

The Redevelopment of Source Articles at Troppus Software:
A Study of Integrating Previously Existing Articles into a New Knowledge Base

Anni Simpson

North Carolina State University

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Dr. Susan Katz

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INTRODUCTION

Who is Troppus?

The purpose of this self-case study is to analyze articles I developed as an SKMS KB/CM Engineer (or technical writer) while I was employed Troppus Software between June 2011 and April 2013. More specifically, I intend to look at articles from other knowledge bases that I was given to recreate for Troppus.

I work with two other writers: Matt McClure, another content engineer, and Joel McQueen, the team leader. We develop our content based on needs identified with our users, projects we were given by management, or content we believe might be relevant to our users (“free writing”). We then publish the articles we’ve written through our back end content management system. The articles we publish are viewable through the premium technical support application, Digital Life | Now.

Troppus Software is a subsidiary of EchoStar Communications, L.L.C. EchoStar also owns Sling Media, the company that produces Slingbox hardware and SlingPlayer software, DISH Network, and HughesNet Satellite Internet. Writers at Troppus are expected to be proficient at any kind of hardware or software problem, but we also regularly integrate previously existing content from other EchoStar companies into our own knowledge base, particularly with Sling Media and HughesNet content. This is done by taking the source article from an online knowledge base, adapting the text to our format, and updating any images (if necessary) to fit the company’s image standards using the image manipulation application Snagit. Once our article is laid out, we publish them using the content management system. Typically, Sling Media and HughesNet project initiatives are handed down by management and designated as “priority.”

Background of Article Development

All of our articles use the following element types:

- a title
- a subtitle
- an introduction (to explain the purpose of the article or the problem the article is trying to fix)
- a solution to the problem
- a conclusion (to wrap up what we just discussed)

Regardless of the type of content we are creating, all articles must include each of the above elements before the content management system will let us publish it. Otherwise, we receive an error that states the article has an invalid structure and limits it to a “Draft” state. Although there is no automated process to moving content from another knowledge base to ours, the rigid format of our articles would prevent any sort of automation anyway.

We also use a standard set of image callouts between the three of us for the sake of consistency between articles. For example, we use a certain shade of green for calling out points of interest, a certain shade of gray for the background of the image and/or table, and an 8-pixel backdrop on two sides. Images from other knowledge bases won't (necessarily) use any of these standards, but for consistency, we have to update the images for our application.

Because images, text, and format are all considered when I redevelop content for Digital Life | Now, my genre analysis will include the choices I made or had to make in during redevelopment.

METHODS

I downloaded four samples of Sling Media articles and four samples of HughesNet articles from their respective knowledge bases that I was assigned to revise for the Troppus knowledge base. I also downloaded the Troppus counterparts from the Digital Life | Now application so that I could compare each example with the version I edited and adapted.

I identified three major areas for potential editing or reconfiguration between the original and the updated version:

- textual content
- image manipulation
- format

After I identified the three major areas for likely changes on my end, I identified the changes I made in those categories, which include:

- updating articles to conform to the required format
- adding images to articles that did not include them
- updating currently existing images to conform to image standards
- changing or adding text

From there, I compared my findings to the literature I reviewed for the self-case study. Although in many ways, Digital Life | Now and the processes that facilitate it are unique, looking at the literature enabled me to compare what I did and how to more generalized studies on content creation in technical communications.

RESULTS

Text

Some of the changes I made between source articles and the articles I published for Digital Life | Now were textual. Some of the text-based changes were made because of grammatical errors (e.g., sentence fragments, Oxford comma). However, others were changed in order to give more context to an article in the hopes the user would have a stronger understanding of what was causing their issue. For example, the original “What’s an Ethernet bridge?” article from Sling media did not contain the following text:

- “Having your Slingbox and television in a different room than your cable modem and router can cause problems for your Slingbox setup.

Fortunately, there are ‘wall-plug bridges’. In this context, a bridge is simply a device that uses your existing in-home electrical outlets to connect the Slingbox to your network.”

Although there was an introduction – which contained text I lifted from the source article – the first step was dedicated to explaining the problem. I have no gauge on what users read or take away from my articles, so part of the reason I explained the problem differently in the first step was to guarantee that users who skip the introduction to go to the solution would still understand the underlying problem. The explanation in the first step also prompted the use of an image which the Sling Media article did not have.

