eEnterprise

DIGITAL ASSET WORKFLOW

ONE WORKFLOW SOLUTION FOR ALL OF YOUR CONTENT

XYTECH SYSTEMS

BUSINESS SOFTWARE FOR MEDIA OPERATIONS

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DIGITAL ASSET WORKFLOW

THE DIGITAL ASSET CHALLENGE

One of the most pressing challenges facing the media and entertainment industry is the rapid growth of content stored and delivered digitally and how to manage it through all phases of the workflow process. And while digital assets are quickly becoming the preferred standard, traditional physical assets are just as necessary and will continue to be used as essential production elements for the foreseeable future. So, the question is not only how to manage the digital assets but also how to manage the digital assets and the physical assets simultaneously through all phases of the workflow process.

Physical assets will be needed for the foreseeable future.

Digital asset management (DAM) is a generic term that has different meanings to different vendors. In this document we refer to DAM as a structured, centralized repository for any and all digital content. The need for DAM systems grew out of a desire to organize, manipulate and share media quickly and easily. And while DAM is not unique to the media and entertainment industry, we do have needs that are unique to DAM, especially when it comes to workflow.

PROBLEM WITH DAM SYSTEMS IN MEDIA AND ENTERTAINMENT

While complex, most current DAM systems only handle more traditional digital assets and do not address the business need or the distinctive workflow requirements of our industry. They tend to be geared toward manufacturing environments not accustomed to the management of very large digital files. Accounting, budgeting, library and scheduling capabilities are almost never possible, and if they are, the capabilities are very rudimentary. But where these systems fail us most critically is that they do not integrate with other systems vital to the workflow process and they cannot handle physical assets.

There are many types of DAM systems today solving different pieces of the DAM puzzle. Some companies are experts in ingest, while others are in transcoding, watermarking, collaboration or archiving. What is needed is a workflow system that brings these components together in a structured, cohesive fashion.

In the past, digital asset workflow systems have not been successful in the media and entertainment industry because the cost was too great.

The complexity and cost to integrate various DAM systems, such as archiving, transcoding and watermarking, into the workflow process has been completely prohibitive in the past. Best-of-breed is necessary when incorporating these systems and previous costly attempts failed to even partially address the true need.

The transition to an all-digital media environment has begun, but it will take years to complete. An affordable digital asset workflow strategy designed for the media and entertainment industry is needed to help with this transition. The Xytech solution makes this once unaffordable need *attainable*.

XYTECH ENTERPRISE DIGITAL ASSET WORKFLOW

A staple for over seventeen years at major film and broadcast organizations, Xytech Enterprise is the most comprehensive, highly scalable workflow-management system in the world designed specifically for the media and entertainment industry. All aspects of production, postproduction, transmission, media archive, rental, distribution, duplication, billing and accounting had already been integrated into the Xytech Enterprise platform, so incorporating a digital asset component into the workflow process was a logical next step.

Large install base who want to leverage their current investment.

The entire base of Xytech Enterprise users needs a digital workflow system. And this large group wants to leverage their current investment by using one system to handle their entire operations. New and existing users can transition smoothly from physical to digital media and from manual to fully automated order processing at their own pace.

XYTECH STRATEGY

Critical analysis shows that the existing Xytech Enterprise workflow is ideal for DAM, blending digital and physical assets in the same process. Essentially, the Xytech Enterprise platform becomes a centralized repository for all assets.

Xytech has seen a trend to minimize disparate systems. Typically, a Xytech Enterprise implementation replaces many different systems with one integrated and efficient Xytech Enterprise system; users do not want to add another system to manage the workflow.

The automated Digital Ordering module of the Xytech Enterprise platform controls and monitors the entire workflow process, including DAM systems, servers, tape machines, delivery systems, and all services and equipment necessary to complete a project from beginning to end. Orders for all digital and physical assets can also be made online with the global Web-ordering feature.

- End-to-end digital asset workflow solution
- Digital ordering automates and controls the entire operation
- Combines digital and physical assets in the workflow process

Sophisticated accounting and sales functions are also built into the platform. Enterprise can control all of your budgeting, bidding, scheduling, purchasing, billing and project management processes. Complete accounts receivable, accounts payable and general ledger functionality ties all of the workflow modules together to manage as much of your entire operations as you need.

