Is a Dynamic Multi-lingual Web Presence Possible?

DCI Conference on Content Management, Internet Portal, and Collaboration

Presentation Time: 40 minutes

Larry Richman and Ron Schwendiman were invited to give a keynote address at the DCI Conference on Content Management, Internet Portal, and Collaboration *in Phoenix on April 12, 2005. The purpose of this presentation was to show how the Church is using content management, portal, and collaboration in the redesign of our Web sites. The audience was mostly business-side people, although there were some technical people in the audience.*

Introduction

Good afternoon. My name is Larry Richman. ▌ I am the product manager for the Internet sites of The Church of Jesus Christ of Latter-day Saints; we are sometimes referred to as "Mormons." We are currently in the process of redesigning and rebuilding our Web sites using portal and Web content management technologies to develop a multi-lingual presence, so that users can select and view material in the language of their choice. The purpose of this session is to review our strategy and vision, how and why we selected the tools we did, and what successes and difficulties we have had in implementing portal, collaboration, and content management in a multi-channel, multi-lingual, worldwide organization.

▌ The agenda for these 45 minutes is as follows:

- First, I'll speak for about 20 minutes to give you an overview of our organization and the complexities and needs we are addressing. I'll talk about the business needs that have driven us to our current project. I'll describe what it is we are trying to build—what we mean by a dynamic, multi-lingual portal.

- Then Ron Schwendiman will speak for 20 minutes about how and why we chose the tools, how we're integrating them, and what successes and difficulties we have experienced so far.

Our business needs

Complexities of the Church Environment

▌ ▌ The Church has over 12 million members, ▌ more than half of whom live outside the United States, and speak many languages. We have a translation program where most ▌ Church materials are translated into 27 languages and at least ▌ some materials are translated into 185 languages. These 185 languages ▌ use 29 different writing ▌ systems. [pause] ▌ ▌ Our 12 million members are organized into ▌ 26,000 local congregations in 160 countries around the world. These local congregations are organized into ▌ 3,600 larger administrative units, which are likewise organized into ▌ 30 areas. There is a strong central leadership in Salt Lake City, with a ▌ Prophet, who is the President of the Church, ▌ 12 Apostles, and many ▌ functional administrative departments who carry out the business of the Church. This hierarchy of organizational structure facilitates communication and training. However, it is often difficult because the Church has no paid, full-time clergy. In addition to their professional occupations, members from each congregation are called to voluntarily serve in various positions as leaders of the congregation and of the many programs we have for women, men, youth, and children. This presents unique challenges in training and implementing standard practices throughout the world. ▌ We often use a combination of methods for communicating and training, such as training sessions broadcast over the Church satellite network to chapels around the world. We also stream these on the Internet, and often follow-up with transcripts of the training, DVDs, audio CDs, or other electronic formats. You may have heard one of our ▌ General Conferences where the President and Prophet of the Church and the Twelve Apostles speak to the world. These are broadcast around the world on many local and cable television and radio stations, in addition to the Church satellite network and streaming on the Internet. The live conference held 10 days ago was interpreted into 75 languages, using hundreds of volunteer

translators.

Web Properties

We manage nearly a thousand domain names for about a hundred Web sites, with hundreds of thousands of pages of content in up to 185 languages.

Currently, these Web sites are:

- Good places to access current information.
- Used by many people, primarily in the USA.
- Mostly English in content and navigation.
- Built from perspectives and needs of departments at Church headquarters.
- Designed around static content.

Let me review briefly some of our better-known Web sites to give you an idea of the audiences and complexities we deal with and where we need to make improvements.

lds.org

Lds.org is the official site for The Church of Jesus Christ of Latter-day Saints. It provides official information about the Church and links to other Church sites and applications. Key audiences include members and leaders of the Church. This site gets 30 million page views per month.

In the center section, we feature items of interest to visitors. It includes a message from Church leaders, upcoming events such as this worldwide meeting for young women, and new content on the Web sites, such as the launch of country-specific sites highlighted on this slide.

On the right of the page, you'll see news of the Church and current events with information about broadcasts and other calendar items.