Furthermore, although the introduction did exist, explaining the problem again in a different way could potentially help users who *did* read the introduction but didn’t understand what the issue was

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In another example, I added text to the HughesNet article “Double Entries on Your Account Invoice.” Although part of the textual addition was to conform to the format required by the Digital Life | Now articles, I went beyond the requirements of the format by using two paragraphs in the “Double Entries on Your Account Invoice” Digital Life | Now introduction:

- “For your convenience, Hughes offers a number of ways for you to pay for your account. Hughes' systems are designed for electronic payments and offer the ability to pay charges by credit card (MasterCard, Visa, Discover, and American Express), debit card, or electronic check (e-check) for both recurring and one-time payments. You may also request a manual invoice for an additional \$5 a month.”

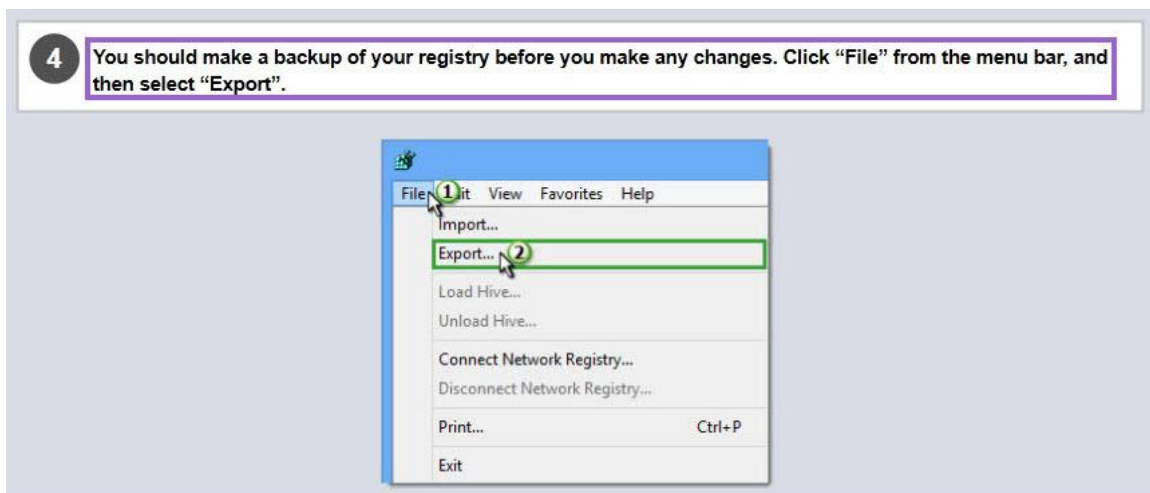
The second paragraph in the introduction was more specific:

- “You may also incur charges on your statement depending on any equipment that has been shipped to you, taxes, termination of your account, or other charges. Sometimes, you can even incur double charges to your account in the same month. Follow the solution below to learn more about the reasons you can have double charges on your HughesNet account invoice.”

As with the previous example, I added two paragraphs of text (as opposed to the one required by Digital Life | Now) with the intention of giving the user a stronger context for a problem they might experience. Again, because I don't have any gauge on what the user knows, what they read, or what they don't read, my hope was that giving the user

context would help abate some fears they might have about something as complex as juggling bills and understanding billing statements.

The biggest textual change I made was in “Fix ActiveX Errors Preventing You from Installing the Watch on Slingbox.com Browser Plug-in by Editing Your Registry in Windows 8.” I later go into detail on how I added previously nonexistent warnings to the article, but the biggest change I made in this article was textual by far. For example, the part of the Sling Media article that covered this did not include information on backing up the registry in the event something goes wrong with the solution, whereas the Digital Life | Now article includes extra steps (see figure 1.1).



1. Make a backup of your system.
2. Save a backup of your Registry.
3. From the Start menu, launch the Run command.
4. Enter "regedit" and click OK.
5. Starting from the beginning of the Registry, search for this string: WebSlingPlayer
6. Delete any key containing this value.
7. Repeat for the entire Registry.
8. When you're done, save the changes to the Registry.
9. Try installing the Watch on Slingbox.com plug-in again.