- Sophisticated accounting and sales functions
- Flexible and customizable
- Simplifies the integration of multiple digital-asset processes

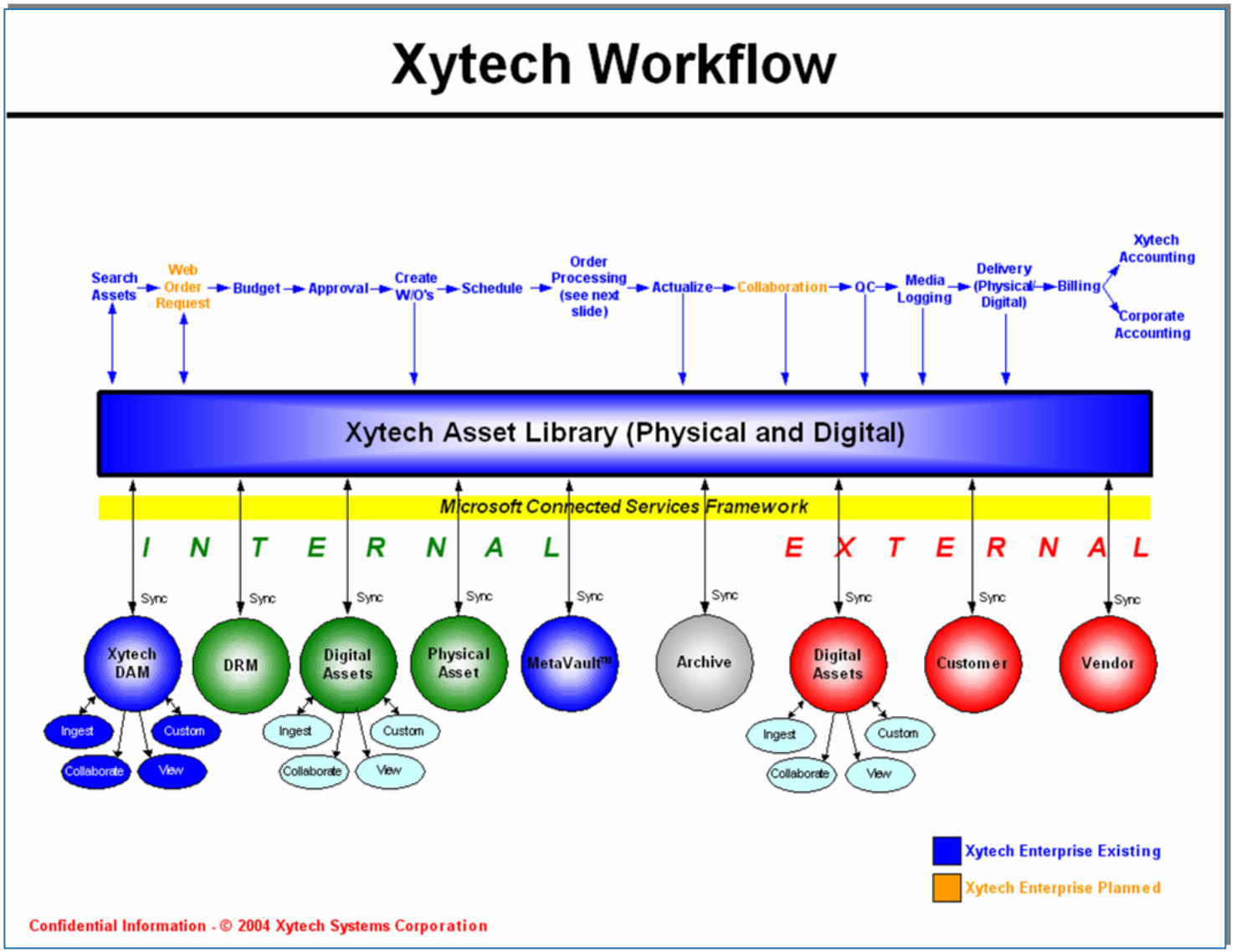
The Xytech Enterprise platform can integrate with *any* DAM provider as well as other critical services, such as transcoding and watermarking. Web-service based APIs (application programming interfaces) manage the integration, facilitating the import and export of assets, order processing and communication between the systems.

Xytech Enterprise unites all of the processes involved in the workflow of digital and physical assets in a flexible and affordable system that will handle today's needs and those of the future.

