

# Next Generation ECM for Media Production Workgroups

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## Introduction

This paper proposes an enterprise content management (ECM) system solution that employs next generation consumer-based media technologies. The case is built on the “Digital Design Group” (DDG), a small “boutique” workgroup of content designer/creators and their designer/manager (**Figure 1**).

DDG is part of a Fortune 100 company (re: “the Enterprise” and “Corporate”). The DDG produces special purpose, “one-off” video and graphics content that is used exclusively within special venues, in most cases large, complex theme park attractions. Corporate IT provides generic global-level I.T. services for DDG, such as email/scheduling (MS Exchange server & Outlook). Such services are not part of this assessment.

In analyzing DDG’s current content management (CM) capabilities, we apply three key “dimensions” of the Wipro ECM3 Maturity Model. We also touch upon other parts of the ECM model as needed.

There are a number of disparate DAM and ECM systems in use in the Corporation. DDG has been too far removed and their workflow too dynamic to benefit from these. However this needs to change. The DDG’s content management requirements need to be part of an enterprise-wide knowledge management (KM) initiative.

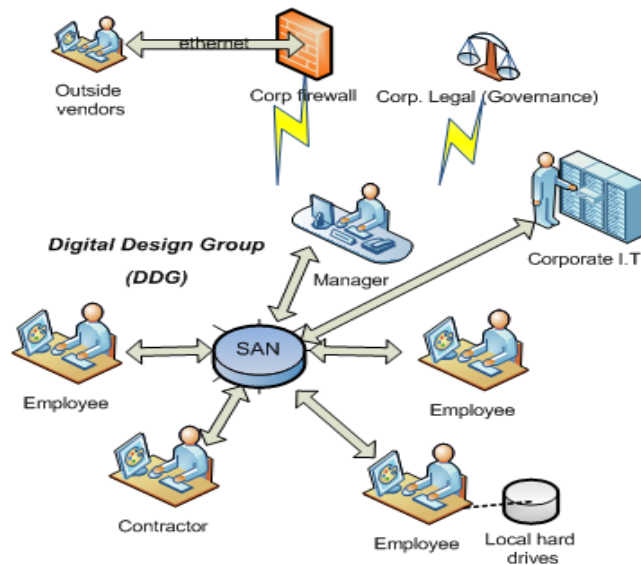


Figure 1: Digital Design Group’s CM architecture

## 1. People/Human Dimensions

We start by looking at the “people” part of the ECM model, including the users’ and manager’s usage behaviors. The ECM3 dimension of “Alignment” is defined

as the “extent of effective Business-IT collaboration, understanding and synchronization.” Focusing on this dimension, we would expect to see DDG staff “comfortable dealing with content technologies and associated processes (ECM3 p28).” There should be “strategy development between Corporate IT and DDG, with frequent reviews using proper metrics” (ECM3). It is important to develop valid ROI calculations from such metrics, rather than relying on published “overwhelming ROI calculations” in the recent ECM literature (Munkvold, et.al.). Such ECM system metrics should be continuously monitored to maintain alignment with changing business drivers (ECM3, p27).

In general, we expect there to be active, ongoing collaboration between Corporate and DDG, with both sides having an understanding of the importance of ECM as a core discipline.

### **Current State**

DDG’s maturity level in this area is stage 2/Incipient at best. Overall, the DDG, Corporate IT and Corporate Operations are poorly aligned. There is a general lack of understanding of “needs” on all sides. Gaps exist between the DDG manager’s understanding of content management practices and ECM solutions that have been implemented by Corporate IT for similar “peer” groups elsewhere in the enterprise. No valid ROI metrics are in place to monitor and justify improving DDG’s CM processes. What CM plans DDG has made in the past have been done in a vacuum, with minimal input from Corporate IT or peer groups within the enterprise.

### **Desired Future State**

Clearly there needs to be more synergy between DDG, Corporate IT and Operations. DDG management should work to “develop a shared vision across the key stakeholders to craft a “To Be” ECM framework” (ECM3 p21). This could include starting to think about ECM systems in the context of shared services architecture (ECM3) with the enterprise, rather than the current mindset of protected, siloed content.

Though Corporate IT plays an important role, “too often enterprise leadership places ECM under the stewardship of the Chief Information Officer (CIO) instead of the Chief Operations Officer (COO)” (Module 3). This appears to be the case in the Corporation.

