

About the Center

Rochester Institute of Technology (RIT) was selected by the Alfred P. Sloan Foundation in 2001 to join the family of Sloan Industry Centers located at prestigious universities across the U.S. The Printing Industry Center at RIT is a joint program of the School of Print Media and RIT's College of Business, emphasizing Sloan's long-standing tradition of applying a broad multidisciplinary approach to industry investigations and findings.

Dedicated to the study of major business environment influences in the printing industry brought on by new technologies and societal changes, the Printing Industry Center at RIT addresses the concerns of the printing industry through educational outreach, research initiatives, and print evaluation services. The Center creates a forum for printing companies and associations worldwide to access a neutral platform for the dissemination of knowledge that can be trusted by the industry, to share ideas, and to build the partnerships needed to sustain growth and profitability in a rapidly changing market.

With the support of RIT, the Alfred P. Sloan Foundation, and our Industry Partners, it is our mission to continue to develop and articulate the knowledge necessary for the long-term economic health of the printing industry.

More information on the Printing Industry Center at RIT and its research activities can be found online at <http://print.rit.edu>.

Industry Partners

Support for the Printing Industry Center at RIT comes from:



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An Examination of Business and Workflow Models for U.S. Newspapers

The newspaper industry is being redefined by changes of historic proportions. This redefinition has resulted in a disruptive shift within the core audience of newspapers. Thus, many pundits of the industry have commented that the traditional business model is "broken." The reason for this declarative is primarily due to the reduction in circulation and the transference of audience attention to non-print media. Subsequently, the printed newspaper is no longer the primary "news" information source for most people.

The primary goal of the research study, *An Examination of Business and Workflow Models for U.S. Newspapers* (PICRM-2009-02), by Twyla J. Cummings, Ph.D., Howard Vogl, M.S., Claudia Cristina Alvarez Casanova, and Javier Rodriguez Borlado, was to answer the following research questions in response to the situations described above:

1. To acquire a unified understanding of the traditional and emerging newspaper publishing business models for large, medium, and small newspapers, and to assess what newspapers are doing to change their business strategies.
2. To understand the prepress and production workflows for newspapers, to evaluate how they compliment and interfere with each other, and to determine if there are differences based on size of the newspaper.

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The Creation of the Open Publishing Guide

The primary goal of the research report, *The Open Publishing Guide: Creating a Self-Publishing Website Using Open Source Content Management Tools* (PICRM-2009-03), by Patricia Albanese, Matthew H. Bernius, Sean Conklin, Alvin Crespo, and Rachael Gootnick, was to report on the creation of the Open Publishing Guide (OPG - <http://opg.cias.rit.edu>), and the process taken to develop the final website. The report also discusses the steps necessary to produce a website of the scope and scale of the OPG, provides an overview of the production methodology, discusses the process by which content was acquired for the site, and explores the web platform used to deliver the content.

Project Methodology

At its core, any web development project is about balancing (1) the delivery of the best possible experience for the user with (2) the needs of the organization delivering the website and (3) the technological features and limitations of the software platform that the website will run on. The success of a project is therefore dependant on choosing a workflow that, from the start, will establish and maintain the necessary equilibrium.

The workflow used to deliver the OPG was modeled off of the one laid out in Goto and Cotler's (2004) *Web ReDesign 2.0 : Workflow that Works*. Using their model, the production of the site went through five major stages:

1. Defining the Project
2. Developing the Site Structure
3. Designing the Visual Interface

4. Building & Integrating

5. Launching, Tracking, and Maintenance

Defining the Project

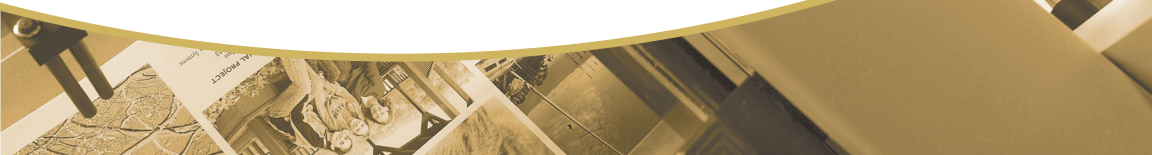
The goal of the first stage is to begin to understand both the needs of the users of the site and the needs of the organization. It is important to establish these first two areas before considering the technology that will be used to implement the site. This "needs based" focus, often referred to as *User Centered Design*, helps avoid the temptation to design a solution around what technology is available or what "looks good" to a graphic designer.

