How to Use RWD uPerform® to Streamline e-Learning Development

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This Session Topics

- How rapid development techniques will streamline the generation of e-Learning content
- How stencils and standards ensure consistency among different developers
- How live reviews can streamline the review process
- How reusing learning assets can help reduce the development effort

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Poll: Project Resources?

- Poll #1: What resources do you have available for your e-Learning projects?

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Poll: You?

- Poll #2: Of these resources, which title do you typically claim?

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RWD uPerform®

- RWD uPerform® is an authoring and content management tool for creating and delivering targeted learning.
- RWD uPerform® authors can easily create, edit, and publish procedures, Adobe Flash®-based simulations and eLearning courses.

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Poll: RWD uPerform® Experience?

- Poll #3: How often have you used RWD uPerform® to create e-Learning courses?

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Chat Input: Rapid Development?

- Enter your opinion to the following question in the Chat window:

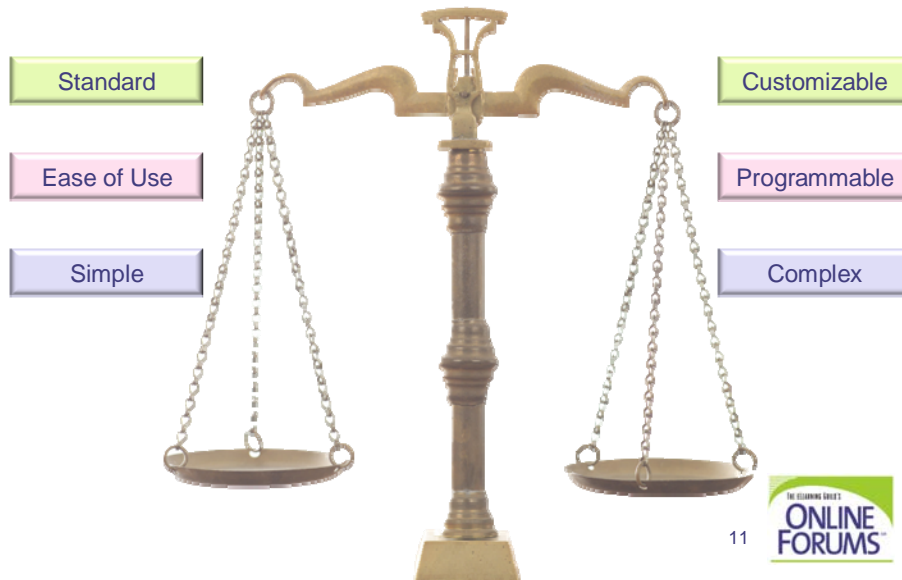**What is rapid development?**

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"Traditional" Development

Needs Analysis → Stakeholder Review → Research → Design

Prototype ← Course Integration ← Content Development ← Stakeholder Review

Stakeholder Review → Pilot → Deployment → Evaluation

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"Rapid" Development

RWD uPerform® Enhancements

Value Trade-offs

| Standard | Customizable |

| Ease of Use | Programmable |

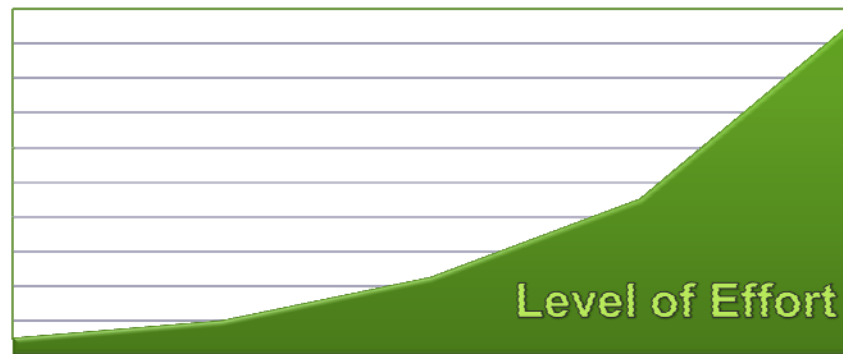| Simple | Complex |

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Case Study: Clients Profile

- Client #1: Large hospital in Texas
- Some existing content, some expertise not yet captured

- Client #2: International precious metals mining corporation
- Mostly existing content and learning assets