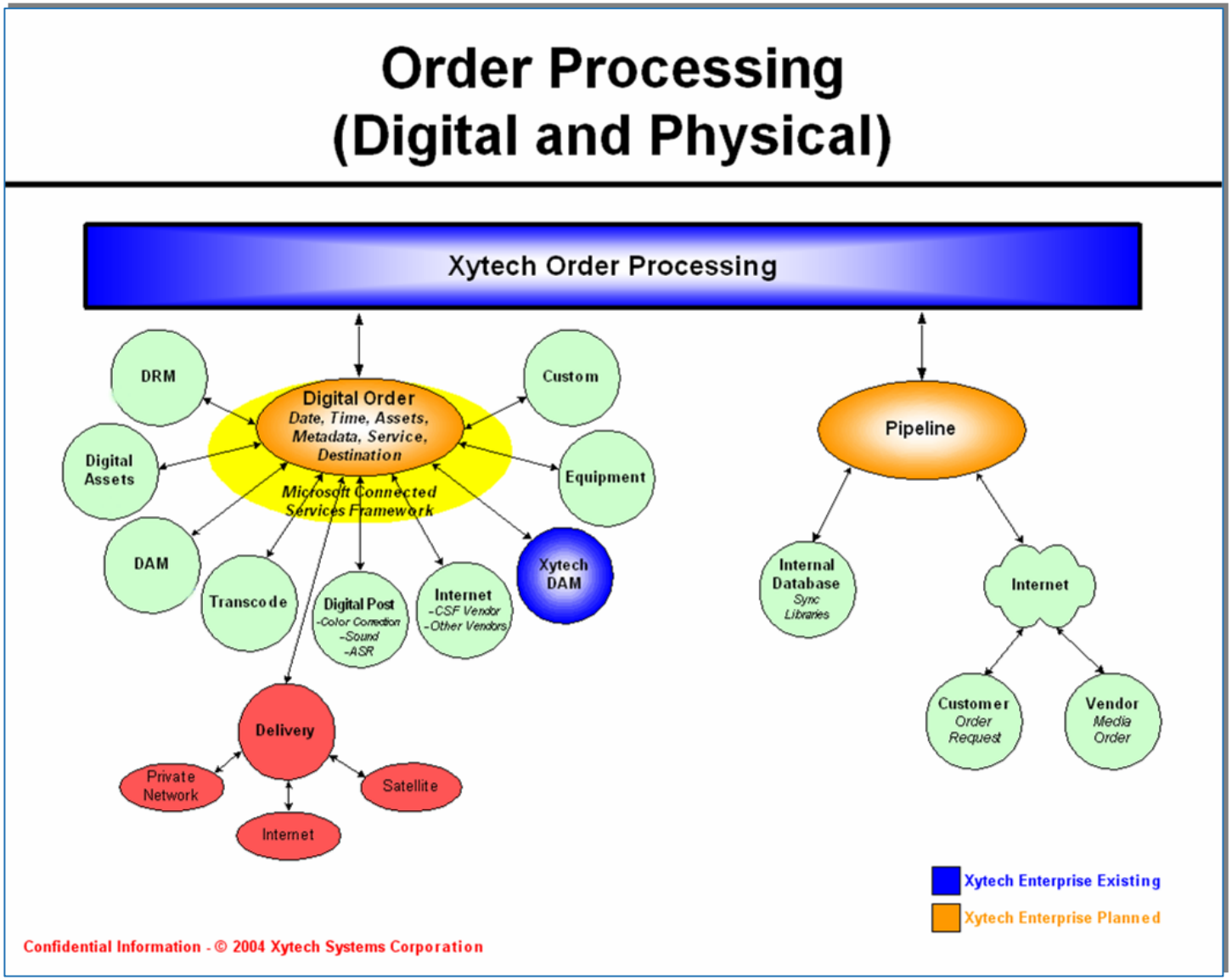
WORKFLOW EXAMPLE

To illustrate how the Xytech Enterprise Digital Ordering module handles a task, the following is a simple scenario of a typical workflow situation:

> A client requests several dubs of a D-2 video master from your vault: five Digital Betacam copies shipped to their New York studios and an MPEG-2 file version transferred to their server.
>
> To accomplish this, you create one order in the Xytech Enterprise Digital Ordering system. The D-2 vaulted master is listed as the source. The detail lines on the order identify the individual tasks that will be performed to complete the job: ingestion, transcoding, watermarking and tape duplication. Once the order is approved, the process begins.
>
> The master is pulled from the vault and ingested by the DAM system; a high-resolution copy and a proxy file are created and archived. Automatically, the high-resolution copy is transcoded to the MPEG-2 format and watermarked. Once complete, a delivery request is made within the system and then the file is delivered to the client's server. Concurrently, five Digital Betacam copies are also made, and a shipping request is entered so that the Betacams can be packaged up and shipped to the client's studio in New York.
>
> Once each detail line on the order has been finished, the order is classified as "complete." It then enters the accounting queue to be invoiced.



