partners, and to deliver final work. DAM technology does not offer a solution for work-in-progress content management. If assets are not systemized before they are final and approved, they are leaking value and generating costs.

WORK IN PROGRESS IS DIFFERENT FROM DAM

The software that creative users work with day-to-day does not visually or technically resemble DAM products. DAM systems are typically built with a 'check in/check out' model. Users load content into the DAM, browse or search to find what they need, then take it out, much like a library. Creative production tends to work more like an assembly line where content is pieced together as it passes through the process. A project may begin weeks before the first bit of content is created and may last months or even years before it can be categorized as completed. Along the way, many people need access and the assets pass through many rounds of review, approval, post-production and distribution. In this paradigm, content is checked in, but then moves along a timeline where many creative users work with it until the production is complete.

Work in progress requires collaborative decision-making and addresses a completely different set of priorities from DAM. DAM seeks to provide technology that will find assets and determine whether a particular user is allowed to have them. Work-in-progress systems give users communication tools to let them determine whether an asset is good enough to move along to the next stage of production. Systems that consider their environments are considered open, whereas systems that do not

are considered closed. The argument for open systems, particularly when considering the requirements of creative groups, is very clear. Work-in-progress systems must have strict security and permissions controls, but the goal of the system is to provide its users with the decision-making tools that match their role in the creative production process. Considering context is a primary requirement for a work-in-progress system as the user needs different tools at different times in a production process.

Rather than duplicating and shipping physical assets, content is systemized once, as early as possible in the production process then accessed by as many users as necessary via applications that are specific to their production needs. In the digital supply chain, it is also possible for business processes to run parallel rather than sequentially. Systemizing assets in a central, accessible location allows multiple users and groups to work at the same time. Removing duplication, enabling early access to users regardless of location, and providing business case-specific tools for groups to work in parallel are important priorities that align software development with business goals of cost reduction and efficiency.

MORE FLEXIBLE PARADIGMS FOR SOFTWARE DEVELOPMENT

Until very recently, most DAM products were available to users as desktop products that connected to proprietary server solutions. As always, user needs as well as the economy changed and many customers started asking for simpler, cheaper solutions. Naturally, many DAM vendors scrambled to develop and deploy ‘SaaS’ or Software as Service offerings. SaaS was then duly championed as the next wave by industry consultants, but the truth is that SaaS is just as vague as DAM – putting a slow, bad user experience into a browser does not make anyone’s life better. Without fully thinking through customer use cases and designing task-specific, easy-to-understand user experiences, vendors will simply recreate the current issues using a different set of tools.

Fortunately, technology has changed and the tools at the disposal of today’s software

developers are very different than they were 10 years ago when the industry was dreaming up DAM. There are three significant shifts underway that lend themselves to better software for creative users:

- Ubiquitous data and content stored in the cloud
- Device-specific software written to maximize the user experience
- Social computing paradigms that enable collaborative workflows

It is impossible to overstate the impact that these three trends will have on the DAM industry in the next 5 years. The biggest beneficiaries will be the creative and non-technical users.

Let us start with the cloud. There is much marketing hype and hyperbole to wade through, but the basic idea is that data and content can be stored in a way that makes it available to users and applications alike. Regardless of who owns the cloud, it is available and people can build applications to access and use the data and content the cloud provides. Taken a step further, the cloud can also be DAM as the data and content that customers are storing require the logic, security and controls that DAM software traditionally provides. It has tremendous value when considering a ‘cloud layer’ that can drive new technology.

Device-specific software and user environments will utilize these new applications and data, giving people much greater mobility. Although browsers are the lowest common denominator in terms of user experience, they have become powerful software delivery methods and are far superior to most desktop environments. The iPhone OS, Android, Adobe AIR and HTML5 are all examples of an industry trend away from the desktop and toward a device-specific model of application development that assumes that data and content will be hosted in the cloud. The upside of this approach is that user interfaces must be optimized for each individual development environment in order to really have an impact.

The final piece of the puzzle is social computing. The social computing paradigm

assumes that users work with other users and not in bubbles or silos. Computing is now an inherently social task, much more so in the work environment where people rely on each other to complete tasks and projects. As projects have gone digital, so too has the supply chain, where people add value to content as it moves through the production process. However, there is a fundamental difference between an analog and digital supply chain in that the digital supply chain is global and non-linear. Once content enters the workflow, it can be made available to anyone in the world with an Internet connection. Rather than a sequential workflow that requires the completion of one task before another can begin, as we might see with a physical product, digital content can accommodate parallel tasks without the requirement that the task owners occupy the same physical location. This is a major shift that is causing creative executives to rethink their production process design. The business requirements for social computing are slightly more complex as the trust model must consider the additional layer of the organization, but this is a good challenge that will force developers to create new social models that innovate beyond the consumer tool set.

To take advantage of the new opportunities created by cloud-enabled, device-specific, social software, executives need tools that maximize the value of these paradigms and provide users with natural, easy-to-use software. We have seen that is not what the DAM industry does best. DAM vendors will have to make tough decisions as they consider whether they want to build engines for IT groups or software for creative users. The digital supply chain will not wait for the incumbents to adjust their products, and so we will see the emergence of new players providing flexible and powerful social products for the enterprise.

A NEW GENERATION OF WORK-IN-PROGRESS TOOLS FOR CREATIVE GROUPS

The availability of simple, usable tools has created a great deal of friction in large companies. Many users are turning to widely available, consumer systems such as Mac, Flickr or YouTube to share content during the production process simply because they get the job done. This is unprecedented. The Internet has made work tools available for free, which is threatening the legitimacy and authority of IT groups. When users perceive that the IT team will not provide tools that apply to their specific needs, users find tools for themselves. This new trend will only intensify as the consumer tools develop and the pressure to work more efficiently grows. This pressure manifests itself most acutely with creative executives who now consider technology as a key element of their management portfolio. If these executives can find tools that meet their users' needs but also satisfy IT requirements regarding security, scalability and compliance, they will own a competitive advantage.

As new content management technology emerges and changes the landscape, there will undoubtedly be both opportunities and threats. Existing players will defend themselves and some may evolve to offer new solutions and ideas. New players will push to capitalize on the change and drive new technology choices for creative users, bringing energy, passion and incredible solutions to redefine how we interact with digital media. Regardless of how the near future unfolds, it will be a very exciting time that will bring a disruptive challenge to the concept of digital asset management. With growing choice and price pressure, creative executives will finally have tools that deliver opportunity rather than complexity for their production teams.