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Streamlining Tip

- Prototype "Look and Feel" and get buy-in early

Level of Effort

TIME OF CHANGE DURING A PROJECT ►
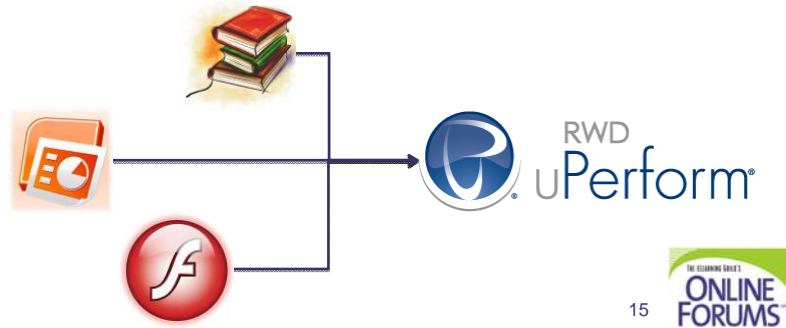
13

Application Demonstration

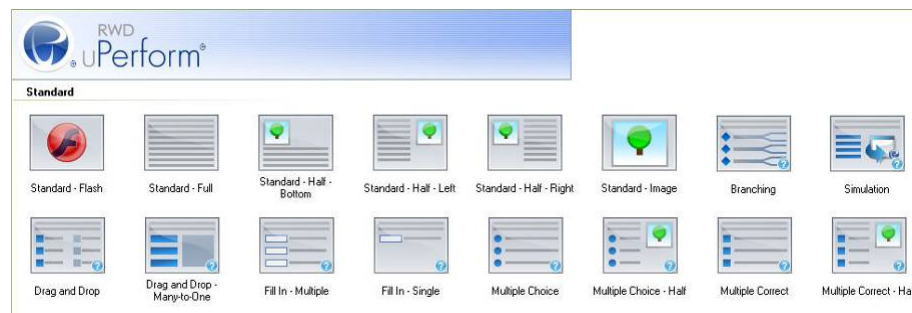- Modifying the RWD uPerform® template

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Content Creation/Conversion

- Enter into RWD uPerform® stencils
- Import PowerPoint slides
- Repurpose existing multimedia

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RWD uPerform® Stencils

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Application Demonstration

- Creating content with RWD uPerform ®

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Chat Input: Existing Assets?

- Enter your opinion to the following question in the Chat window:

What content pieces and learning resources already exist that you could use in your e-Learning courses?

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Reusing Learning Assets

- Repurpose instructionally sound content and resources
- Reuse existing electronic resources
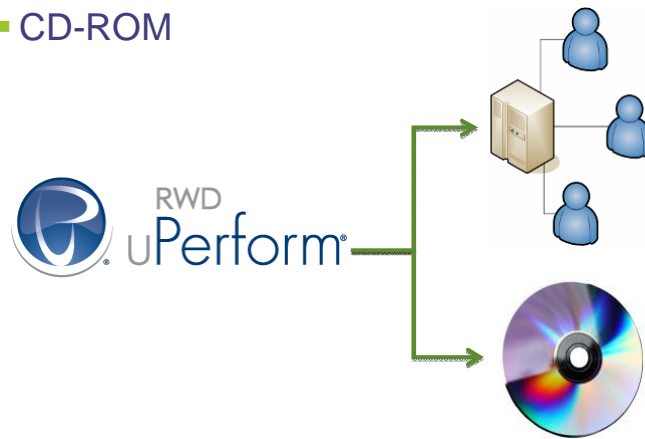
19

Application Demonstration

- Importing learning assets in RWD uPerform®

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Content Deployment

- Learning Management System
- CD-ROM

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Streamlining Tip

- Determine deployment method and attributes
  - File size constraints for LMS upload
  - Assessment scoring and recording

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Application Demonstration

- Using RWD uPerform® to publish content

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Poll: Stakeholder Reviews?

- Poll #4: How many stakeholder reviews do you conduct during an e-Learning project?

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Chat Input: Stakeholder Review?

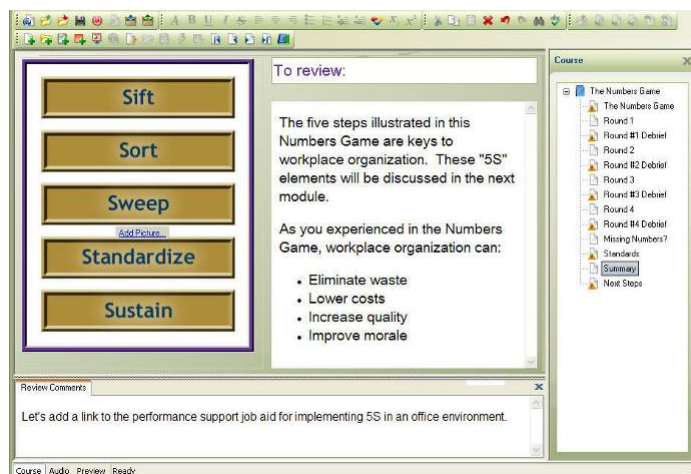- Enter your opinion to the following question in the Chat window:

How do you get stakeholders to review and provide input on the developed course content?