The above figure shows general workflow in the Xytech Enterprise system from searching to ordering to processing to accounting. The large blue rectangle shows the MetaVault® Library as the central repository for all assets. On ingestion, each DAM system adds the asset into the MetaVault® Library. (Details on order processing can be found on the next



Order processing in the Xytech Enterprise system starts with the digital order. Once placed, automatic processing through Web services makes integrating processes like transcoding seamless. For outside services, Pipeline sends electronic order and billing information to and from vendors.

FEATURES OF THE XYTECH DIGITAL ASSET WORKFLOW

Digital asset workflow in the Xytech Enterprise platform is managed through several features. In addition to the existing MetaVault® Library function, which is the industry-standard media management system, three new modules have been added to Enterprise: Digital Ordering, Pipeline and Web Order Requests.

METAVAULT® LIBRARY MODULE

The MetaVault® Library function of Enterprise has always provided an industry-standard control over the procurement, movement, shipment, storage, access and handling of physical media assets. With the Digital Ordering utility, digital assets are included as a part of the Library mix, but with their own distinctive attributes.

(See the datasheet on our file-based media enhancements)

DIGITAL ORDERING OPTION

Allows transition over time from manual to automated and physical to digital.

The Xytech Enterprise Digital Ordering option controls workflow from the beginning of the order to final delivery. The ordering system is entirely automated, but can be used in concert with manual processes for a gradual transition over time to maximize the potential of full automation. Once fully integrated, the Xytech Digital Ordering component can manage queues for each provider by task or by server, minimizing complexity, and servers can be scheduled for optimal 24/7 service.

From the time an asset, digital or physical, is "vaulted," it is available to be included into the workflow. When preparing a work order, each order line may schedule one or more tasks with or without dependencies. In the case of a digital asset, each task to be performed on an order line creates a *digital order*; billing for each line can be calculated by bit rate as well as standard methods such as source type and destination type. Digital orders will control any service or machine, such as ingestion or transcoding.

Special features have been created for digital assets that will make the order process more efficient. Users can preview a digital asset by clicking a button from within the Xytech Enterprise system, which links to the DAM system asset display. In addition, the numerous DAM parameters that need to be set up for each order are simplified by the use of templates created in advance. Users do not have to configure the DAM parameters each time; they just select the appropriate template that will instantly arrange the appropriate settings.

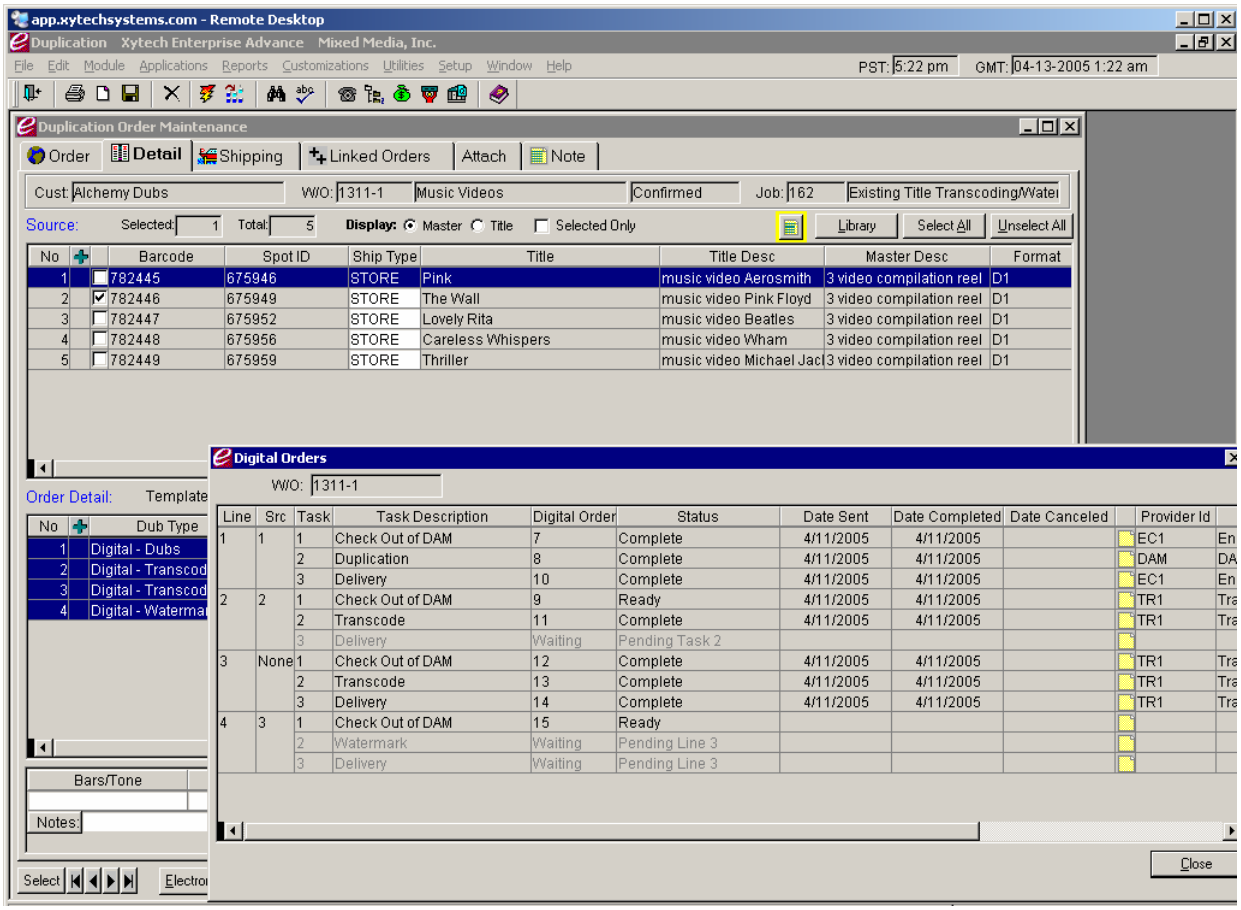
Templates control DAM provider parameters.