Gospel Library

We are building a huge online library of scriptures, gospel literature, music, art, and media. Our goal is to promote the readership and use of the scriptures, learning aids, maps, pictures, reference materials, and administrative training materials for local leaders. The existing library contains about 100,000 pages of materials—primarily in English, but also some material in dozens of other languages. We are in the middle of a year-long project to move all the existing data from proprietary database systems to XML Oracle and Vignette Content Management. We will then add to this, many hundreds of thousands of pages of material from many other sources in 185 languages. All this needs to be indexed and categorized, so users can browse or search and find what they need. Every piece of content also needs to be indexed to language translations of the same content, so a user looking at a particular magazine article in English could choose to see it in Japanese and the content management system would pull up the Japanese equivalent. In this library, we provide materials in a variety of formats, including HTML text, MP3 audio files, video, Flash, and 11 PDA reader formats (5 popular readers for the Palm and 6 for the PocketPC). We'd like to get out of the business of transforming text into these reader formats and storing these specific files, and believe we have a solution to create programs that will transform the raw XML text on demand into the requested reader format, and deliver it to the requestor. We have also begun providing Braille files for many items. These are digital files that can be downloaded and printed on a Braille printer or played by small electronic devices that create raised bumps that a person can feel with his fingers.

Home and Family

Lds.org has a section of resources for the home and family. It contains suggestions on building a strong family, has high resolution artwork that can be used to teach children and youth, as well as videos on building strong family relationships.

Music

We have a music section that was won awards for its interactive player that allows you to select from hundreds of hymns and children's songs and play them live. You can change the tempo, change the key, or listen just to the individual choral parts (soprano, alto, tenor, or base).

Provident Living

The Provident Living section contains a wealth of information about living a provident life, including employment and career development, physical health, emotional strength, education and literacy, self sufficiency, wise management of personal and family resources, and emergency preparedness.

Humanitarian Aid

Our Web sites also provide a major source of information on humanitarian aid, which is very important to the Church. We believe that caring for others, regardless of their religious affiliation or nationality, is the Gospel of Jesus Christ in action. 100% of all contributions to the Church's global Humanitarian Aid Fund go directly to help the needy, because all administrative costs are covered by the Church. People can use our Web sites to contribute to any one of a number of humanitarian aid projects. In the last 20 years, Humanitarian Services has provided three quarters of a billion dollars in total assistance to needy individuals in 154 countries.[1] Last year alone, we donated 28 million pounds of clothing,[2] in addition to tons of food, hygiene kits, and medical supplies. When the earthquake and tsunami hit Southeast Asia in December, our servers had trouble keeping up with the people who tried to make online donations. Although we took in millions of dollars in donations in a matter of a few days, we had many people drop out before the transactions were completed. We need the ability to respond quickly with content and services in many languages when natural disasters like this hit.

Education

Since the Church strongly believes in education, we provide a portal of information about the 4 colleges and universities that are owned and operated by the Church (like Brigham Young University). This site also gives information about the seminary program (which is weekday religious instruction available to high school youth) and institutes (that provides religious education to college students). We also have a Web site and applications that assist in providing student loans to help 18,000 young people in Third World countries get the education they need to better their lives.

Serving in the Church

The Serving in the Church area of lds.org has information specific to leaders who are called to provide volunteer service in leading local congregations or in running programs for women, men, youth, and children. It contains guidelines, resources, and even online e-learning courses.

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[1] These are public statistics from the Humanitarian Web site: "From 1985 to 2003 Humanitarian Services provided more than $643 million in total assistance to needy individuals in 154 countries." Since I'm quoting 20 years (1985-2005), I felt confident to round up to the general number of "three quarters of a billion dollars.)

[2] According to tour guide at Welfare Square on 16 Feb 05.

Web Sites for Local Congregations

We have created standard templates to assist local congregations in providing information about the addresses and times of Sunday meetings, calendar of events, and phone numbers. We currently provide this Web site functionality in English, but we need to expand it in many languages for use by congregations worldwide. This is the home page of the site for my local congregation. I can log into it because I'm a member of that congregation and can see the phone numbers of others in my congregation. But if *you* look at this page, you'll just see the public information, such as where the church is located and what times our meetings are held. We are building a custom identity management system to track the roles of the user so we can provide a more valuable online experience, tailored to the individual's needs. For example, we want to know if the person is a leader of a youth group, so we can direct him to guidelines or online training that is relevant.