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Reviewing Content
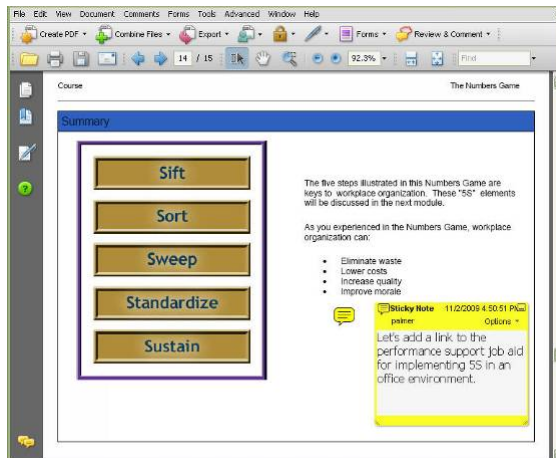
- RWD uPerform® annotations

Reviewing Content

- RWD Fusion Reviewer

Reviewing Content

- Adobe Acrobat® PDF Review and Comment tools

Streamlining Tip

- Have team members edit and modify the content directly
- Have external sources review the content in the format that's comfortable for them

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Application Demonstration

- Using RWD uPerform® annotations

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Thank you for your participation!

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Using RWD uPerform to Rapidly Design and Develop e-Learning

By Nicholas Bird

Whether you are working for an internal or external customer, your goal is the same: to create instructionally-sound content with a consistent approach. Training budgets are never limitless and requests for training often come at the last moment. So how do you adapt to constant demands to work faster while reducing the cost? Do your solutions always involve trying to fit a square peg in a round hole? I am going to show you, if you are willing to do a little bit of reading, how I have learned to rapidly design and develop e-Learning in uPerform.

First, though, what do I mean when I say, "rapid instructional design?"

For the purposes of this article, rapid instructional design is simply the hastening of e-Learning content development using tools, templates, and processes. I don't intend to validate or defend the values of rapid instructional design, or to compare rapid design to traditional instructional design methodologies. The risks attached to rapid design are well known and concerns about them are valid.

With that in mind, it's important not to underestimate the importance of being able to quickly create e-Learning content while maintaining instructional soundness. The process of getting information from a subject matter expert (SME) into an online form that a student can learn from can be daunting, to say the least. The right combination of tools, templates, and processes can be a catalyst for rapid design.

In traditional practice, the storyboard is a key tool for communication between e-Learning design team members and Subject Matter Experts. In rapid development, however, the storyboard is an impediment. In this week's article, you will learn about a tool that eliminates the storyboard and facilitates the rapid design process through the use of stencils.

Design Techniques

So what should you expect from this article?

The quality of the tools you are using has a direct link to the speed at which you can design training. In the past you've probably read articles about using Microsoft Word as a storyboarding tool and rightfully so. Microsoft Word, when used properly, is a solid tool for writing and reviewing content. In an article published in the June, 2005 issue of Learning Solutions e-Magazine, "Using Microsoft Word for Rapid Storyboard Development," Cynthia Holmes-Radner does a wonderful job of presenting a solid approach for using Microsoft Word, AutoText, and a custom toolbar to create storyboards rapidly. More recently, Maria Leggett wrote a detailed article about using Microsoft InfoPath and really leveraging the value of XML. There are benefits and challenges associated with each of these approaches.

This article will show you how I am using a new tool (RWD uPerform) in combination with instructional design processes that have been around for years. I intend to demonstrate how to use the e-Learning portion of the uPerform tool to rapidly design and develop e-Learning by leveraging the concept of stencils. In addition I will share lessons learned from years of using various instructional design tools for clients, and some pros and cons of each.

The inspiration

For years I have been using Microsoft Word as a storyboarding tool and raving about the capabilities and simplicity of it. The beauty of using Word is similar to the beauty of creating Flash-based e-Learning. Word, like Flash, is on practically every corporate desktop. This means that my clients can easily review any courses I storyboard in Word. Consider the features that Word offers when used as a rapid design tool:

- Templates to govern the types of screens created and the organization of content on those screens
- Quick access to templates to add new content screens
- Text formatting features to ensure consistency
- A quick way to receive, track, collate, and respond to client review comments
- Spelling and grammar checking
- Layout, alignment, text spacing, and other formatting features
- Table of contents that allows for organization and movement of topics in the course
- Ease of use for clients to review and add comments

However, not all clients can see the big picture and one of the limitations of Word is its inability to effec-

Our new process focuses on presenting the content for a course in a way that provides SMEs with a clear picture, and an easy method for adding content and comments that the designers can track. The process culminates in the publishing of SCORM-conformant Flash output.

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tively manage file size when the course designer adds images. As a result, storyboards in Word are generally not image-intensive.

Some of our clients requested that we create storyboards in PowerPoint so their SMEs could better visualize the final product. Our initial response to this request was to take the lessons we had learned from long experience using Word and to apply them to PowerPoint. This adjustment eventually led us to create RWD uPerform.

uPerform differs from our previous methods. It eliminates the storyboards from the process, with content written directly into an alpha course. The idea was to provide our IDs (Instructional Designers) with an environment to write in, and our clients with a look at the actual course layout as early in the process as possible.