Digital Order Table

The hub of the digital order workflow is the Digital Order Table (see figures on pages 9 and 10). This table acts as a managed queue for each task and server controlling the creation of new digital orders based on workflow dependencies. The Digital Order Table creates a complete audit trail so that all assets are accounted for in every phase of the order process.

The Digital Order Table manages the queue based upon the priority level and the due-time of the digital order. To control when your orders will be performed, priorities can be easily changed. A button from within the order will display all digital orders and their status when clicked. This powerful and convenient feature displays a full audit of all order processes in one location.

Priorities are easily changed.

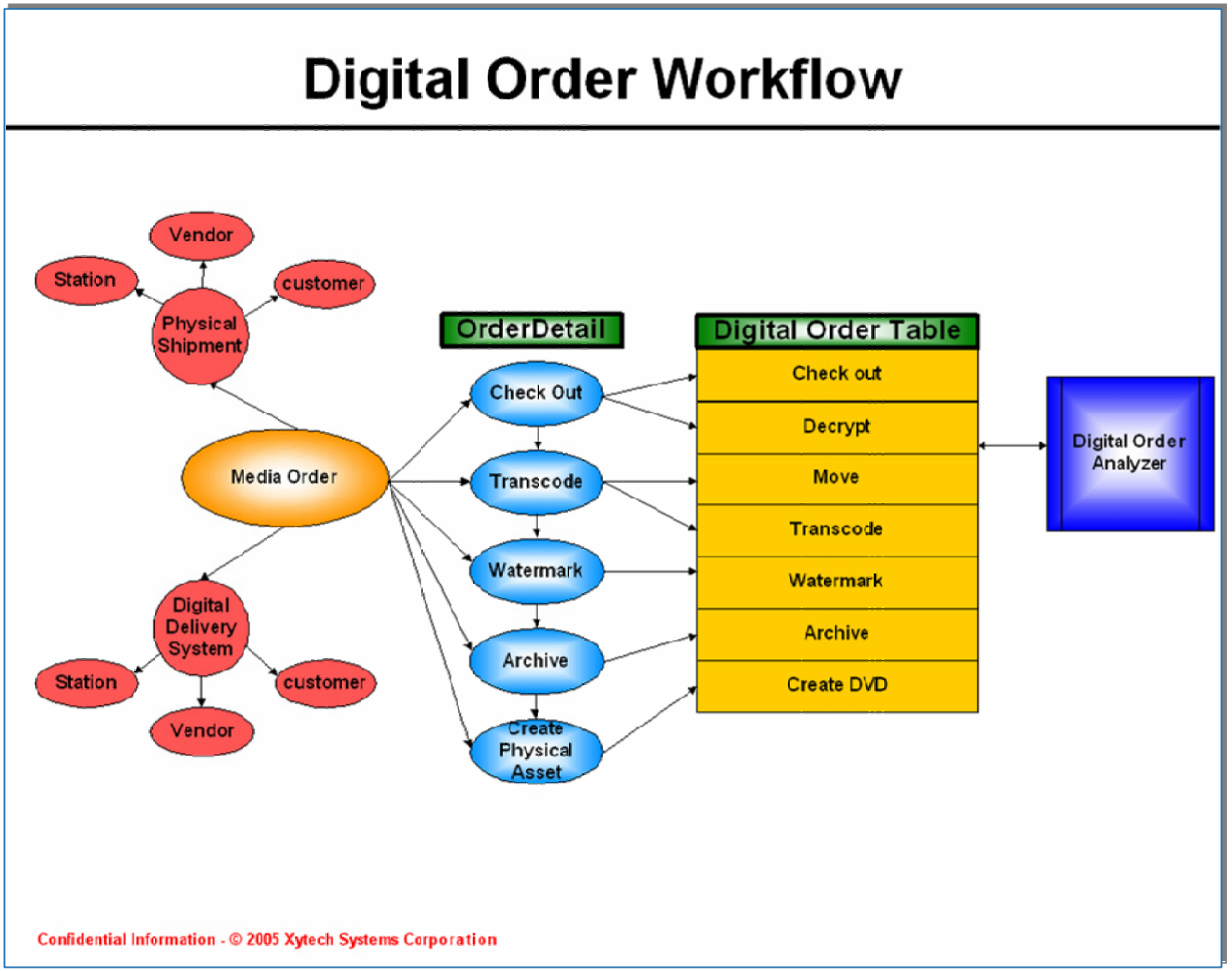


Digital Order Analyzer

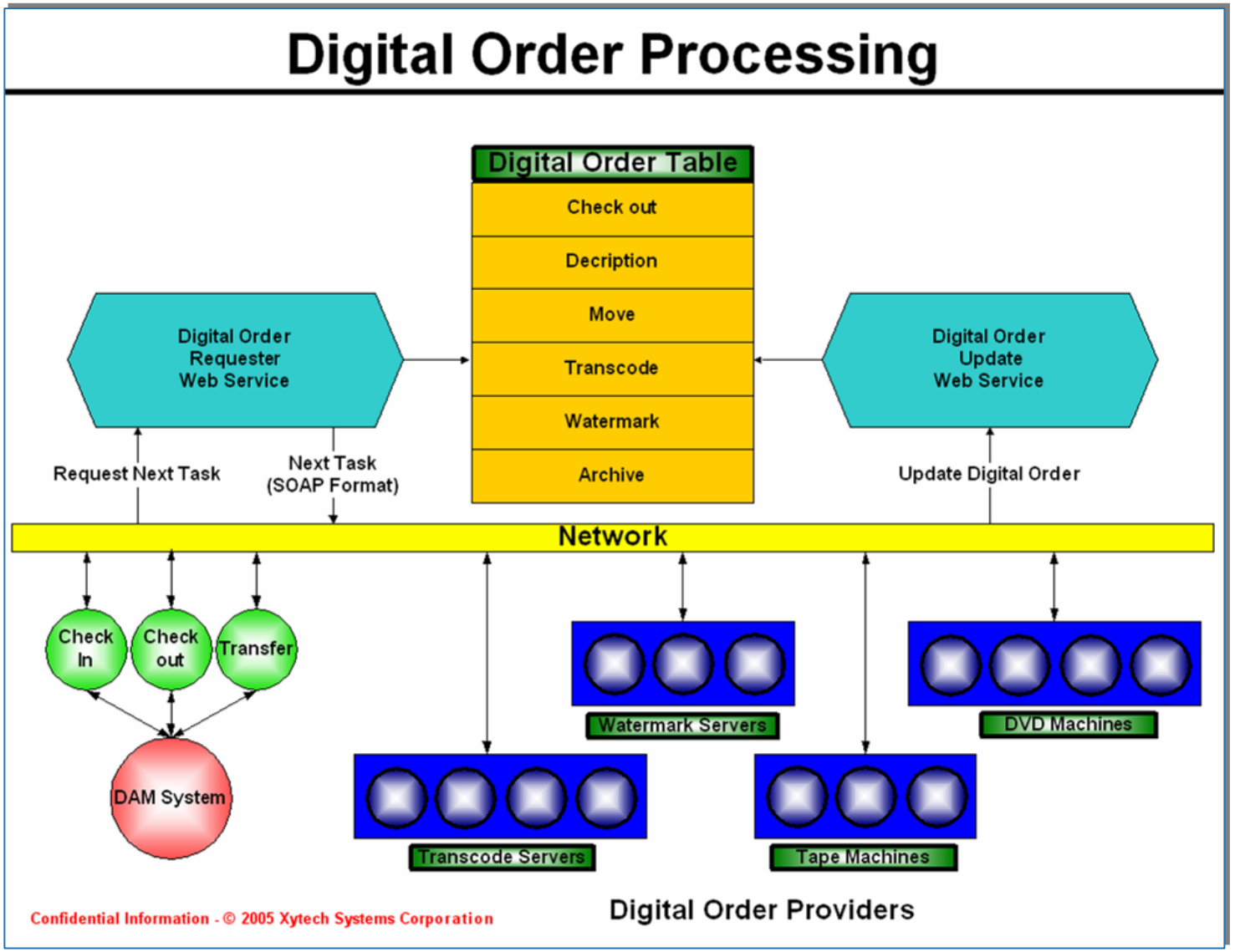
Monitoring each digital order is the Digital Order Analyzer, which tracks and reports based on task. It monitors digital orders, records digital orders completed and even graphs trends on the task performed. The Digital Order Analyzer also makes sure to log proof of delivery of each order. If a digital order encounters an exception, such as not being able to make a delivery date, the Analyzer will automatically notify a designated point-of-contact through an alert message or with an e-mail.