If you want to find one of our Church meetinghouses, we have a locator tool. You can type in an address and find the nearest church where you can attend services. In the United States and Canada, we use a Web service to convert the street address to a geocode and compare it with a database of boundaries of the various congregations to determine the exact congregation, and then return the street address of the church where that congregation meets. Many other countries have poor or no geocoding. So the interface may return simply a list of meetinghouses in a given town, and the user can pick one that is nearby. We plan to expand this capability as better geocoding becomes available. We also plan to translate the interface into ten languages by the end of this year.

Newsroom

The newsroom site is for news media professionals to capture news stories and events about the Church. So there's another audience we write for—journalists—and they use this site at the rate of a million pages views a month.

Mormon.org

Mormon.org is our site developed specifically for those who know little or nothing about the Church, and want to learn about its beliefs. It has a wealth of information and several interactive features, such as the ability to send free electronic greeting cards or take a virtual tour of one of our churches. This is our only Web property today that is translated into multiple languages—21.

Country Web Sites

Since the Church has members in most of the countries of the world, we have a need for country-specific Web sites to provide information about the Church in those countries. To date, we have launched country Web sites in 39 countries with 41 more under development. This is an example of the site in Germany. Country Sites provide local history and information about local events, as well as access to translated materials in the Gospel Library mentioned previously. These sites are not hosted on our central servers, but by local ISPs in each of the countries, which tends to help users find these sites using local search engines. For example, when a user in Russia searches for Russian words, Yahoo.ru will find the site hosted in Russia before it will find lds.org hosted in Salt Lake City.

FamilySearch

One last well-known site we run is familysearch.org, which is the world's largest free genealogical Web site[3] with online access to billions of birth, marriage, death, and other genealogical records. It has well over a million registered users. In its short 5-year history, it has attracted nearly 200 million visitors viewing nearly 4 billion page views. This creates its own challenges in managing such a large site. We don't have immediate plans to use

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[3] See http://www.familysearch.org/Eng/Home/News/frameset_news.asp?PAGE=Press/1999-06-25_PAF_download.asp.
Was the largest genealogical Web site in 1999; now is 3rd largest (2005).

content management, collaboration, or portal for this site.

Needed improvements

Let's talk for a minute about what we need to fix with our Web sites.

- In terms of general improvements:
    - Need consistent navigation, design, and branding. (You've seen some of the disparate Web properties we have.)
    - We also need information organized around user needs. (Our current sites are information silos organized around the headquarters administrative departments that created the content. This is a natural phenomenon that occurs in large organizations—where each department puts what it creates in its own space. But this makes it very difficult for the user to find what he or she is looking for, because it requires an understanding of which department created the content in order to find it.)
    - Need to provide information based on the needs of the user. (We need some way of identifying the needs or roles of a user so we can provide a more valuable online experience, tailored to the individual's needs. As I mentioned earlier, if the person is a leader of a youth group, we want to provide access to the information that person needs, such as guidelines or online training about youth programs.
    - We also need search capability across all our sites. (We currently offer only a limited search in a few specific areas.)
    - Need to increase worldwide usability by expanding our user base from English and USA to worldwide. We need to translate our upcoming redesigned sites (both the navigation and all content) into 10 languages for starters. We need to provide a lot of content in the Gospel Library in 45 languages, with some content in as many as 185 languages.
    - We also need a content management environment to manage all the content and navigation elements in the various languages. (It would be a nearly impossible effort to build and manage all this in multiple languages as static Web pages.)

- In terms of Efficiencies, we really need two things:
    - First, we need to respond to the high cost of Web development and an increasing demand for content services. (We need to simplify and standardize our infrastructure and processes to provide lower operating costs and quicker response to needs. We also need scalability. Today the requirements are to have all sites and content in 10 languages. Tomorrow, it may be 50.)
    - Secondly, we need a consistent measurement of usage and effectiveness of all sites. (We are defining our success metrics for each site and identifying standard measurements across all sites so results can be aggregated in meaningful ways. Then we need to implement more regular reporting to key stakeholders.)