Figure 1.1

Images

Of the eight sample articles, I updated images four times (50%). Of the eight sample articles, I added images that didn't previously exist two times (25%). The two remaining articles did not contain images of any kind in either the Digital Life | Now or original article. (Both articles were for HughesNet.)

Updates to images include: using green boxes to call out elements, using numbered cursors to highlight actions the user needs to take illustrated in the screenshot, and a changing previously existing table so that it used the colors used by the service (red for Sling Media).

In the case of "Which SlingPlayers Work with My Slingbox?", I used the same information from the source article. However, I removed the images the source article uses at the top (where the image of the Slingbox corresponds with the name below it). I



Watch on Slingbox.com	500 or 350	PRO-HD	SOLO	120	PRO	Legacy Slingboxes
Windows 7 or 8 (Desktop Mode)	✓	✓	✓	✓	✓	✓
Mac OS 10.6.x or higher	✓	✓	✓	✓	✓	N/A

SlingPlayer	500 or 350	PRO-HD	SOLO	120	PRO	Legacy Slingboxes
Connected Devices	✓	✓	✓	N/A	N/A	N/A
Facebook	✓	✓	✓	N/A	N/A	N/A
Embedded	✓	✓	✓	N/A	N/A	N/A
iPad*	✓	✓	✓	✓	N/A	N/A
iPhone and iPod touch	✓	✓	✓	✓	N/S	N/S
Kindle Fire	✓	✓	✓	✓	N/S	N/S
Android Phones	✓	✓	✓	✓	N/S	N/S
Android Tablets	✓	✓	✓	✓	N/A	N/A
Windows Phone	✓	✓	✓	✓	N/A	N/A
Older SlingPlayer Software	N/S	✓	✓	✓	✓	✓

SlingPlayer System Recommendations	500 or 350	PRO-HD	SOLO	120	PRO	Legacy Slingboxes
HD Streaming ±	2 Mbps±	1.5 Mbps (or higher)	N/S ±	N/S	N/S ±	N/S
SD Streaming	600 Kbps±	384 Kbps (or higher)	384 Kbps (or higher)	384 Kbps (or higher)	384 Kbps (or higher)	384 Kbps (or higher)
Mobile Streaming	250 Kbps±	150 Kbps (or higher)	150 Kbps (or higher)	150 Kbps (or higher)	150 Kbps (or higher)	150 Kbps (or higher)

Watch on Slingbox.com	500	350	PRO-HD	SOLO	120	PRO	LEGACY
Windows Vista, 7, or 8 (Desktop)	✓	✓	✓	✓	✓	✓	✓
Mac OS 10.6.x or higher	✓	✓	✓	✓	✓	✓	N/A

SlingPlayer	500	350	PRO-HD	SOLO	120	PRO	LEGACY
Connected Devices	✓	✓	✓	✓	N/A	N/A	N/A
Facebook	✓	✓	✓	✓	N/A	N/A	N/A
Embedded	✓	✓	✓	✓	N/A	N/A	N/A
iPad*	✓	✓	✓	✓	✓	N/S	N/S
iPhone and iPod Touch	✓	✓	✓	✓	✓	N/S	N/S
Kindle Fire	✓	✓	✓	✓	✓	N/S	N/S
Android Phones	✓	✓	✓	✓	✓	N/S	N/S
Android Tablets	✓	✓	✓	✓	✓	N/A	N/A
Windows Phone	✓	✓	✓	✓	✓	N/A	N/A
Older SlingPlayer Software	N/S	N/S	✓	✓	✓	✓	✓

SlingPlayer System Recommendations	500 or 350	PRO-HD	SOLO	120	PRO	LEGACY
HD Streaming ±	2 Mbps±	1.5 Mbps±	N/S ±	N/S	N/S ±	N/S
SD Streaming	600 Kbps±	384 Kbps±	384 Kbps±	384 Kbps±	384 Kbps±	384 Kbps±
Mobile Streaming	250 Kbps±	150 Kbps±	150 Kbps±	150 Kbps±	150 Kbps±	150 Kbps±

Figure 2.1

also changed the colors of the table to reflect the same shade of gray used in the background of the Digital Life | Now application, as well as the shade of red from the Slingbox logo (see figure 2.1) (Troppus Software Corporation, 2013).

It is relevant to note that the text was reduced in the image in order to conform to size requirements inside Digital Life Now, a maximum width of 540 pixels.

