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Basics of Managing Content

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Following the description of a content repository in Chapter 4, "Basics of a Content Repository," this chapter explores the next logical layer for a dynamic publishing solution. The Management layer is a major piece of your publishing application. It's the hub of your publishing application that relates most closely with your business process and is the tool that leverages timely content updates to your Client layer. This chapter provides an introduction to a dynamic publishing workflow. It describes the importance, necessary facets, and challenges of a workflow in your publishing system.

The workflow is important to how your business interacts with the content repository. It enables non-technical users to create and publish their own web content while enforcing necessary tasks to be completed on time. It also ensures that any internal audit or compliance rules are followed. This chapter examines how a workflow can compliment a business process and possibly improve efficiency. If built properly, a workflow can decrease the amount of errors made in a manual office process by defining clear roles and responsibilities in the creation of business communication or marketing material that you want to publish on your web site. A workflow that the business unit manages can also eliminate the interaction with IT groups to move content on web sites. This can prove to be a return on your development investment in both IT cost reductions and business process improvements.

To facilitate an automated publishing process, workflow features must meet the following basic requirements:

- They must be able to adapt to existing business processes, which improves the process. This is the return on investment (ROI) on the business end.

- They must seamlessly integrate with existing user authentication schemes like Active Directory, LDAP servers, or other user repositories.

- They must be configurable to enable different levels of security, such as creators or authors, editors, and approvers.

- They must be easy to use and require little or no training for the business user to complete a task.

- They must eliminate the developer, webmaster, and so on for basic content changes (Technical Unit's ROI)

It's important to keep asking yourself as you read this chapter, "How can I improve cost effectiveness with more efficient business and technical processes in my company?" Finding the most critical areas of your organization that need process improvement and decreased IT spending is important to your success with building automated business processes. Creating workflows can be complex, so keeping within the parameters of the requirements is important. You have a choice to create simple static workflows that can follow the same steps time after time, or more dynamic workflows that demand changes based on decisions made during the flow process. Choose the right business process to build a workflow and try not to over-complicate the development. Developing properly extends the components you have created to future requirements. Small or large organizations benefit from an automated workflow, and the complexity varies greatly based on the complexity of processes in your company.

Workflow Challenges

The challenges to creating the Management layer in your Dynamic Publishing solution mostly surround understanding the components of an automated workflow solution and clearly relating them to the business requirements. Getting your business area on the same page about terminology, roles, and automated tasks is important to the success of the outcome. Benefits to creating an automated workflow solution can come in several ways. The main reasons to create a workflow are probably these:

- An area or areas of your web site needs frequent updating.

- A multistep business process involves many individuals who are involved with the creation and approval of content that could benefit from automation to increase efficiency.

The greatest return on investment is where your requirements satisfy both reasons. Whatever your reason for building a workflow, hopefully it will have multiple results after it is in place. Your content repository that you architected should allow you to position your organization to leverage your Management layer in the most optimal way. Whether your content should show up on the web or on a wireless device, your workflow supports your business from inception to final approval for displaying a piece of content.

In the marketing department at DuvalShock, the employee roles can be looked at in three categories:

- A group of employees who receives tasks to initiate a piece of content material
- A group who validates or checks whether the material created is market-ready
- A third group who is accountable for final approval, or sending back the material if it is not market-ready

These roles are basically a generic description and translate to any office in any type of company. Let's break these roles down into a workflow system's roles:

- **Author or creator**—In a publishing system, this role can receive a task or initiate its own task for a piece of content to be created. It could be content in a repository from a digital asset, an upload of a PDF file, or new content to be created in a text editor.
- **Editor**—The responsibility of this role is to ensure that the content created is accurate. If necessary, this role might edit the content or add additional pieces. The Editor can also assign or reassign tasks and view the status of those tasks in the workflow system.
- **Approver**—A piece of content is created, edited, and complete. The next step is to send it to an approver to either approve the task or reject it. Rejecting it can reinitiate the task back to the Author or Editor queue with a reason why it was not approved for production. This group is typically a unit in your organization that approves material before releasing it to the public.