Where we're headed

- To develop our new content structure and navigation, we have fixated on the needs of the user to determine what the user experience should be. Through research, we determine who our users are and what their needs are. From that, we developed primary and secondary personas, like the mythical Jorge Costa shown here. He is a 26-year-old male, married with 2 children. His primary goal is to "use the Gospel Library to learn about the gospel and teach [his] family." On the right, you can see what he wants to do when he comes to the online Gospel Library:
    - Take away articles and quotes in both print and electronic format.
    - Locate specific answers to questions.
    - Stay up to date on the latest information from the Church.
    - Search and browse, based on dates, authors, or key ideas.
    - He wants to copy and print text and images easily.
    - And to locate images, music, and videos to help teach his family.

Along the bottom, you can see more demographics about Jorge. He is a youth leader in São Paulo. He enjoys teaching the youth. He spends 5-10 hours per week on the Internet and has a high-speed Internet connection. He want to keep current on Church events and the Gospel Library is his most frequently used option for personal and family study.

We believe that understanding our audience to this level of detail helps us write and organize content much more effectively.

So let's take a look at what we are planning to build.

■ This is a screen shot of our new visual design for lds.org. It has a simplified navigation structure so we can maintain a clean, uncluttered look on the home page. We've categorized all the content into six basic channels, and each has fly-out menus ■ ■ ■ ■ ■ so users can access nearly 100 content areas with one click from the home page.

■ The entire site will be translated into 10 languages. Vignette Content Management will allow us to manage all the content and navigation elements in the various languages, so that a user can select a new language on any page and the entire page will be dynamically rebuilt in that language. ■

In a few weeks, we will launch our first dynamic section of this site using Vignette Content Management (version 7), Vignette Application Portal, and Autonomy search. This is a historical site on the life of Joseph Smith, who was the first president of the Church. We are launching this site to commemorate the 200th anniversary of his birth, and also the 175th anniversary of the founding of the Church. The site contains a wealth of historical narratives about his life and the events that lead to the founding of the Church. ■ We will launch similar sites about the other presidents of the Church.

■ Ron Schwendiman will now describe what tools we have used, how we selected new tools, and how we are using them to meet our needs.

■ Good afternoon, I am Ron Schwendiman, Manager of Internet Operations for the Church of Jesus Christ of Latter-day Saints. Larry has given you the current case for change in our Web sites. The Church has had a presence on the Internet since 1996, with the latest iteration having been in place since 2000. ■ Let me describe for you the goals of the process we have been through to get to where we are today, The case Larry has described began 2 years ago, and included an 18 month process to select new tools to power our needs. That process ended in August 2004 with the selection of Vignette Content Management, Vignette Application Portal, and Autonomy Search. I will address our selection and implementation of each of these tools in a few minutes. ■ Since August, the team has been through 300+ hours of training on how to build and manage using the new tools. ■ We set a 12 month delivery timeline to build the new sites in the new tools. ■ We were asked to have all content on the current sites converted to the new tools and available in the new sites in 10 languages. ■ Which means 50,000 to 100,000 pages of content on the sites per language. ■ We have a goal of a quarterly release schedule for 2005 and 2006 ■ and a total 3 year project timeline to move all Church properties to the new content management and portal environments.

■ The technologies and tools we are currently using to power our Web sites are:
- ■ Vignette version 6 of the content management product.
- ■ We have built 1000s of pages using Tcl code to provide management and administration screens and services to our product managers and content providers.
- ■ Nextpage content management for large sections of text and a basic ability to search that text..
- ■ Our implementation of these tools in an uncoordinated manner has generated inconsistent user experiences on our sites, and multiple copies of many content items.
- ■ We have had localization capability but the effort and time have been resource prohibitive. Therefore, we have not aggressively or consistently localized content and sites.