The article I added images for (“Restore the Slingbox 500 to Factory Default Settings”) was given images for the sake of clarity (see figure 2.2). The article refers to specific lights and a specific button on the Slingbox 500 device that aren’t illustrated in the original article. The original article also encompasses all nine Slingbox devices, so it may have been impractical instead of splitting them up by model number (Sling Media, Inc., 2013).



Figure 2.2

Format

All articles were adapted to fit a pre-defined format that included a title, subtitle, introduction, solution, and completion. The solutions were required to either use steps, warnings, or images to get information across. Even in cases where a step-based solution was not the best way to convey the text from the source article, they were still sometimes used for the lack of any other alternatives (e.g., “Double Entries on Your HughesNet Account”).

In many cases, elements that didn't previously exist in the source articles:

- Subtitles were added in all eight examples.
- Steps were added in one case. (It is worth noting that it appears the source article appears to be text-free on accident; there are images that illustrate the process but no text whatsoever, and the link to the article is broken.)
- Seven warnings were added to four articles. In all but one case (“Which SlingPlayers Work with My Slingbox?”), the text existed within the source article but were not separated in a way that in any way “warned” the user; the text was instead a part of the normal text.
- Completions were added in all eight examples.

Although in many instances elements were added so that the article structure was valid for publication that was not always the case. Warnings, for example, were added for the benefit of the user who may not have known to be wary of certain consequences or

repercussions. In the case of “Restore the Slingbox 500 to Factory Default Settings”, two warnings were added:

- “If you have made firmware upgrades, be aware that SlingPlayer may ask you to make those upgrades again” (Troppus Software Corporation, 2013).
- “Before continuing, it is important to note that the steps below will completely erase any settings that you may have configured on your device. Once completed, your device will return to its factory default (out-of-box) state and will need to be