There is always an adjustment period as you adopt a tool or process. Although our process did change slightly, the underlying concept remained the same. Previously, our IDs would:

- Take a course outline,
- Build a storyboard,
- Submit the document to the client for review in electronic or paper form,
- Incorporate comments as needed from client SME(s),
- Develop a beta e-Learning course complete with graphics, interactions, audio, etc.,
- Resubmit to client for beta comments,
- Incorporate client beta comments, and
- Submit final course for client to place on their training system.

This process required us to manage Flash- and non-Flash-based files that inevitably got out of sync with each other as we moved through each review. Client comments often came in via notes, e-mails, text changes in the storyboard (documented and not), and through conversations with SMEs. Without explicit control of the storyboard templates, the content from one project to another could differ as to the types of screens the designers were building. Lack of control could also lead to a need to develop a number of one-off Flash screens. Even though we streamlined the process, the designers and developers had to manually manage addition of the user interface, logos, colors, and SCORM content.

Overview of the uPerform process

Our new process focuses on presenting the content for a course in a way that provides SMEs with a clear picture, and an easy method for adding content and comments that the designers can track. The process culminates in the publishing of SCORM-conformant Flash output. Figure 1 shows the four primary phases of the process.

Basic concepts for building a course in uPerform

With this process, we build, review, and update new courses entirely in uPerform, using the Course object to rapidly design and develop e-Learning content. The Course file contains all the content for each page, including images and hotspots, and PowerPoint or Flash files. But understanding stencils and their use is the key to understanding how uPerform works.

Stencils

Most e-Learning courses use specific types of screens. A stencil provides a rough layout of a screen that the designer can insert where needed. Stencils can help to define overview screens, content screens, knowledge checks, assessment questions, and more. Using stencils enforces design standards, ensures coordination between instructional designers and integrators and, most importantly, increases the speed

Figure 1
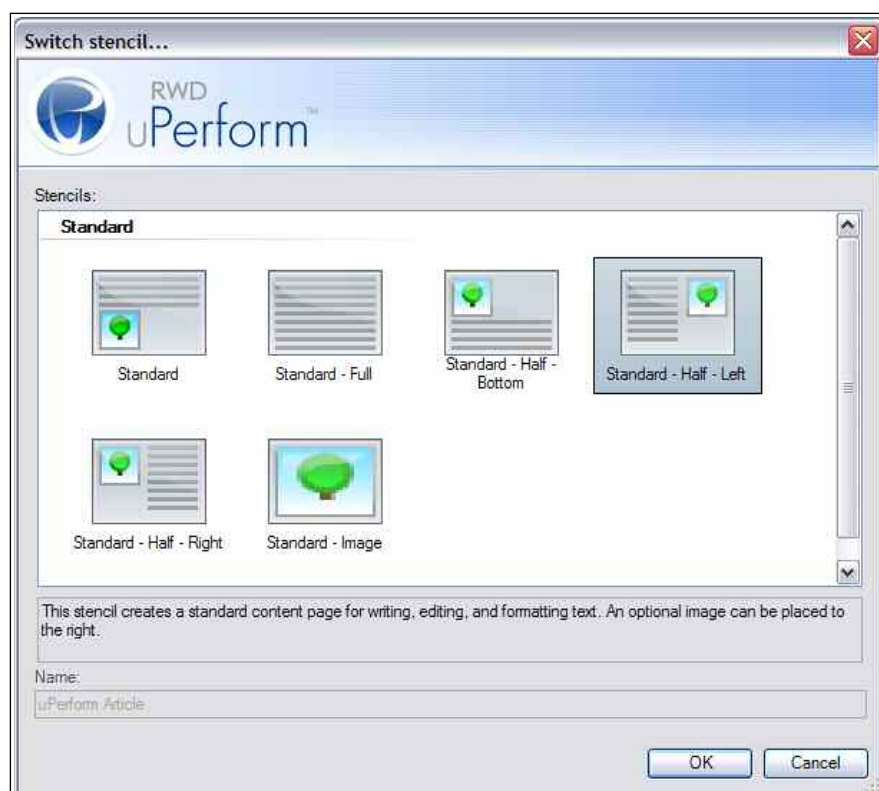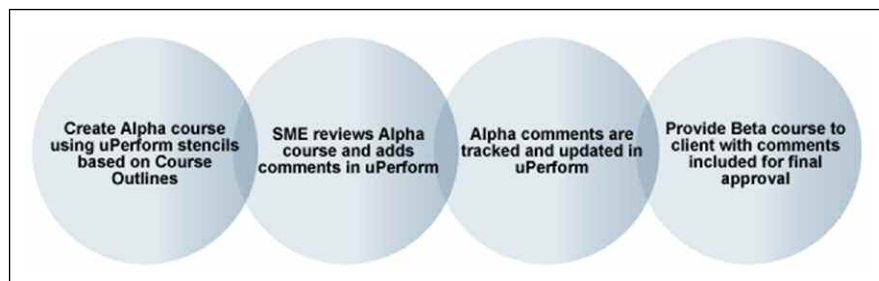*Rapid design and development process using RWD uPerform*

Figure 2 *Introduction page stencil choices*

with which designers and SMEs create e-Learning courses.