The proposal for the OPG included the following specific organization goals:

- Defining the scope of the existing barriers for non-technical users to self-publish.
- Documenting current standards and trends in self-publishing and on-demand publishing.
- Developing a set of processes and options that provide solutions for the non-technical user to self-publish.
- Developing a common resource for public domain and freely available content to use in the self-publishing process.

In addition to those goals, the team also identified a number of other important requirements. The most significant

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of these was the goal to ensure that the OPG would be updated on a regular basis. Achieving this meant the website would need to be editable by anyone with the correct level of access, including individuals with limited technical skills. The OPG project manager captured these and all other requirements (branding, budget, etc.) in a requirements document.

The next step was to define the user requirements. In order to accomplish this, the team recruited a number of *Subject Matter Experts* (SMEs). These individuals were familiar with the publishing process and regularly provided assistance to people seeking to self-publish. The OPG team began to meet regularly with the SMEs to identify the wide range of content, assets, and information that was available across the web. This led the team to an important decision: rather than attempting to replicate what was already available, the OPG would serve as a “golden thread”—a hub linking all of these resources together, and providing the content necessary to fill in the gaps.

Developing the Site Structure

As content was beginning to be identified, work began on establishing the overall structure of the site. The first step in this process is known as “bucketing” – taking each proposed piece of content and placing them with similar content (putting each group into a category “bucket”). This process allowed the team to see the different ways that the content could be grouped.

Once general categories were agreed upon, the next step was to consider

how each category would fit into the overall site structure. In order to test the different content arrangements, the team came up with a variety of tasks that users might try to complete. The team put themselves in “the shoes” of these users and imagined how they might go about looking for answers. This process was used to identify various site navigation paths, and also to think about how different sections might be named. During this iterative process, various gaps in content were identified and then filled.

In the end, it was decided that the site would be divided into five sections:

1. **About:** Information about the guide and how to use it.
2. **Resources:** Links to content and assets across the web and a glossary of publishing terms.
3. **Community:** A section of the site that would encourage interaction between users, and also aggregate up-to-the-minute information about news developments within the world of self-publishing.
4. **Self-Publishing Advisor:** An interactive directory of online print-on-demand services.
5. **Publishing Step-By-Step:** A series of articles that would sequentially cover each stage of the publishing process.

Working with this process, the team not only established the overall navigation and linking structure, but also developed the content framework for each section of the site. At the end of this process, the project manager was able to deliver a list, or content map, of every piece of information that needed to be gathered or written for

the website. The content map, in turn, is used to understand how “big” the website will be and what resources (time and personnel) will be needed to deliver the content.

Choosing a Technical Platform

Now that the User and Organization requirements were documented, the team was finally in a position to make well-grounded decisions about which web technologies to use. As documented earlier, the site requirements meant that the OPG needed to employ a *content management system* (CMS). The decision to use a CMS generated additional organization and content gathering requirements. In particular, the CMS that was chosen needed to be one that was well supported and could be learned in a short time.

After evaluating a number of software packages, the OPG technical lead proposed that the project use Drupal, a popular open source content management platform (<http://drupal.org>). While Drupal has a steep initial learning curve for individuals who will be implementing its technical features, it is an extremely flexible and powerful program that allows for a significant amount of customization.

Furthermore, the Drupal platform is supported by an active worldwide community of developers and users, who constantly release new open source plug-ins and extensions to extend Drupal’s functionality. Finally, while the learning curve might be steep on the technical side, the content authoring interface resembles a word processor, making it easy to add, remove, and edit content.

Once these decisions were made, the project moved into its production phase. Content gathering and authoring, visual design, and technical

implementation began to happen in parallel.

Gathering and Authoring Content

Just as the user and organization requirements shaped the OPG’s technology path, the technology path shaped how the content was collected. At the end of the Site Structure phase, the team had a content map that outlined every piece of content on the site. Each site section contained specific categories of content (definitions, articles, project templates, etc). The next step was to establish what made up each of those categories. Once those elements were established, the project manager, working with the site designer, created online input templates for each type of content and provided them to the SMEs who then began the process of identifying and collecting content.