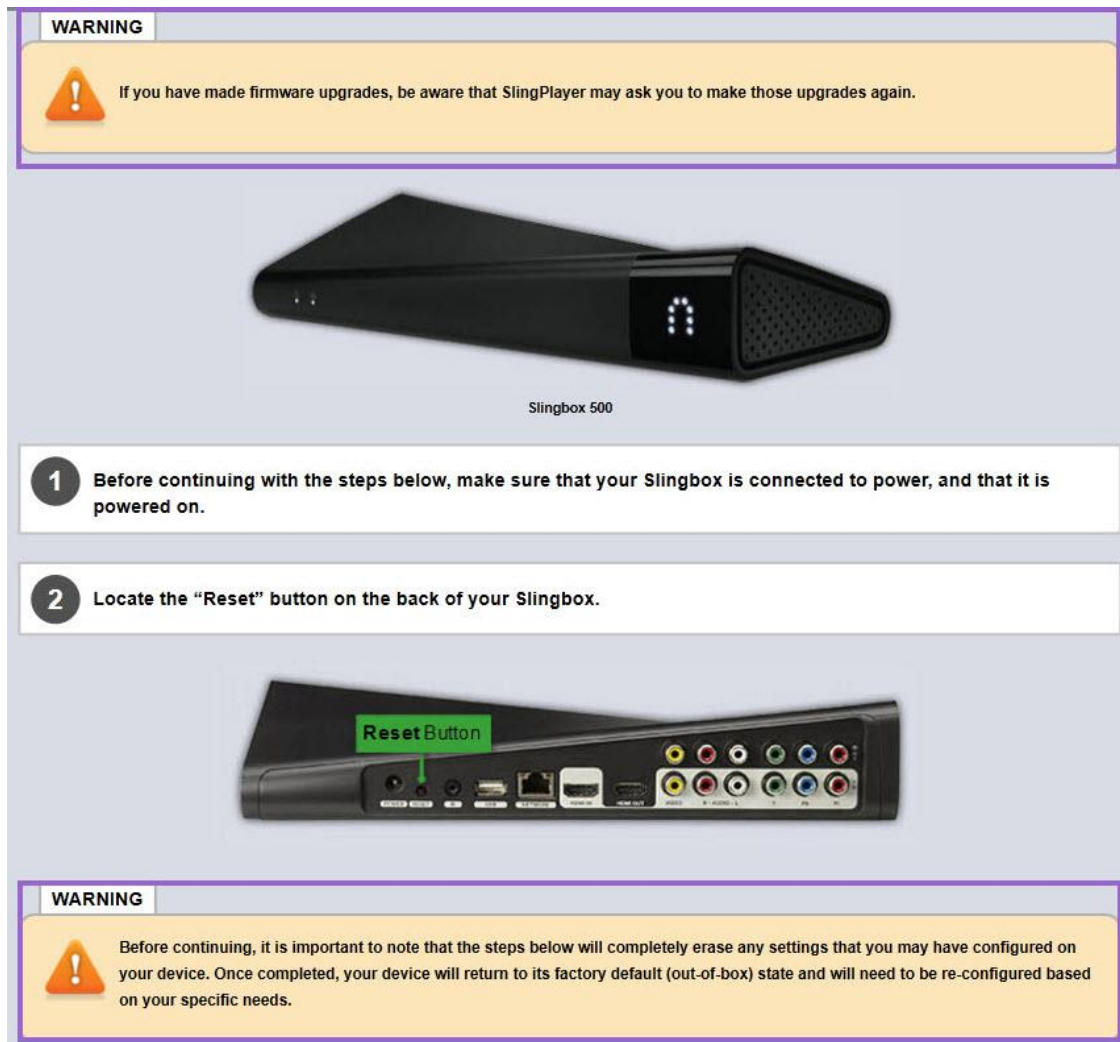


Figure 3.1

reconfigured based on your specific needs” (Troppus Software Corporation, 2013).

Only one of the warnings contained text in the source article; the latter of the two warnings contained new text (see figure 3.1). I added the second warning, because although it may be obvious to some users that a factory reset’s purpose is to wipe out their device’s settings, not all users would. It was also added to clear up any ambiguity of what a “wipe” meant. That is, *all* settings such as username/password combinations, firmware installed on the device, and configuration with SlingPlayer and Slingbox.com would have to be reconfigured.

In the case of “Fix ActiveX Errors Preventing You from Installing the Watch on Slingbox.com Browser Plug-In by Editing Your Registry in Windows 8”, there are also two warnings, one of which exists in text without a sense of urgency:

- “Caution: If you don’t understand the sentence above, don’t proceed any further! Please visit the Slingbox Answers Forum for additional assistance. There’s a link below for your convenience.”

versus the updated text:

- “The following solution is for advanced users only. Manually editing your registry can cause problems for your entire system if you make a mistake. If you are not comfortable or familiar with your registry, it is not recommended you use this solution. Follow the link below to contact Sling Media Customer Support:”

In the first case, Sling Media recommends novice users from proceeding with the solution below, but it lacks three major characteristics:

- Warnings in Digital Life | Now solutions pull text apart so that it is an easily distinguishable element apart from the rest of the text.
- Warnings in Digital Life | Now are orange with a larger, bold “!” at the beginning. Although Sling Media uses the “Caution” text before their warning and bolds it (see figure 3.2), orange and “!” are both regularly used to grab a reader’s attention to caution in other areas of life.
- The particular warning in the updated article not only tells novice users not to proceed, it tells them why.

Because the Digital Life | Now articles contain changes in iconography, color, and spacing (removing the text and placing it in its own box), the primary change in these examples is that of format.

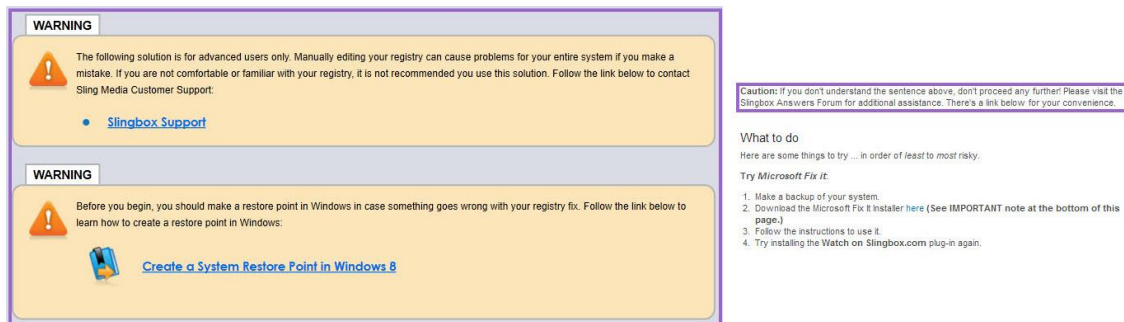


Figure 3.2

However, warnings are unique against other changes in format like subtitle or completions in that they’re not required to publish. They represent conscious changes on my part to grab the reader’s attention or make important information more visible.