Depending on the stencil she selects when she begins to build a page, an instructional designer has a number of different content options. Each stencil designates fixed areas for the page title, text, and image. The instructional designer updates the title, enters the text, and adds an image (or a description of the image that a graphic artist will create later). The stencils available to the designer will vary based on the type of page. For example, an Introduction page will have certain stencils available for use, and an Assessment page will have a different set of stencils available.

I will demonstrate this by showing how to select a stencil for the Introduction page of a course. Each page that RWD uPerform generates is a construct of a predefined stencil. As the designer begins, the first stencil she will select will be for the Introduction page of the course. Figure 2 on page 3 shows an example of the stencil selection screen that uPerform presents to the designer for the Introduction page.
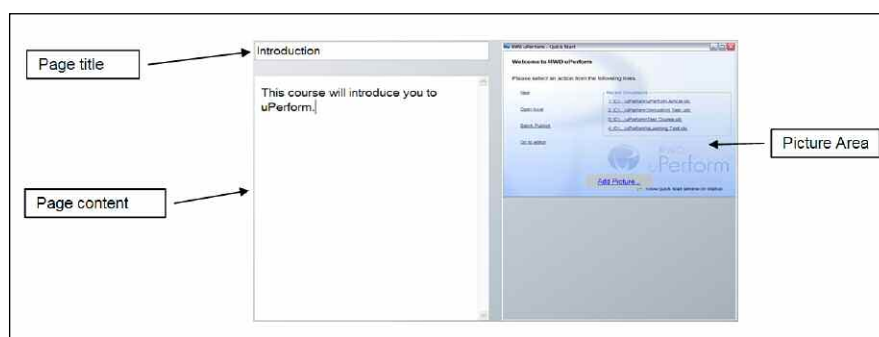
Each time the designer adds a page, lesson, knowledge check, etc., she must fill out fields based on the type of stencil she has added. For this example, I

picked the Standard – Half – Left stencil and named the page *uPerform Article* (see Figure 2). The next step is to insert a page title, the content for the page, and a picture to display (See Figure 3). With a completed course introduction page, the designer is ready to begin rapidly creating the rest of the e-Learning solution.

Views in uPerform and the Course Layout Pane

While each stencil is different, the process of inserting a page and editing or updating content is the same. Beyond the basic page stencil concept, there are two additional important features of the uPerform environ-

Figure 3
Course Introduction page

ment that help the designer and facilitate rapid design.

First, uPerform offers three views for the content. The three views are Editor, Audio, and Preview.

- **Editor** – This is the default view for all the work of designing the course.
- **Audio** – This allows the designer to link an audio file to the page, listen to the audio file, and add transcript information for that page. The designer can also check the transcript against the audio in this window.
- **Preview** – This presents the content as it will appear in the finished course.

The designer can display the course objects he has already created in the Course Layout Pane (see Figure 4). As the designer builds the course, he will add pages, delete pages, and will sometimes need to change their order. In uPerform the designer can rearrange content by simply clicking and dragging a course object to a new place in the sequence. She can reorganize entire lessons with a click of the mouse. By contrast, when using Word in conjunction with Flash under our old process, it might take hours for a designer to update the storyboard, communicate the changes to the development team, and then update

Figure 4 *Course Layout Pane*

the Flash source files.

The View Annotations Feature

The editable regions for each stencil let the designer define what the learner will see on the screen. But designers do not work alone, and they must communicate many of the details to others on the team who will produce content. The Instructional Designer can use the **View Annotations** area to document client requests, communicate image details to a graphic artist, or identify which PowerPoint file to import into

the course. This area can also be an ideal location to track other important information:

- The terminal and enabling objective that this screen addresses;
- Any type of custom Flash SWF files that a developer needs to create;
- Information about the on-screen image and the alternative text;
- Information about audio that the designer may want linked to this screen; and
- Any notes for a Client/SME as they perform a review.

Figure 5 shows what the designer sees while actually creating content; the stencil with its inserted content is on the left, the Course Layout Pane is on the right, and the View Annotations area is at the bottom of the screen. This is a Course Introduction page that I created with the Standard Image stencil for a course on effective searching. The designer can hide the View Annotations area when she does not need it, to allow for a larger viewing area. To toggle the View Annotations area open or closed, the developer selects or deselects **View>View Annotations** from the menu bar at the top of the screen.

To add an annotation, the designer clicks the **Click here to create a new Annotation Set** link in the View Annotations area. Each annotation set displays as a tab in the View Annotations area. Add more annotation sets by right-clicking on one of the tabs.

Each annotation set displays across all pages in the course, but the content added for a particular page displays only for that page. As such, a best practice would be to use generic names for the annotation sets like Course Objectives, Graphic Notes, etc.

Building a course

To begin building a course in uPerform you should have an approved course outline, as much source material as you can assemble, and any image files that you intend to include in the course.