Figure 13.1 shows a basic flow of how roles and content would go through the process of a workflow interacting with the content repository.
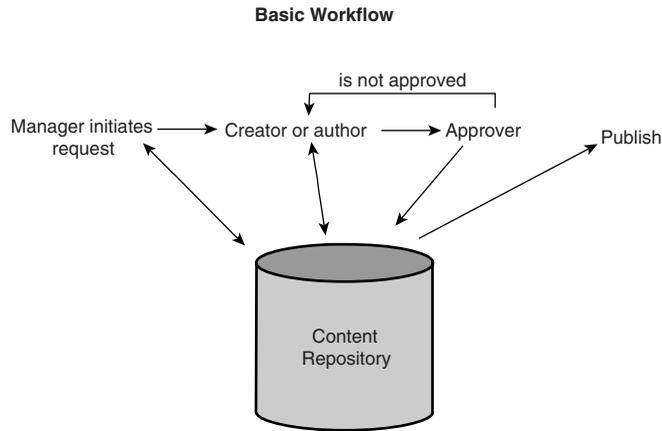
Basic Workflow

Figure 13.1 A basic automated workflow process.

Determining How Your Business Operates

To establish a successful workflow, you need to take the time to understand how your business operates. One of the main goals should not only be an automated way to deploy content, but also a way to improve the current business process on how a piece of content is managed. This can be a crucial ROI point when you're trying to fund a dynamic publishing solution project. An automated task process can also be an effective way to audit track how a piece of content made it or did not make it out to production. It allows you to track content that was published for viewing when it might not have been production-ready.

In determining potential areas to use an automated workflow, choose areas on your web site that could benefit from better management on both the IT side and on the business side.

On the business side, good content to consider using/implementing an automated workflow system has the following characteristics:

- Has no clear ownership. Sign off on today's manual process is inconsistent.
- Is important to your company's success.
- Could have a workflow that is a natural fit to a business unit.
- Needs to be shared in other areas of your site.
- Is shared with other sites and partners

From the technical side, using the business requirements as the priority benchmark, choose content that is characterized by the following:

- Has requirements for multiple views and formats (that is, PDF, print views, and so on)

- Has an area of your site that might be burdensome for a development staff to keep up-to-date because of frequent changes

- Needs to live in multiple template locations, other locations, and other devices, such as PDAs

Determining the ROI

Before you build a workflow application, determine your overall ROI. There are two major benefits for overall ROI when you're building an automated business workflow in your dynamic publishing solution:

- Increased business efficiency and performance. This includes improving, streamlining, and automating tasks that prove less redundancy, fewer mistakes, and more productivity to your supporting business environment.

- Cutting out the IT process after the solution is built. The IT staff focuses more on building these type of automated solutions and less time on managing static HTML templates. This increases site stability and consistency by automating how content is published.

Another benefit to expect is that when you have developed one or two automated solutions for a specific area, you often are able to reuse the same solution for other areas of your web site or within the company.

Factor in all the other benefits of what a workflow offers on top of a content repository. Your consumers, partners, and employees experience a richer client experience by being able to locate relevant, up-to-date content to make them and your company successful. Your web site can offer more client-rich experiences with the technologies explained in this book. Leveraging Flash Remoting with JRun 4 and ColdFusion MX becomes even more powerful now that you have established a solid Management layer foundation atop your content repository.

Determining the Business Requirements

By understanding your business requirements, you create a controlled process to manage content for your business units. The roles of a workflow system match the roles and the authority level of each employee in the workplace. Continuing in this chapter, we will use the example of the marketing department at DuvalShock. We will first look at the process in the marketing department before a Management layer was incorporated. Looking at Figure 13.2, we can examine how the office process flows. You can build a flow chart by simply sitting down with your business unit and mapping out how it goes about creating content that ends up on the web site. A flow chart like the one shown in Figure 13.2 can become your requirement for the workflow application.
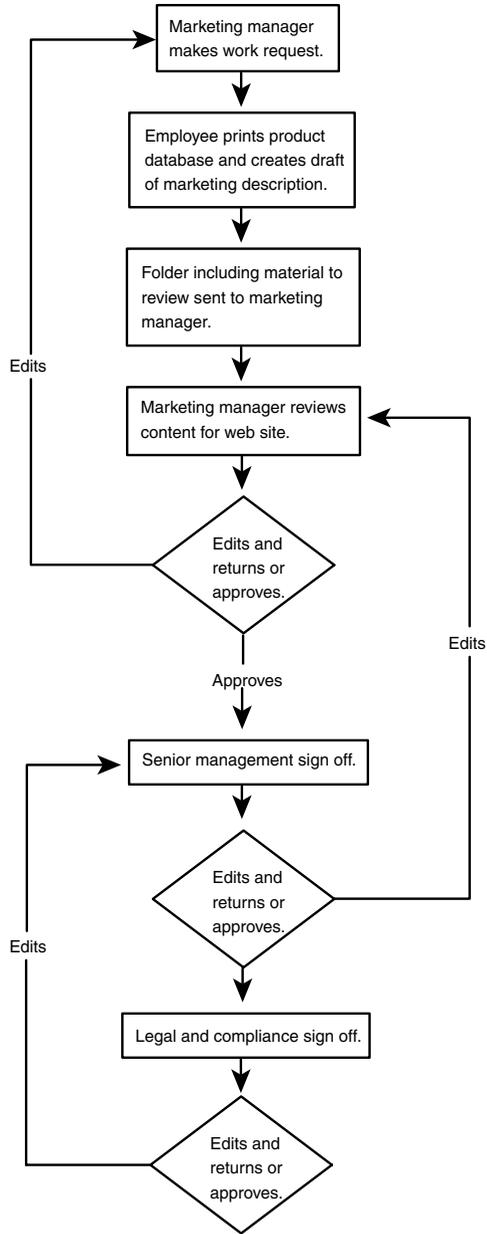
Figure 13.2 Example of a flowchart.