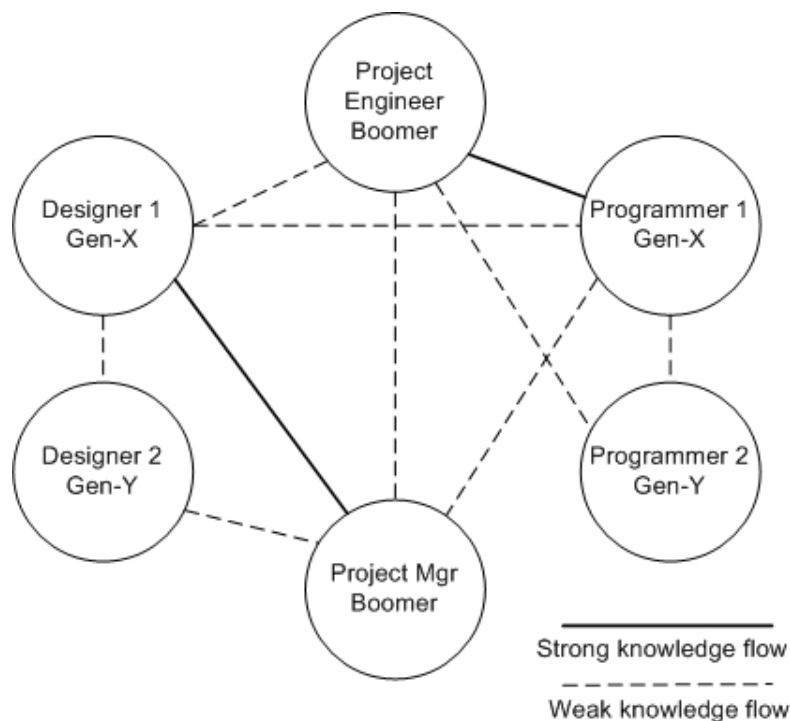
DDG’s manager needs to take the lead in an ECM initiative for his group. He can then establish the necessary communications between the stakeholders. Training of DDG staff, specifically updating of user skills in managing content and utilizing information technology will be important (Munkvold, et.al.).

Tools such as weblogs can be deployed to monitor and compile statistics of user activities during all phases of the ECM cycle. Focusing on certain “categories of return,” (Farbstein p.8) pre-and-post implementation ROI can then be determined. Justifications and evaluation of investments in ECM can then be made to corporate management (Munkvold, et.al.).

DDG’s management should be working to integrate the ECM strategy into an enterprise-wide KM strategy to take advantage of synergies between knowledge management and content management (ECM3, p27).

DDG management should consider KM-related issues as described in the analysis of the “Edge Team-Distance Collaboration” scenario by the author (Mulally, 2009). As shown in Figure 2, a media design organization similar to DDG’s had KM challenges that were exasperated by distance collaboration in a virtual workspace. Situational, and in this case generational diversity affected group performance. DDG needs to take a holistic view to ECM related issues, and consider the KM implications of their strategy.

**Figure 2: KM issues with distance collaboration in a small media production workgroup.**



## 2. Process/Information Dimensions

Looking now at the “Process” category of the ECM3 model, we will focus on the key dimension of Content/Metadata – the “extent to which enterprise has analyzed its content and metadata” (ECM3).

Understanding DDG’s content creation process, and concurrently managing and leveraging metadata is critical, as “the core of any ECM solution resides in understanding of the content itself and its role in the organizational context” (Päivärinta & Munkvold). However we cannot realistically expect busy content creators, under insanely demanding deadlines, to gladly start adding more metadata to their content (though that would certainly be nice!). However opportunities do exist to automatically extract metadata and do tagging that will

greatly enhance search and organizational capabilities without resulting in “routine overload” (Munkvold, et al p95). We should see combined efforts enterprise wide to devise automatic tagging and metadata extraction schemes during the content creation process; practices that should then be disseminated and shared with users company-wide. And there must be procedures devised and implemented for creating metadata at the close of project phases, or upon completion of certain “deliverables.”

In Päivärinta & Munkvold’s surveys of similar organizations they found that “metadata should provide information about a content element or configuration and its production, ownership, and intended utilization context to facilitate its retrieval or re-use for organizational purposes.” We expect to see these sorts of metadata creation and tagging procedures implemented by DDG management into the normal workflow.

### **Current State**

DDG’s maturity level with “content/metadata” is between Level 1/Unmanaged and Level 2/Incipient.

The DDG members are highly experienced with a handful of professional applications, primarily Adobe After Effects, Apple Final Cut Pro, Photoshop, Adobe Illustrator, and Apple QuickTime Pro. There’s dozens lesser used applications with numerous filters and plug-ins for each.

Though each user is extremely skilled with their core applications, CM related skills vary considerably. Some come from highly structured “work centric” environments such as feature films, and therefore have strong CM experience. Others may have minimal CM experience, with a “Mac-centric” liaise fare attitude towards technical discipline. This can result in poor file naming and troublesome ad-hoc file management practices. Their experience with metadata and tagging is minimal if at all.

The DDG manager and his assistant manage labor and resource scheduling, and oversee the workflows, which can be parallel or linear (Hannon Hill), depending upon the project and the format of the deliverables.

### **Desired Future State**

In the Prepare phase, a data asset inventory (information audit) should be performed, with buy-in from corporate management. For metadata standards and schema development, planners should start with an assessment tool to chart-out the amount of metadata to apply during the lifecycle of a data asset. This is also the time to consider interoperability standards between the DDG’s and corporate’s systems. Planners should start by reviewing the Content Management Interoperability Services (CMIS) guide. DDG can realize improved efficiency of content storage by associating metadata with their content.