It is a good idea to begin by building the infrastructure of the course. It is easy to add, move, or delete individual pages, so you can revise and reorganize the course content as needed at any time. Insert a lesson page for each lesson you will have in the course, and an assessment page for the course. Add any annotation sets and incorporate the content for these pages. This will provide the structure and identify objectives for each lesson.

Suppose you want to create a 15-minute course on the basics of performing an effective search. Figure 5 actually shows what you might see as you use uPerform to put this together. I will walk you through the complete construction of the course. I'll also show you the development of the first lesson of the course, **Search Tools**, which discusses the types of search tools, which categories the search tools fall into, and the proper search tool to use.

Setting up the course

The first step is to create the new Course file and name the course. (See Figure 6 on page 7.) We will name the course "Effective Search Fundamentals."

After clicking the **OK** button, you see the **Select Introduction Page Stencil** window (see Figure 2). The introduction for this course uses the collage graphic of various search sites that you see in Figure 5. For this purpose, the appropriate stencil is **Standard – Image**. Click the **Add Picture…** link on the stencil and select the collage image file.

Now you can build the course construct from the approved course outline. The course outline shows that there are three content lessons, a course summary, and an assessment. Before adding content, you should add the necessary pages to the Course Layout Pane. You insert course objects by selecting options from the **Insert** menu, by clicking a button on the **Course** toolbar, or by right-clicking on an item in the **Course Layout Pane** and selecting a course object to insert. Your preference is the only factor here. My own way to add objects is by clicking the appropriate buttons on the **Course** toolbar. Figure 5 shows what the Course Layout Pane will look like after you complete the steps that follow in this section of this article.
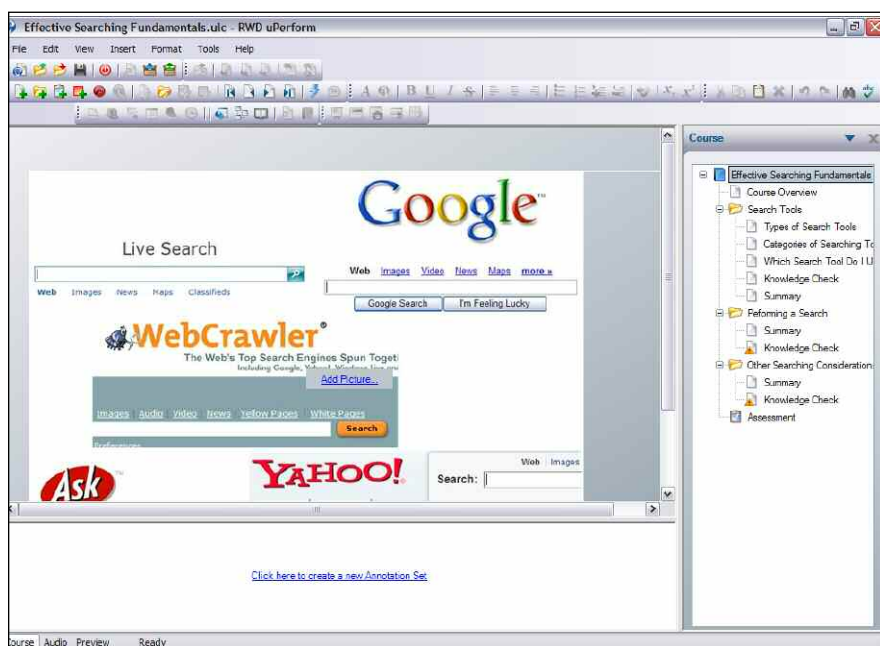
Before the first lesson I do want to add a screen that covers the basic details of the course including objectives, intended audience, prerequisites, and dur-

It is a good idea to begin by building the infrastructure of the course. It is easy to add, move, or delete individual pages, so you can revise and reorganize the course content as needed at any time. Insert a lesson page for each lesson you will have in the course, and an assessment page for the course. Add any annotation sets and incorporate the content for these pages.

Figure 5
The uPerform designer interface, showing a Standard Image stencil with inserted content, the Course Layout Pane, and the View Annotation area.

ation. Click the **Insert Page** button, select the **Standard – Full** stencil, and name the page "Course Overview." This stencil is text only. Identify a content title to appear on the screen and the content text for the screen after you have completed adding the objects for the course.

The next step is to add a placeholder for each of the lessons in the course. The lessons I will add are titled, "Search Tools," "Performing a Search," and "Other Searching Considerations." Each lesson is approximately five minutes long and includes a lesson introduction, three or four content screens, a knowledge check question, and a lesson summary. The course outline specifies the type of stencils to use for the lesson introductions, knowledge checks, and lesson summaries. For continuity the lesson introduction and lesson summary screens will use the **Standard – Half – Left** stencil. The client has communicated that all knowledge checks are to be multiple choice questions with no images. Based on that, you know you need to use the **Multiple Choice** stencil for these.