Note the following in Figure 13.2:

1. The marketing manager requests that a description of the new Big Spark 200 Generator needs to be created for the company web site to increase sales.

2. A marketing employee goes into the product database and prints product details for the generator. The content details from the product database are too dry for a product description and do not have all the necessary details to make the description marketable for a salesperson. The content is primarily specification details that do not appeal to a market campaign of the product.

3. A new word processing document is started. A first draft is created for the new product description and saved.

4. A working paper folder is created and includes the printout of the product database and a printout of the first draft of the marketing material for the web site.

5. The folder is walked over and placed into the marketing manager's mailbox for review.

6. The marketing manager averages five to six business days to review the draft and most likely returns with comments on the first go around. The edits are done manually on the paper copy and then returned to the marketing employee.

7. The marketing employee reopens the word processing file to make the edit requests.

8. A new copy of the file with the edits included is printed out and returned to the marketing manager with more urgency this time around.

9. At this point, either another round of edits takes place or the marketing manager routes the folder to his senior management, legal, compliance, and any other necessary groups that need to sign off on the marketing department's product description. Internal audit requires a signature from the appropriate individuals on a signoff sheet provided in the folder.

10. When all signatures are received, the marketing employee takes the final copy of the document and enters a request with the web development team's "project request" system.

This is a simple example of how complex a business process can get. What wasn't really captured are the many delays that can occur, the losing or misplacing of the folder, and the voice mails and other communications to complete this process. Continuing in this chapter, we break down the elements of this process and look at how to create a more efficient workflow with automated tasks that allow your organization to publish content on your company web site with no technology group intervention.

Translating the Business Flow into an Application

You now have an understanding of your business process in the back office. It meets most of the requirements as to why we would choose this as a perfect Management layer solution. Your next challenge is to translate the business flow into an application to support and improve upon this process. Before we begin to analyze it and break it down into a more automated solution, let's make some assumptions about the project approach.

Workflow Application Assumptions

The following are assumptions to determine how the DuvalShock requirements will be delivered in a workflow application:

- The workflow application will be built using a web interface. We need to keep in mind the limitations of the web as we design our application.

- DuvalShock uses Microsoft's Active Directory as the standard for intranet, extranet, Internet, and desktop authentication. Users and groups already exist in this repository. We will be expected to build our solution toward this security model.

- Understanding the development limitations of web technologies, the interface needs to be simple with little or no business training necessary to manage content.

Of these assumptions, the most important to understand is the challenges the web technologies present us. These challenges clash considerably with our desire to make the application easy to use, dynamic, and client rich, which is similar to traditional Client-Server applications that are written for a Microsoft Windows operating system. The web is stateless in nature, so a request-response model is dealt with in creative and not-so creative ways. Developers continually try to meet this challenge by extending web languages to their limits and sacrificing browser compatibility and performance of an application to get the most out of a better user experience.

If you have worked on a web application before, you most likely have been asked in the requirements to make your application perform a task that is not quite possible. The developer will come out with options for how to meet this requirement, but in all cases, the requirement needs endless explanation to your business group and many hours of a developer's time to meet expectations somewhere in the middle. Building a workflow application has many of these challenges. It will be tempting to try technologies like ActiveX Controls or Java Applets through a browser; ultimately, however, you will run into security, performance, and web browser compatibility issues. This is why most development teams have chosen to stick to simpler methods to build their web applications. This is also why building complex applications can be so difficult for the web.

Creating the Workflow Solution

With a basic understanding of the roles of an automated workflow and of the current business process for the content that needs to be managed, let's look at how this can be pieced together to create a workflow solution. Refer back to Chapter 1, "Overview of Dynamic Publishing," to refresh your memory of the elements that need to be managed on the DuvalShock web site. The content management process on the business end will compliment the publishing rules and user experience process on the company web site.