Integration of Digital Services

Integration of an unlimited array of technologies is possible through simple sets of Web services. When a DAM provider is ready for a new task, a Web service is used to request the next job in the queue. And when a task is complete, another Web service is called to update the digital order. For example, when a transcode server has completed converting an asset, it calls a Web service to update the digital order in Enterprise. It is now ready for the next task, so it calls another Web service to request the next job in the Digital Order Table queue.



From the media order, the order detail lines include one or more tasks to be performed. The Digital Order Table is created automatically by configuration. As the Digital Order Table manages the queue of tasks to be performed, the Digital Order Analyzer monitors and reports on each task.



Digital orders are all managed by the Digital Order Table. When one digital order provider, such as a watermark server, completes a task, it calls a Web service to update the digital order. It then calls another Web service to request the next task in the queue.

WEB SERVICE REQUESTS OPTION

The Web Service Order Requests option is a simple online ordering system that streamlines the ordering process.

Global web ordering system for all digital and physical assets.

Standard orders involving any digital and physical assets can be made through the Internet and controlled through a completely automated method, reducing processing time. Web-based templates guide clients through the procedure of creating a variety of types of orders, ensuring that they include all of the information essential to processing orders efficiently.

Orders with special requirements can still be made through the Web feature, but the order will simply be reviewed by an account representative who will arrange for the client's special needs in Enterprise's media ordering mode.

A list of all orders is created for an account representative to review, but work orders can also be automatically created from the Web requests. The module is linked to the Digital Ordering system, creating a completely automated process.

Once a Web order has been placed, automatic e-mails can update clients on the status of their orders. Account representatives can also e-mail clients directly from within the system, keeping all communication related to an order documented in a centralized location.

CUSTOMIZATION AND CONFIGURABILITY

Like the core Xytech Enterprise platform, the Digital Asset Workflow function is also extremely flexible. What is not already naturally configurable within the system can be customized to suit specialized requirements.

Xytech will integrate with any DAM provider to create a seamless transition between systems. A comprehensive set of developer API (application programming interface) tools are available to instruct programmers on how to link with existing DAM services as well as other key systems. The Microsoft CSF (connected services framework) technology allows for easy integration with many vendors, from transcoding to distribution services.

Xytech's Web-service based APIs will allow integration with any DAM provider.

For in-house modifications or adaptations by a third-party integrator, Xytech has a complete toolkit to help Xytech Enterprise fit perfectly in your solutions network.

PARTNERS

DAX Solutions

Xytech Systems has established a partnership with DAX Solutions to provide DAM services. Tight integration between our systems already exists. On ingestion, the DAX system will automatically add a media asset record into the Xytech MetaVault® Library. In addition, a link has already been set up from the Xytech Enterprise media asset record to the DAX asset viewer. One click from a Xytech Enterprise media asset record displays the asset within the DAX environment, therefore providing all DAX functionality.