The names you give the pages are entirely up to you but for this course we will make all lesson introductions match the lesson title, name the lesson knowledge checks "Knowledge Check," and name the lesson summaries "Summary" in the Course Layout Pane. When we have done this, we add an Assessment object. This serves as the content screen that appears before the learner takes the assessment. This is good for communicating the requirements of the assessment and any information the learner will need to successfully complete the assessment. Since this is an information screen, use the **Standard – Full** stencil again, for the most space for text.

Building a lesson

You have successfully constructed the shell of the course and are now ready to go back to the first lesson and flesh out the content and the stencils you will use. A glance at the course outline shows that there are three content screens in the first lesson that will need both static text and graphics. A graphic designer will have to make the graphics, but you need to communicate what the graphic designer needs to build. So before you begin adding content you want to add an annotation for the course, called "Graphic Notes." This is where you will store information for the graphic designer so he knows what image to construct for each screen. Select **View>View Annotations** and then click the associated link to create a new annotation set. The **Graphic Notes** annotation set is now visible on all screens and you can add specific details for each screen.

Now refer back to the course outline, gather the pertinent details for this lesson and update the lesson

introduction screen content for the **Search Tools** lesson. Each lesson introduction will consist of a few sentences about the value of the lesson, the objectives for the lesson, and the duration of the lesson. The course does not have audio for every screen but the outline asks for audio for each lesson introduction screen. Recording the audio will happen later, but it is your responsibility as the ID to provide a transcript that tells the audio talent what to say. The audio for this course will be a verbatim reading of the text on the screen. Begin by copying the text in the content area. Select **Audio** from the **View** menu. The Audio view allows you to upload and listen to an MP3 file and add transcript text. You can then paste the content screen text in the **Transcript** field. This is a plain text field with no formatting options. If instructions are necessary, I would suggest an Audio annotation set to provide detailed instructions for the audio talent.

Now that you have updated the audio details, select **View>Editor** to return to the course editing screen. There are three screens to add, and since the images will be much wider than they are tall, apply the **Standard** stencil type. This stencil allows for an image at the top and text beneath. Once you have entered the content for each page, you can go back through and clearly identify what you are looking for in the visual.
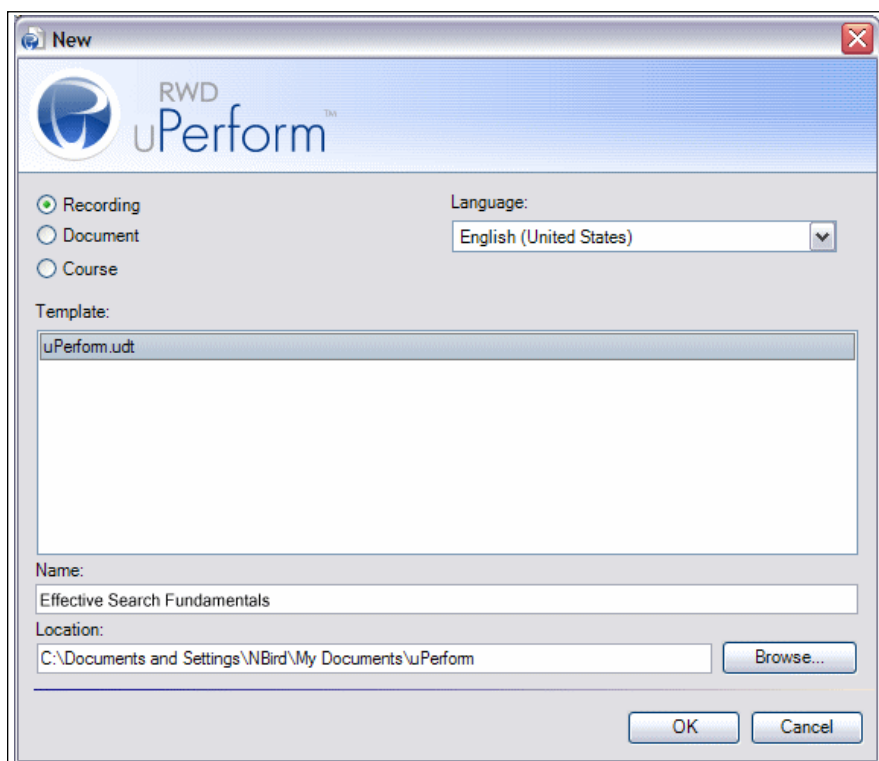
You have now updated the lesson introduction, added and updated the content screens for the module, and added any graphic and audio details needed. To complete this module, you also need to complete

Figure 6
Creating a new course starts with this screen.

the knowledge check and add the content for the lesson summary. This knowledge check will be multiple choice, with no image. As the ID, you can define the instruction text the learner sees, the question stem, and the distractors. The instructions default to "Select the best answer to the question." My best practice is to typically include four distractors, in order from shortest to longest. The stencil allows you up to six distractors and the ID can determine how many are used. To identify the correct answer the ID selects a radio button.