In addition to formatting the structure of the content, care was also taken to format its style. The intention was that the site should function as an advisor or guide rather than as a teacher. Therefore, the OPG’s text would be written in an open and friendly style. Jargon was to be avoided if at all possible, and, where it could not be, it was to be accompanied by a definition or a link to the site glossary. All of these decisions were captured into a style guide to assist current and future SMEs in writing for the site.

Visual Design and Building

One of the great advantages to working with a CMS is that it enables parallel workflows. Once the technical lead implemented the content entry forms for the SMEs, they could begin to load text into the site even though the “display” aspect of the site did not yet exist. This style of workflow

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Business and Workflow Models for U.S. Newspapers *continued*

3. To review audience analysis for the various print and on-line newspaper products.

To achieve these objectives, an extensive survey of five different newspaper organizations was conducted. In addition, the survey was supported by in-depth secondary research.

Literature Review

Traditional Newspaper Model

The traditional newspaper business model has enjoyed extraordinary success over the last century. This business model sold space to advertisers who were willing to pay for access to readers, and newspapers to readers who were willing to subscribe to the printed newspaper. This represented the perfect symbiotic relationship between advertiser and reader. Advertisers had access to a known, stable audience, readers had access to inexpensive editorial content, and newspapers were the gatekeepers.

However, decreases in newspaper circulation have resulted in a sharp drop in advertising and circulation revenue. Consequently, the traditional business model is no longer viable. Evidence of this downward trend can be seen by reviewing the drop in circulation figures of the printed newspaper over a 60+ year span as shown in Figure 1. Additionally, when circulation is expressed as a percentage of the U.S. population, the decline is even more precipitous (see Figure 2). From the early 1990s to 2006, the percentage of newspapers purchased in relation to the U.S. population decreased from twenty-five to eighteen percent. The years 2005

and 2006 show an even steeper rate of decline.

Challenges to the Printed Newspaper

As the new model for newspaper publishing emerges, the printed newspaper remains an integral part of the product offerings of most large and medium size papers. It also remains the core product for smaller local markets. Key challenges to keeping the printed newspaper a viable product are electronic media, declining readership, and technology.

Electronic Media

The steep decline in newspaper circulation coincides with the ascent of the Internet. Newspapers have fought back by establishing their own websites, which have gained audiences. However, it is becoming increasingly apparent that the online revenue gained will not make up for the losses in print revenue.

In addition to the loss of revenue, electronic media has lowered the entry barrier for creating publications. It is no longer necessary to have a multimillion-dollar printing press to publish news content. All one needs is a computer and an Internet connection. This has diminished editorial exclusivity for newspapers, and has challenged their influence in the community.

Declining Readership

Another challenge is the declining readership of newspapers by younger readers. The decline of younger readers has not gone unnoticed by newspaper organizations. For years, newspapers have attempted increase the readership levels of younger readers by promotions, changing content, and redesigning pages. All of these efforts have not been effective in stopping the steep decline in total circulation. Thus, newspapers have been forced to make a choice as to whether to continue to try to attract younger readers,

or to preserve their older, revenue-generating, core audience.

Technology

Technology challenges are generally directly related to business challenges because the business model defines the strategy that the company will follow. Once one path has been chosen, different technical problems will appear. On the one hand, the newspaper company has to offer more products—not only the print edition, but also a web edition that provides additional material such as podcasts or videos. The local editions also require more news content. Due to current users' expectations, advertising companies are demanding

more quality and more color in the print edition. Often, this extra work is done by existing staff, which leads to the need for automation, new technology, and the incorporation of workflow standards.