Other organizations have developed metadata standards that DDG can benefit from. From Päivärinta & Munkvold’s surveys of related industries, they determined that “metadata should provide information about a content element or

configuration and its production, ownership, and intended utilization context to facilitate its retrieval or re-use for organizational purposes.” International industry organizations such as SMPTE (Society of Motion Picture and Television Engineers) have developed metadata standards for professional digital video content. DDG management needs to get up to speed on these.

When designing an ECM system it is important to ensure the metadata specifications are included in the design and that there are work flows for the creators and publishers of content. Since DDG can expect to start sharing content with other domains, ontology and taxonomy development may be important to their ECM strategy, and therefore needs to be thoroughly researched during the planning phase.

Further workflow improvements can be made with a content management system that supports workflow automation, providing features such as check-in/check-out, work lists, work list handlers, and modules containing stored XML information. This would free up DDG’s manager and assistant from continually monitoring the transfer and progress of content. This enables them to dedicate more time to higher-level business strategy issues. Plus procedures and actions are documented ensuring that work is getting done in the manner management intended, and providing relevant audit trails (Hannon Hill).

### **3. Technology/Systems Dimensions**

For the “technology” category of the ECM3 model we will focus on the dimension of Usability – “Application fitness to purpose.”

DDG could be described as having a “process-based” workflow, since they have well defined business processes (content production). It will be natural to build a DAM system, or ECM systems to support the unique workflows for these specific, identified business processes” (Päivärinta & Munkvold, p.5). However ECM technology vendors have largely preset solutions which must be adapted to the customer. Hundreds of software vendors exist on the immature market with varying product philosophies, architectures, functionalities, and price tags, together with a plethora of consultancies (Päivärinta & Munkvold, p.1). We would expect to see strong, ongoing vendor/customer relationships with Corporate IT and ECM vendor(s). Only then can the stakeholders reach the goal of optimum usability in ECM systems.

We would expect any ECM system to have user-friendly, intuitive, and integrated user interfaces to content management, seamlessly integrated with the core content production software described above. And we would expect users to follow corporate policies with regards to their system usage.

#### **Current State**

DDG’s maturity level with “usability” is Level 2/Incipient. DDG is an “island” within the enterprise, with ad-hoc CM happening via a storage-area network drive system (see Figure 1). Projects are allocated space on the SAN, with the senior

digital designer acting as CM administrator. Of greatest concern is the amount of work some designers keep on their local drives. These are not part of any workgroup backups, and are at constant risk of loss, damage or theft.

Each designer is responsible for their content on the SAN drives, as well as content on their local drives. A backup strategy is in place for current projects on the SAN.

The designers' workstations are optimized for their primary applications, and are usually devoid of any unnecessary applications (email, messaging, etc... are all done on other PCs). Network access is heavily firewalled. This is problematic when content, usually large media files, need to be shared with outside vendors. Users will sometimes breach corporate security and use a machine that is outside the network for file sharing. This obviously becomes a GRC issue.

### **Desired Future State**

DDG management needs to understand that ECM is “not a single vendor-supplied solution,” and “requires a great deal of planning, almost fanatical execution and effective governance, which includes compliance and oversight.

A number of technological factors would be important for DDG's ECM plan. First, DDG consumes large amounts of storage space, and workloads fluctuate constantly, so the infrastructure needs to be flexible and scalable in relation to future updates of hardware and software (Päivärinta & Munkvold, p.6).

DDG management would be well served to follow recommendations such as those in the Yankee Group report, “Enterprise Content Management: Expected Evolution of Vendor Positioning” by Robert Perry and Robert Lancaster. Here they describe the two different approaches to unifying content across the enterprise: either with a single consolidated asset repository, or without.

The DDG's enterprise is beyond the scope of being served by a single repository. So they could follow “the opposing approach, which unifies content through the metadata and management layer” (ECM3, p.7). I agree with the Yankee group authors that “enterprise search will consolidate access while desktop applications, including the Web browser, will serve as the interface for contributors and consumers of collaborative content.”

### **Conclusion**

The DDG has significant challenges ahead, as the current business environment is not conducive to investment in the ECM systems and/or infrastructure necessary to make all of the changes described herein. However, there are a number of scalable technology and process solutions that DDG can begin to apply now that will provide near term competitive advantage, while supporting a long term KM strategy.

DDG management should first apply specific KM principals, while taking a holistic view of its current business and competitive landscape. They should leverage next-generation cloud based ECM solutions that provide dynamically scalable, on-demand services. These must be closely aligned with their unique business-

process requirements. And they should strive to become a powerful “learning organization,” that can continuously leverage the knowledge of its group. By practicing these kinds of innovative KM principals, the DDG can realize the benefits of next generation ECM technologies and services.

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