After reviewing this section, look at Figure 13.3. By using the Basic Workflow model earlier in this chapter, we expanded the requirements out to meet the business process.
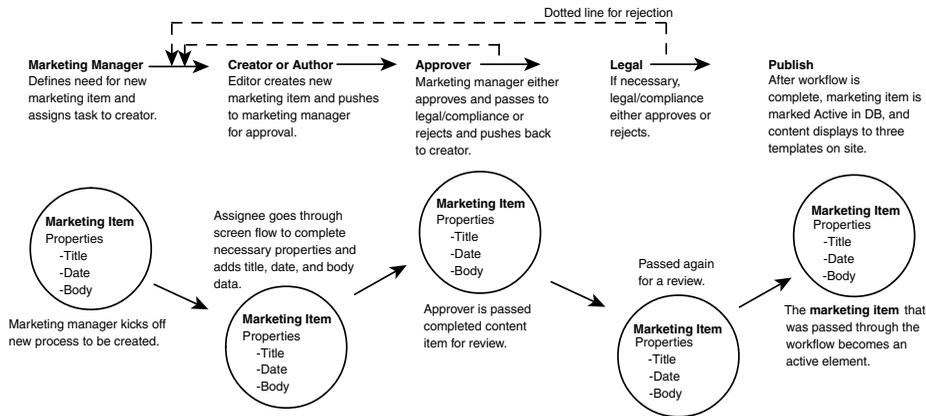

Figure 13.3   Example of a creation and approval process
for DuvalShock marketing development.

Relating back to the business process earlier in this chapter, at this point we step through the illustration as a workflow application. Next, we describe the roles and authority of an automated workflow application.

> **Note**
>
> These are just some of the workflow application components that can be introduced. The possibilities are unlimited to meet the business processes that your organization follows. The goal is to simplify the business process when building this solution. When stepping through what a business unit goes through to create, approve, and publish content, you should be able to go back and compare your application design and show improvements to the process. You should be able to quantify where you are saving time, resources and cost by eliminating or streamlining certain manual tasks that took place. The requirements and design need to be well thought out before development begins. The architecture of the application should be considered for growth and change as additional requirements and business processes evolve.

Marketing Manager

In our workflow application, the marketing manager initiates a task requesting that his employee begin to create a product description for the Big Spark 200 Generator. After this is initiated, an automated task sends an email to the employee with a link to the task.

Creator or Author

The marketing employee receives the request and begins to create the content. If you built a feed from another digital asset into your content repository, you might have some of your content to work with to complete this task. The employee steps through a process of screens that ask for items such as title, date, and body description. You can also build in other items, such as metadata tagging and the target audience. In addition, you can provide tools like a word processing editor to format the content through this process, or you can require that a standard font size or style be used when the content is entered at this point. A WYSIWYG word processing HTML editor that includes features like spell checking can be an important piece of your workflow application. When this task is complete, the author submits the content into the repository for publishing approval.

Approver

In Figure 13.3, the requirements show that the marketing manager receives the completed task from the marketing employee. The role of the approver is to read over the content that is created for the new marketing news that needs to be released. If the approver decides the content is not complete or needs other changes, he can reject the content request and send it back to the author with information related to why it was not approved. If it is not approved at this point, it could be published to production or passed on to additional levels of approval.

Legal Approver

In this example, the requirements ask for additional sign off from the DuvalShocks legal department. This task can have the same characteristics as the marketing manager's approval. There is a key difference after the legal department approves the content. The end of this task is the final step before the content repository marks it staged for publishing.

Publisher

After the final approval occurs, the last task in this automated workflow is to publish the content to the DuvalShock web site. For the end user, this should be as easy as clicking a Submit button and having the content publish to the web site in the predefined format that is defined in the publishing requirements. Chapter 19, "Basics of Publishing," explains the publishing elements in detail as the next logical layer.

Increasing Efficiency and Accountability

We described the core components of an automated workflow, but now let's look at the other elements of your application that can assist in better business efficiency and accountability. The following components can add valuable functionality to your workflow application.

Authentication and Roles

Before you can enter a workflow application, you need to have a user login with an ID and password. Ultimately, they should authenticate against your organization's strategic user repository. By doing this, you have an opportunity to reuse groups that are already created for certain departments and granular roles that exist within the organization. Personalizing the workflow application becomes possible if a role is only allowed to manage certain categories in your web site. If your web infrastructure is mostly Microsoft IIS web servers, you are most likely going to be using an NT domain or Active Directory. Web infrastructures that use UNIX predominately go with a more open LDAP solution.