Future Outlook and Directions

Most industry reports suggest that the future outlook for the printed newspaper is bleak. This is largely due to the impact of the Internet and other electronic media. Additionally, as the age demographic changes and core readership declines, there are a growing number of young people who are not

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Figure 1. Total newspaper circulation, 1940 to 2006 (Newspaper Association of America, 2008)

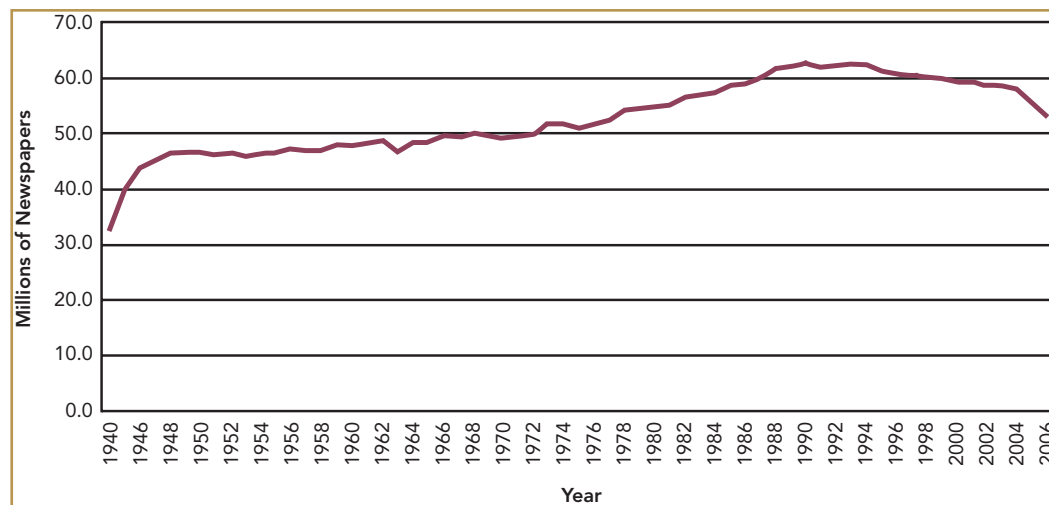
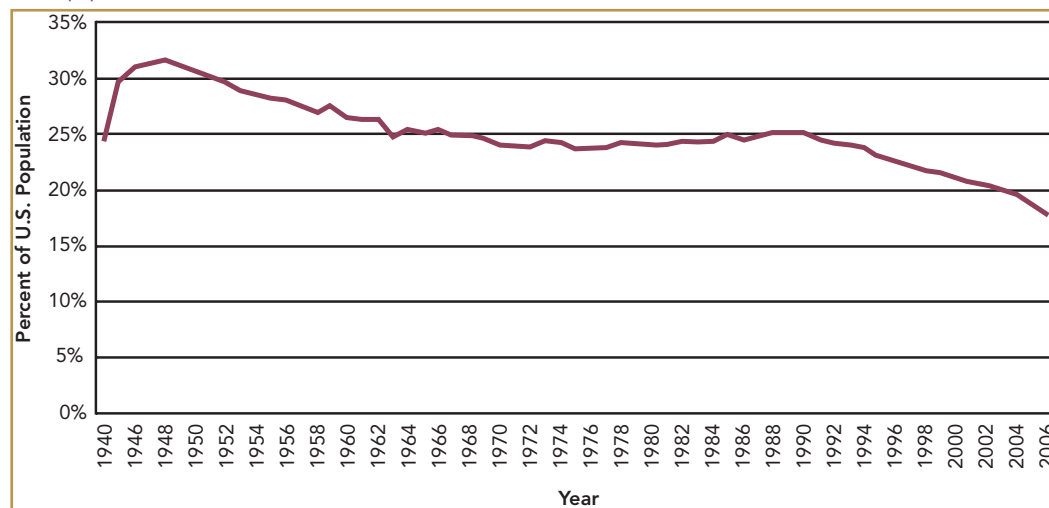


Figure 2. Total newspaper circulation as a percentage of the U.S. population, 1940 to 2006 (Newspaper Association of America, 2008)



Business and Workflow Models for U.S. Newspapers *continued*

interested in news from newspapers, or who prefer to get their news elsewhere. Given this outlook, it is imperative for newspaper publishers to diversify their business model and incorporate a strategy that is consistent with the way people live and how technology works today.

Study Limitations

No research study is without limitations. Some limitations were identified prior to the start of research, while others were encountered during the data collection phase. The major limitations cited were:

1. **Limited number of research participants.** The original goal was to collect data from nine newspapers (3 large, 3 medium, 3 small). Data could only be retrieved from five newspapers (1 large, 2 medium and 2 small). The length of the questionnaire may have been a factor.