To complete this lesson you need to add the content for the lesson summary. For this course the summaries will include a sentence letting the learners know they have completed the lesson, a review of the lesson objectives, and a sentence instructing them to click Next to continue the course.

Other things to consider

Each project is going to be different. Some will be as simple as converting an existing PowerPoint presentation quickly for distribution and tracking while others will include adding Flash development in the course and more elaborate rollovers and popups.

- **PowerPoint Import:** There is often a wealth of content within a company already written in PowerPoint. As part of your rapid development you can import PowerPoint slides directly into uPerform. This allows you to take an existing slide deck and quickly make it a more engaging e-Learning experience that can include interactions, audio, and assessments. You can store and track the results in a Learning Management System.
- **Flash Import:** The ability to import a single, self-contained Flash file (.swf) into uPerform as a course page allows more advanced developers to work directly with SMEs to bring highly engaging content to the learner.
- **Image Hotspots:** The uPerform Hotspot feature allows you to specify portions of a graphic to create a rollover effect or a simple link to a Web site. The designer simply outlines the space for the hotspot, sets a few characteristics, and it is done.
- **Publishing:** Clicking the **Publish** button allows you to save and package your course materials into a folder. In that folder are all the files (such as the imsmanifest.xml) and course files you will need to add the course to your LMS.

SME review of the course

Once you have completed building the alpha version of a course, you will need to submit the course to the SME for review. In the past you might deliver a printed version of a storyboard to a SME or an electronic version in MS Word using "Track Changes" to document issues. How often does a single person know all aspects of the training material you are developing? Normally, there are multiple people reviewing these courses. In my experience even the best of intentions won't get SMEs to consolidate their comments. There are inevitably comments that contradict another SME and three versions of the same storyboard after review. The online reviewer built into RWD uPerform eliminates these issues by allowing SMEs to enter comments electronically that directly link to the screen in question. You can then archive the comments and sort them by the name of the person who entered the comment.

A common mistake made during the review process is assuming your SME knows what you want. Clearly setting expectations with a SME is vital to a quality review. Communicating the amount of time available for the review, the areas of the course the SME should review, and what constitutes a quality review comment, are all critical expectations. Properly aligning with your SME can be the difference between getting a comment that says, "Replace this" and getting a comment that identifies the exact text to delete and the exact content the SME wants added.

These instructions do not have to be complicated. Instruct your reviewers to clearly identify the position of the error on the screen and a detailed action to take. If a SME wants an additional paragraph or a different title, ask him to add this content in the comment. The instructional designer can make sure the information provided by the SME is reviewed for instructional quality. Educate clients on how to manage multiple reviewers. If the client plans to have multiple people review the course it is best to let the person with final signoff review the course last, with knowledge of the comments that other reviewers have made. It can reduce the time it takes to complete the review and ensures that multiple points of view are considered.

Finally, make sure the SME understands what constitutes acceptance on his part. Many times we will ask our clients to refrain from sending us anything until they have completed their review. You could have an approval document for each course, or you could simply educate the SME that his e-mailed response, stating he has completely entered comments on the course, is his approval to build the course with those edits included. The important thing is that whatever you choose to do, the SME is aware of it and has agreed to the process.

Final thoughts

The speed with which one can create high quality content is obviously important. One of the primary inhibitors that many of us have been working on is

A stencil provides a rough layout of a screen that the designer can insert where needed. Stencils can help to define overview screens, content screens, knowledge checks, assessment questions and more. Using stencils enforces design standards, ensures coordination between instructional designers and integrators, and, most importantly, increases the speed with which designers and SMEs create e-Learning courses.

eliminating the need to convert our storyboards to Flash. Regardless of the tool you are using, the need to copy and paste, or to apply a conversion to the storyboards, adds time and introduces errors into the process. I feel that uPerform improves the process for an ID because the content you write is not manipulated in any way. Time is not spent moving content into Flash or packaging the files for an LMS.

Author Contact

Nicholas Bird is a Senior Web Content Developer with RWD Technologies, Inc. (www.rwd.com) in Baltimore, MD. Nicholas has been involved in custom content development and e-Learning since 1999 when he began working with Lockheed Martin developing custom ILT, and synchronous online delivery courses training Fortune 500 employees on skills like HTML, Website Design, JavaScript, and VBScript. He also spent time as a trainer and Project Manager of e-Learning Technologies at QVC, Inc where he was responsible for all aspects of developing various training solutions for internal employees and partner companies.

Nicholas is currently in his third year at RWD and has been involved in the design and writing of over 30 e-Learning courses for a variety of Fortune 100 manufacturing, telecommunications, pharmaceutical, agricultural, and information technology companies. Nicholas really enjoys the creative process and helping clients and coworkers find innovative solutions to their training needs. Nicholas has a Master's in Business Administration focusing on Technology Management from the University of Phoenix. You can contact Nicholas at nbird@rwd.com.

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