Introductions can work similarly. Although introductions *are* required to make an article publishable, the only requirement is that an introduction contain one paragraph. Five of the eight example articles contain either more than one paragraph or a combination of paragraphs and bullet points.

For example, in “View or Print Your HughesNet Invoice without Logging into Your Account”, the introduction contains three paragraphs and three bullet points. The purpose in this example was to split up what would have been an otherwise long introduction into smaller parts, giving the reader a break from text using white space, as well as pull out information (i.e., the specific data they need to view or print their HughesNet invoice) so that the user may quickly reference back to it if need be. In this case, although there weren’t any textual changes, format was still used to break up the article in a way intended to create a better user experience.

In this case, there does not seem to be any text in the HughesNet version of the article at all, just images. However, as previously stated, that seems to be an error in their knowledge base rather than a conscious decision by their writer to contain no text (as evidenced by the link to the article working incorrectly); at the time the Digital Life | Now version was written, the link was working, and there was text on their knowledge base website. Because of that error, it is impossible to tell whether how I edited the article to include and/or update an introduction.

However, based on my knowledge of the construction of the Digital Life | Now version, I know that the first paragraph was not included in the original. The first paragraph was used on many of the HughesNet articles I recreated to give the user a background on the options available their customers with regards to billing; it is present in three of the four examples (see figure 3.3).

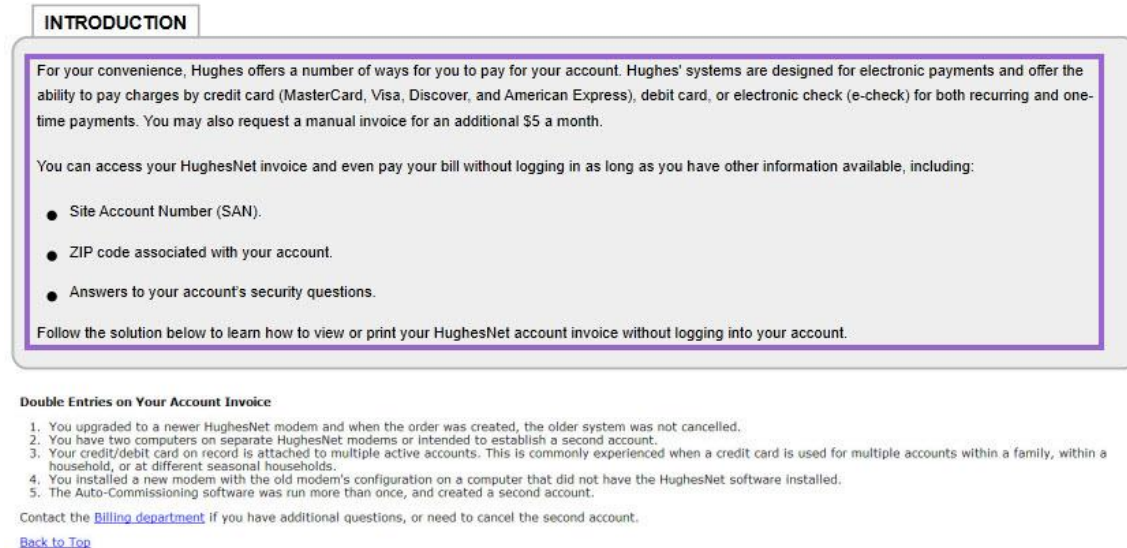


Figure 3.3

The paragraph I reused was also developed to assist in search functionality by consciously including billing-related and alternative keywords, such as “Hughes” (as opposed to “HughesNet”), “invoice,” “electronic payments,” and “credit card.” Because the paragraph was one that was designed to be reused across multiple articles on the same topic, the difference between the original HughesNet and updated Digital Life | Now articles was one of format, not text.

LITERATURE REVIEW

Because Troppus uses a web-based content management system to develop articles, looking at content management systems may offer a stronger understanding of some of the content choices I had to make.