2. **Data gaps.** Some participants chose not to respond to or were unable to respond to all of the questions.

3. **Inconsistency in data collection methods.** Some questionnaires were administered in person, while others were administered via e-mail.

4. **Limited access to large newspapers.** Access to large newspapers proved to be difficult due to the complex, fragmented infrastructure and layers of management.

Discussion of Research Findings New and Emerging Models

Today, newspaper companies are viewed as news media companies. This is indicative of the fact that they no longer focus exclusively on the printed newspaper. The current business model is diverse in nature. The purpose is to reach the widest audience. Newspapers no longer think only of subscribers, but of audiences. They are working to produce products for a cross-section or wide variety of audiences in order to interest potential subscribers in what they have to offer.

The revenue streams from this business model are circulation, advertising, inserting, and providing other products and services as follows:

- Circulation of printed and on-line news content,
- Print and on-line advertising,
- Inserts printed by other printers and inserted into the newspaper,
- Other products include magazines, other newspapers, inserts, flyers, and
- Other services such as mailing and the distribution of other newspapers.

The traditional business model revolved around the printed newspaper. In the emerging model the focus has shifted from the print product to serving the audience by any available means. Figure 3 shows a much different structure for the Rochester, NY Democrat and Chronicle (D&C), where the focus has shifted from product to audience.

New/Future Business Strategies

The participants in this research seem to support a diversification strategy to maximize profitability from print and on-line products. This response was consistent across every paper size.

From the interviews with these companies, it appears that the following changes to the physical paper are most common for the medium and small newspapers:

- Reduced web width,
- Reduced page count,
- Increased use of color, and
- Elimination and addition of sections

Core Audience

Primary research indicated that the core audience of most newspapers ranged between 30-49 years old. An examination of the average reader age based on an analysis of 131 newspapers in the Audience-Fax database provides a different picture. Based on this data, the majority of readers are in the 50-64 age group. Table 1 shows the average age of readers for publications in the Audience-Fax database (2008).

However, an examination of individual publications in the database indicates a wide range in readership age based on publication. For example, the Sun-Sentinel in West Palm Beach has the highest 55+ readership (68.6%), while the Philadelphia Daily News has the lowest 55+ readership at 27.4% (Audience-Fax database, 2008). Therefore, it is possible that the newspapers surveyed do have core audiences in the 30-49 age group.

All organizations (with the exception of the large newspaper) indicated that their core audience was diminishing. In some organizations, decreases in core audience population, or population in general, were blamed for the reduction in audience. While regional differences for the reduction in core audience may hold true in specific markets, the long-term overall decline in newspaper circulation indicated that this was the exception rather than the rule.

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Figure 3. The traditional news model in transition (Kane, 2008)