█ If we look again at the Improvements slide Larry presented, we can align the tools and technologies strategies we selected to address the major aspects of the improvement need. █ We positioned Web content management as the key solution for seeking consistent navigation, design, and branding. █ We identified portal tools and classification or taxonomy management tools as being key to organizing information around users needs. █ Portal technologies in concert with identity management tools will provide us with the ability to extend or limit access to content areas and applications by such characteristics as user, group, role, language, and location. █ Our current search capabilities are extremely limited and has been the largest feedback category from our users, so an enterprise multi-lingual search capability will be an easy win for our visitors. █ Web content management tools will enable us to provide language content and navigation, █ and integrated with portal they will enable us to separate visual presentation from content by use of templates for dynamic presentation of content on a page. When I say dynamic presentation, I mean that a user could be looking at any page in our site in English, click on a German button, and the exact page would be rebuilt with the exact content and all navigation elements in German.

█ In terms of the efficiencies we are hoping for (and even optimistically expecting), are █ that the open extensible nature of the tools we selected will provide us the capability to reduce the cost of development within a short period of time. Some would call this an expectation of return on the investment, since we are not for profit, we see it as our ability to produce more at the same cost. █ Consistency is a key to our efforts as an organization and in the value we provide to our users. The tools we have selected are aligned to enable us to take full advantage of their internal metrics combined with external metrics to adequately approximate the effectiveness and value of our Web services.

█ With the improvements and efficiencies as a backdrop, let me describe briefly the 18 month selection process in one slide. █ A team of 8, representing both the engineering and technology side and the business or services side, spent 6 months learning all we could about what was emerging, changing, and progressing in the market of Web content management, portal, and search. We spoke with organizations of many sizes to see not only what they had in place, but what their longer term strategies and needs were. We met with the major vendors and asked them to respond to a request for information. █ We took our interviews and their responses to our request for information and created a matrix of █ 85 needs or requirements by which we scored and reviewed each of the vendors. █ The major areas of aggregation in our matrix were: Features and Functions; Development interoperability (meaning ability to work with established legacy systems); Overall architecture and strategy; the vendors organizational structure, strategy, and reputation in the market; and finally the cost of the product, hardware, services, and support.

█ During our review and evaluation of the tools and vendors that were leading the market space in 2003, we identified a few areas or holes that were not being filled that were going to be critical for our success. █ With 50,000 pages of content on the site and another 15,000 pages annually being added, we need a consistent XML based authoring and content creating environment that will enable us to prepare the content once and then deliver it through many channels. We have expanded the definition of channel to include print, audio, video, e-learning, and the Web. XML, dynamic content on sites, and identity management among other issues highlighted the need for █ some means of standardizing, managing, and reconciling metadata and other types of taxonomies across the enterprise. Web content management tools allow for classification of content and the assignment of metadata based on content types or other attributes, but they are limited to the Web channel. We need a toolset that will enable us to consistently apply classification, categorization, and other metadata to all content in all delivery channels. █ Metadata management highlighted the need for a comprehensive identity management solution for truly customized content delivery. Much as metadata provides classification of data, identity management provides classification of users by roles, location, and language. █ Localization and Internationalization are always top of mind for us, and we found that most of the vendors have capability to localize content, but not to the scale we are anticipating to grow. So we, began the search for localization and internationalization tools. █ I will admit that workflow and collaboration were not high on our list of requirements as we narrowed the field of Web content management and portal contenders, but they have become more necessary. We are glad that the major vendors are providing workflow and collaboration now, and as truly integrated tools in the future.

█ After many months, multiple demonstrations, and some proof of concept work, we made the following selections. █ I will now spend a few

minutes outlining what benefits our selections have for us as an organization. Many of the characteristics I will describe are found in many of the other solution providers in each category, but I will address why we feel this solution meets our needs. I will then spend a few minutes describing some of the difficulties we are having implementing all of this, and then tell you what is next for us.