Lori Pennington’s study on content management systems finds that “sharing content ensures consistency in documents throughout the company”, as well as “unifying content development in turn unifies the company and increases its productivity and potential” (Pennington 2007). Her findings are completely in line with the choices I chose to make, including:

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- Being required to conform to a pre-determined format did make the article structure consistent no matter what the article was about.
- Being required to update images based on the color used when identifying parts of an image or the background of a table made the articles consistent.

Although Pennington describes some of the possible downfalls of using a content management system including cost and training (Pennington 2007), the content management system has been in place as long as I've worked for Troppus. To my knowledge, the same system has been used during all of Matt and Joel's employments, as well. My training with the content management system took approximately one day in June 2011, and I have used it nearly every day since then. If those pitfalls were there at the beginning, they aren't there anymore to my knowledge.

And because the projects I am focusing on in this study are the recreation of articles from other knowledge bases, it is worth looking at sourcing. According to Hayhoe (2007), “[w]hen the same text is used multiple times—as part of a printed manual, in online help, in an advertisement, and on the product packaging, for example—the company can leverage significant savings by having to create the text only once.”

Although I make a significant number of changes to the texts I use from Sling Media and HughesNet, the principle is similar; I still start from a basic article. As I demonstrate above, I *do* make text-based changes, but the vast majority of changes made are with regards to format and image standards.

However, efficiency and cost-effectiveness are not the reason I don't focus on text-based changes. The need to fit a pre-defined format, consistency in images, and a desire for increased user experience are what drive the format and image changes.

Although text-based changes exist, it's important to remember that the format likely limits the text. The structure in most articles revolves around a problem the end user needs to solve, so in both the source articles and the Digital Life | Now articles, the steps will be similar. That's not to say that using the same text for the "Solution" element in the Digital Life | Now articles doesn't promote efficiency or cost-effectiveness, but it's not the primary motive.

DISCUSSION

To reiterate, the purpose of this (informal) case study was to look at how I chose to implement source articles from other companies into the Troppus database. Implementation required several changes to the source articles including format, textual, and image-based changes. Many of these changes were based on pre-existing requirements set by Troppus including image callout standards and conforming to the article format.

Although the literature looked at in this paper points to the use of both content management systems and sourcing as methods of improving efficiency, neither were my primary objective in recreating the articles the way I did. I was much more concerned with conforming to image standards – which functioned as a style guide, although I had no image style guide provided to me – and the article format forced on Troppus articles by the content management system itself. The end result was that there was more consistency between articles. I did not even have a metric of efficiency available to me.

The benefit of using source articles was that the bulk of the information – if not all – needed in the article was immediately available. Although I did make textual changes, none of the changes were related to *what* kind of information was being

presented or *how*. Even in the case of “ActiveX Errors” from Sling Media, the bulk of the information was already there. The changes to the text were simply an expansion of the existing solution.

In potential future case studies, it might be relevant to study how sourcing between knowledge bases works across multiple companies – if at all – and how existing knowledge bases choose to integrate new content. One of the challenges of looking at my own content development was the seeming lack of existing research on how knowledge bases and content management systems function from the back end – not just the potential benefits.

Works Cited

Hughes Network Systems, LLC. HughesNet KB 1197. (2013). Your HughesNet Account

Invoice. Retrieved from <http://customer.kb.hughesnet.com/Pages/1197.aspx>.

Pennington, Lori H. (2007). Surviving the Design and Implementation of a Content

Management System: Do the Benefits Offset the Challenges?

Sling Media, Inc. (2013). How to reset your Slingbox to factory settings. Retrieved from

<http://support.slingbox.com/get/KB-1000038.html>.

Sling Media, Inc. (2013). What's an ethernet bridge? Retrieved from

<http://support.slingbox.com/get/KB-2000052.html>.

Sling Media, Inc. (2013). Windows ActiveX errors when installing the Watch on

Slingbox.com plug-in. Retrieved from <http://support.slingbox.com/get/KB->

[5000315.html](http://support.slingbox.com/get/KB-5000315.html).

Sling Media, Inc. (2013). Which SlingPlayer software works with my Slingbox?

Retrieved from <http://support.slingbox.com/get/KB-2000121.html>.

Troppus Software Corporation. (2013). Troppus Software: Digital Life | Now (Version

3.6) [Software]. Available from <http://support.slingbox.com/get/KB-2000509>.