DAX's DAM service offers a complete archiving system, established broadcast workflow, check-in/check-out through digital orders and asset movement through digital orders.

Microsoft

Xytech Systems is a Microsoft certified partner. Xytech Enterprise is built on the SQL server database structure, and our Web services use the .NET technology. Microsoft CSF (connected services framework) is a key method of integrating digital asset components.

Anystream

Xytech Systems has built an adapter that connects Anystream APIs with the Digital Ordering Web services. This partnership allows automated transcoding and watermarking in the Digital Asset Workflow.

Phillips Watermarking

This partnership will allow automated watermarking in the Digital Asset Workflow with this vendor.

XYTECH ROADMAP

COMPLETED

- Web-service APIs for digital orders
- Integration with DAM system during ingestion
- Preview to DAM system from search and asset entry
- Store digital assets in the library
- Create digital orders
- Addition of new digital asset fields
- Integration with DAX for ingestion, preview and digital order processing
- File-based media enhancements

FOURTH QUARTER 2007

- Web Service Requests option
- Anystream Adapter
- Xytech Delivery Service

SECOND QUARTER 2008

- File-based Rights Management

SUMMARY

The Xytech Enterprise platform includes an extensive, end-to-end digital asset workflow system designed to handle the unique needs of the media and entertainment industry. Utilizing its industry-standard workflow-management system, physical and digital assets are combined in the workflow process. The cost-effective system becomes a centralized repository for all assets, both physical and digital.

Digital orders automate the workflow process. They are extremely flexible allowing for dependencies, multiple tasks per digital order and real-time updating of priorities. Integration with digital order providers minimizes complexity and allows for complete workflow automation. Web-order requests let users transition at their own pace to a completely automated ordering process.

The large existing base of Xytech Enterprise users need a digital workflow system and want to leverage their current investment, saving costs.

XYTECH SYSTEMS CORPORATION

BUSINESS SOFTWARE FOR MEDIA OPERATIONS

Xytech Systems Corporation is a leading provider of business software for the management and delivery of media content. Our flagship software, Xytech Enterprise, will help to manage your mobile asset libraries (including metadata), schedule people/equipment to prepare mobile content for distribution, schedule and track QC operations, manage inventory of mobile devices for compatibility testing, and manage overall project and business workflows.

Xytech Enterprise was specifically designed for the media and entertainment industry. Customers include most film studios, many broadcasting companies, postproduction facilities, television networks, media content providers, and the media departments of numerous Fortune-1000 corporations.

Xytech Systems software can help you improve your mobile asset delivery operations and increase resource management, asset tracking, and bottom-line profitability.

HISTORY Xytech Systems was originally incorporated as "Xymox Systems, Inc." In 1998, the company changed its name to "Xytech Systems Corporation" after acquiring Gentech Systems Corporation, the makers of the FMS software product.

In 1988, the company introduced its Myriad software system, the first fully integrated facilities-management system specifically designed to help manage the business operations of production, postproduction and broadcast companies. In 1997, the company initiated development of a new client/server version of the product. This new version was christened "Express" and runs on Oracle, Microsoft and Sybase DBMS and on UNIX and Windows operating systems.

MISSION Xytech Systems' goal is to enable entertainment- and media-based organizations to maximize the utility and profitability of their human, physical and media assets by providing state-of-the-art asset-management, accounting, job costing and scheduling software. Xytech Systems offers highly integrated solutions backed by superior customer support, training and consulting services.

PROFESSIONAL SERVICES Xytech Systems provides extensive consulting, training and custom programming services to meet each customer's unique requirements. Xytech Systems' consultants work with the customer's personnel to develop programming specifications as necessary to provide the best fit between the customer's needs and the software system. The company's consulting staff works through the assessment, strategy, implementation and operations support processes to transform the customer's conceptual model of management infrastructure into a practical, working solution.

TRAINING Xytech Systems' training programs vary from customer to customer, although the preferred method incorporates a "train the trainer" approach. That is, Xytech Systems people train a small group of users at customers' facilities, who then in turn train other users. Xytech Systems conducts training classes and offers individual instruction, either on-site or online.

SUPPORT Xytech Systems maintains a staff of support personnel who combine over 40 years of industry experience with extensive familiarity with Xytech Systems' products and installations. Support is available 24 hours a day, seven days a week for customers anywhere in the world. The company offers telephone, online and on-site support.

The company also offers a full range of documentation for all products and these are updated regularly as new versions of the programs become available.