Our selection for Web Content Management is Vignettes Version 7 of Content Management. The areas in which we feel Vignette shined in both theory and practice were:

- A template approach to content management provides us the dynamic language capability that we feel will reduce some of our effort in building sites. The integration with the portal tool in this template approach was another key factor.
- The ability to edit the content using XML markup tools directly within the pre-production environment will streamline our language review and approval processes.
- The embedded workflow engine ensures that content objects are not lost or misplaced as they move through the production process.
- Vignette focuses on XSL development within the content management engine rather than JAVA, which we believe will reduce costs and improves our ability to deliver sites faster.
- But in the same breath, we are grateful for the JAVA APIs that will allow us to extend the functions and future value.
- Finally, we gave it high marks for the internal metrics and content evaluation characteristics to know what content is being accessed through which pages. We will have content that is stored once but presented to many different pages. Vignette will allow us to track that usage effectively.

Portal was a relatively new concept when we began our search, but it has matured a little. We started with just 3 vendors, and ended up selecting Vignette's Application Portal, formerly known as Epicentric.

- Key for us in a portal was the user and role based capabilities that are available in many portal products. Vignette's portal and its integration and harmony with their content management met our requirements more completely than merging 2 systems by ourselves.
- Consistency in branding and standardized definitions for user experience were strong variables.
- The ability to integrate with Identity Management systems to have very targeted and focused delivery of applications and content were required.
- The added bonus of in-context management, editing, and localization were all benefits that Vignette provided. We saw portal as an extension to content management that enables a broader and more varied ability to deliver not only content but applications to users worldwide. The integration Vignette has done with Content Management and Portal provides a very consistent development approach for our engineers.

Search is a very important element of our case for change, and we spent a fair amount of time and effort reviewing the capabilities of the various enterprise level search engines. Autonomy's approach to search is unique, and provides strength in dealing with languages that is not simply language based.

- Autonomy is used by Vignette for internal search of the content management system.
- The standard search options of keyword, fuzzy, Boolean, and natural language are available. But we found the enhanced language capabilities of the Bayesian mathematical pattern matching in Autonomy to provide better possible results when searching for similar results across languages.
- We ran some search engines against our content as part of our proof of concept, and none of them performed well out of the box. Autonomy's tools to train results were easy to use and met our specific needs to provide consistent results in training across languages.
- We need the ability to search across many languages at once from a single word. Autonomy gives us the ability to search an English term, and receive results in specific languages, or even all available languages. The ability to train the tool on representative content around a standardized taxonomy, and form mathematical patterns were keys to our selection.
- Additional modules can be purchased to provide access to internal databases, file servers, and applications. The ability to search

PeopleSoft, and other large oracle databases from the Web will provide us long-term benefit.

- ■ A final feature which is very common in enterprise class search engines is the ability to pass along a search request to a proprietary search tool, and then federate or combine the results for a single consolidated user experience. This is critical for us as we begin developing and deploying the new sites, we will still need to access older tools and content.

■ As we got deeper into the analysis of the various tools and technologies we were investigating, we realized that each tool manages content and metadata differently and in most instances proprietarily. We have content that will generally outlive most Web content tools. Some have questioned whether our choice of Vignette was not heavily influenced by our current ownership of V6. From a content perspective the answer is no. We have no means of migrating the content from V6 to V7 that would be any more effective or efficient than moving to Documentum, Stellant, or any other vendor. We realized that we need standards of XML tagging, metadata, categorization, classification, and other types of taxonomies that will outlive the content delivery, portal, or management tool. We need a migration path, even if the tools don't provide one, and I know of very few that do. We stumbled across Schemalogic during this period, and they are now an integral part of our long-term strategy.

- ■ Schemalogic is a standards, list, metadata, and taxonomy storage and management system. It allows lists and structures to understand their relationship to each other.
- ■ We have a topical list of key words in English to help train the search engine. We need a similar list in all other languages. However, there is not a one to one match from English to each language. None of the content management systems allow us to manage the relationships between terms, SchemaLogic does.
- ■ Once the relationships between lists have been identified and reconciled, we can push those lists into Autonomy for search categorization and weighting,
- ■ and into Vignette for classification, categorization, and content type metadata consistency. In a medium to large organization that is attempting to manage very much content on the Web in many languages, a tool to help you set and manage standards for metadata, categorization, and classification is necessary.