Email

Integration with your organization's email is a powerful facilitation and communication tool to assist the business process. It can be an automated event that can occur at certain points of the workflow. For example, if the marketing employee has completed a content contribution, an email event can send a message to the marketing manager notifying that a task is complete. In the email, can be a full description of the task along with a hyperlink to the content description that needs approval.

To take it a step further, if the task to approve or deny is not executed, then another email can be triggered to the marketing manager as a reminder that the task is still waiting for his action. Email can also be handy for senior executives who have read-only full-task descriptions and deny or approve important pieces of content via wireless devices.

Overuse of email can also be detrimental to your workflow application. Triggering emails at strategic points of a process ensures users that receiving an email from the workflow application is an important one and needs to be attended to.

Audit Tracking

Another feature that your internal audit or compliance unit might require in your workflow application is an audit tracking feature. This can be a utility that tracks completed tasks, dates completed, rollbacks, and, of course, which user is changing, deleting, editing, and approving content published to your web site. It can be a powerful reporting utility for a company that is concerned about the management activity of its web site.

Entry of Metadata, Keywords, and Categories

During the workflow, it is critical that the content being created is identified accurately and consistently. The workflow process can step a user through choosing the correct keywords for the category he is providing content for. Refer back to Figure 4.3 from Chapter 4.

The marketing employee can begin by choosing a category for which to edit content. In our business requirement case, the user might step through a screen flow to be certain that the category "Products" and the subcategory "Generators" is where the new keyword "Big Spark 200" is created. By forcing the user down a path on how and where the new content is created, you have ensured that the new content is located in the accurate taxonomy for proper searching and navigation.

Authoring of Content

Several options are available when a user needs to create or edit a content for font size, italic, bold, indenting, and so on. If you're creating a new keyword heading, or title that you can reuse in navigation, a page title, or a heading, you might not allow for full authoring capabilities and just provide a simple text box to enter the keyword "Big Spark 200." The body of text that describes the generator might have requirements to have full authoring capabilities.

Full authoring solutions in browsers allow for HTML and XHTML editing with most of the capabilities of a typical word processing interface. After a user completes editing using the tool, the content is submitted to the repository with the formatting intended for publishing to the web site.

Task Status

A business manager might request that he be able to view the status of content that is being created. As each task is completed, the status screen can show information like this:

- Date task assigned
- Date task completed
- User assigned for creating, editing, or approving a task
- Overall workflow status
- User comments field

Of course, task status should not be limited to just business managers. Occasionally, some components of a status will be available for all audience levels in your workflow application.

Conclusion

This chapter defined the Management layer, which is what most closely relates to your organization's business process. The workflow application is the center piece of this layer. The application you build for your dynamic publishing solution provides your business users with the ability to update and manage your company web site in a timely and efficient manner. We touched on the basic requirements for when you should build an application like this. It is important to keep asking yourself and your co-workers, "How can I improve cost effectiveness with more efficient business and technical processes in my company?" Finding the most critical areas of your organization that need process improvement and decreased IT spending is important to your success with building automated business processes.

The biggest challenges of building a workflow solution are getting your business to envision how this can benefit your organization and bringing the employees up to speed on a common terminology that should be used to define roles and tasks. Start with the basics. Educate your business to the basic roles of author, editor, and approver. Then build off of those basic roles and fit them to your organization. Walk through the daily manual process of how a piece of content is created, edited, and approved. Look for the inefficiencies in the current process and exploit them with an automated design model to bring cost savings and process improvements. Teach your business new ways to approach their business process and, by comparing the manual process, show an elimination of steps and improvements with automated tasks. Use business-familiar infrastructure tools like email to compliment your workflow application.

Most importantly, make sure the application you build to support the business process is intuitive and easy to use. Over-complicating the application does not win business acceptance, and users are less likely to use it effectively. Also consider taking advantage of "out of the box" solutions, such as Lotus Notes workflow components. It might not be necessary to build from scratch if requirements and your supporting technology allow for using a vendor workflow solution.

The ROI for building a workflow application can be seen on two fronts:

- Increased business efficiency and performance. Improving, streamlining, and automating tasks proves less redundancy, less mistakes, and more productivity to your supporting business environment.

- Cutting out IT processes after the solution is built. The IT staff focuses more on building these types of automated solutions and less time on managing static HTML templates. This increases site stability and consistency by automating the way that content is published.

The automated business process also enforces categorization and consistent input from a business user that results in better site structure, searches, and dynamic navigation. Creating a workflow application results in better business processes, technology resource efficiency, and a web site that meets or exceeds customer expectations for fresh content and usability.