■ Collaboration and workflow were not really part of our initial case for change, but they have been and will be a necessary part in managing worldwide input to a multi-lingual Web site. ■ We are using a wiki product called Confluence, and Vignettes Business Collaboration Services with the various teams we have formed to support our current initiatives. The content migration team is very dispersed and without a good collaboration tool we would never be able to convert the 100,000s of pages in multiple languages as quickly as planned. ■ We have 3 different workflow tools for various levels of complexity and process management in the enterprise, we will use Vignette's Workflow engine for Web site and portal development processes and reviews.

■ We have spent the last 6 months focused on getting our teams trained and using the tools I have just described. Much of what we have experienced has been expected, but there have also been some unexpected difficulties or surprises. ■ A year ago, no matter which vendor or salesman we talked to, everything Larry has presented today was "theoretically" possible. As we have begun to build and implement the tools, we have learned that what is theoretically possible is sometimes very hard to do, and requires a great deal of professional service time, extensive customization, and even additional tools from 3rd parties to make it work. ■ We will also openly admit that we are implementing too many things at once. We are constantly scaling back our project scopes, pushing our major deadline, or even creating simpler projects to allow our skilled professionals to learn in an environment of controlled expectation. That is much easier said than done. ■ The tools are beginning to define our processes. Larry and I have talked at great length with consultants and even the vendors about the ideal world of having processes that tools can be applied to. Because we have never done this before, our processes were incomplete and the tools we have selected are creating processes that will make us dependent upon certain tools. That concerns us in the long-term. ■ We have run into some real stumbling blocks around hardware, architecture, installation, testing, and integration. We thought we could do it without professional services help, we were wrong. We lost a great deal of development and building time trying to get the software installed and operating. ■ With these new tools we are no longer simply focused on a single site and single language. Deploying these tools worldwide so that content management can occur where the language skills are most capable is presenting us some challenges we were also not ready

for. ■ I want to clearly admit that we overestimated our internal skill sets, and underestimated the cost and need for professional services. A consultant we brought in very early during our vendor review told Larry and me that based on what we were attempting to accomplish, and how our organization is organized, we should take the cost of the software and hardware and add 200% for professional services. Our engineers and technology architects disagreed. We listened to our staff. Ultimately to accomplish what we envision with multi-lingual dynamic Web sites, our costs will probably be closer to what that wise consultant told us. ■ Another consultant, told us to try and standardize around global standards as much as possible. That has also been wise counsel, but it has still been very difficult and time consuming to identify, adapt, and reconcile standards, authoritative lists, and other taxonomies that we feel will be necessary for storing, retrieving, managing in our organization, and presenting content on our Web sites. ■ The final difficult is one that many of you probably face in your efforts. Time. Time is money, even for a religious organization. We have aggressive timelines, that are constantly being modified to realistic timelines. We hope to release the sites and the language content in a measured and consistent manner. We don't have sales seasons, or market pressure like many of you, but we do have customers and leaders to keep happy.

■ When we accomplish what Larry outlined, we still have further to go. ■ Within the next 5 to 10 years, we want to have our entire site in 40 languages with 100,000s of pages of content, images, and digital media available to millions of users worldwide. ■ We hope at some point in the future to have content flow from various channels back to a single repository of content in a manner that allows each delivery channel to make changes that can be fed back to a single source and pushed out to other delivery channels. A quick example would be content like news that can be entered into the Web Content Management system that can then be placed in a repository were a Magazine publishing process could expand the content and additional editing and translation can occur. Then the Magazine edited material can be placed back in the repository and the Web can pick it up and display the changes and localized content to the user. This is a dream that we are continuing to pursue. Theoretically it is possible. ■ Our last goal is the complete integration of Content Management, Portal, and Identity management to provide a unique and customized Web experience to each of users, based on their needs, locale, and language. ■ A dynamic multi-lingual presence is possible, and we are well on our way. Stay tuned. It is difficult to describe all that we have learned in 45 minutes.

■ We hope that what we have shared with you will help you in your journey to provide a better, more complete Web experience. Larry and I will be available after the presentation to answer any questions you have. Thank you for your time and attention.