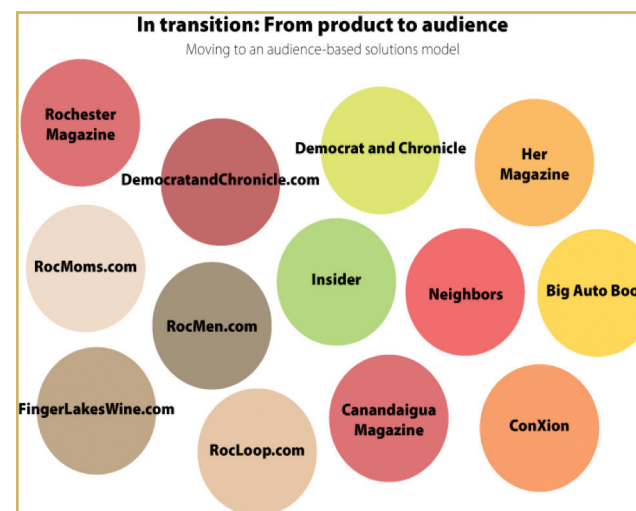


Table 1. Average Reader Age of Newspaper Readers within Audience-Fax Database

Age Group	18-24	25-34	35-44	45-54	55+
Percent	8.07%	10.98%	16.05%	21.01%	43.89%

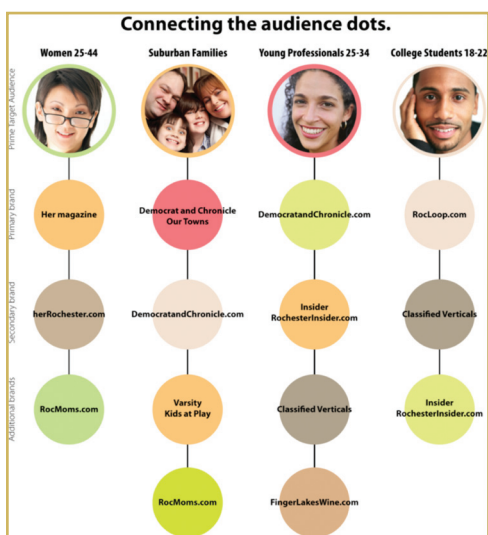
Business and Workflow Models for U.S. Newspapers *continued*

Conclusions and Implications

Business Strategy

Newspaper publishers realize that they can't be 'married to the newspaper' if they are going to remain viable businesses. Successful companies are beginning to look very different from the traditional model discussed earlier. An appropriate and successful model for newspapers involves a diverse mix of product offerings. The Democrat and Chronicle has taken this approach, which is illustrated in Figure 4.

Figure 4. Diversified newspaper product offerings (Kane, 2008)



Audience

Newspapers have accepted that their core audiences are composed of middle-aged and older readers. They have also accepted that younger readers will read the printed newspaper far less. To deal with diminishing readership, newspapers have developed several approaches. These approaches fall into one or more of three broad categories. The first approach is to increase online readership to compensate for the loss of print readership. The second is to increase relevance in the local media

market, and the third is to maximize the present value of the core audience. Typically, these broad approaches are combined into a total strategy for the marketplace.

Workflow Trends

Newspapers are doing more types of commercial jobs in the prepress department, using the same people and workflow through automation in the process without the use of standards. Most of the images used come from in-house photographers, while very few come from archives. The medium size newspapers produce a wider variety of jobs and are using more automation. Additionally, PDF is gaining acceptance as a format for interchange files. Another trend that was observed among the research respondents was the relationship of newspaper size and automation; the larger the newspaper, the greater the level of automation in the production process. 📄

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Kane, M. (2008, April 30). *Sprinting a marathon: The newspaper transformation today* [Powerpoint]. Rochester, New York: Rochester Institute of Technology: Paul & Louise Miller Lecture Series.

Newspaper Association of America. (2008). *Newspaper circulation, 1940 to 2006*. Retrieved February 6, 2008 from: <http://www.naa.org/TrendsandNumbers/Total-Paid-Circulation.aspx>

To read about this research in detail, download the monograph from: print.rit.edu/pubs/picrm200902.pdf

Frank Cost to Step Down as Co-Director of the Printing Industry Center

Changes in leadership of RIT College of Imaging Arts and Sciences and Printing Industry Center announced

On July 1, Joan Stone stepped down as Dean of the College of Imaging Arts and Sciences to take on the role of Director of Development for the RIT Vignelli Center for Design Studies. A search for the new dean will begin immediately, with the expectation that he or she will start in the summer of 2010.

For the rest of the academic year, Frank Cost will take on the role of Interim Dean of the College. Due to the workload associated with this important position, Frank will step down as Co-Director of the Printing Industry Center. Therefore, Dr. Patricia Sorce will now serve as the Director of the Printing Industry Center; no other co-director will be sought.

Frank will be present at the annual Symposium on November 19-20, where he will be presenting the research he conducted this year. The Center will also be honoring him at a testimonial dinner on Thursday night during the Symposium.

If you are interested in sharing any memories, pictures, or thoughts about Frank and your work with him over the years, please contact Ashley Walker at aswppr@rit.edu for inclusion of these items in a slide show to be displayed during the dinner at the Symposium.

Attendance at the dinner is restricted to current employees of Industry Partner companies who are registered for the event. However, the event will be videotaped and available for viewing on the Printing Industry Center website in December of 2009. 📺

Printing Industry Center Launches New Website

Key features of the new website include:

- **RSS Feed for News Items:** RSS is an easy way to keep updated on the news that's of interest to you. If you are interested in receiving RSS updates from the Printing Industry Center, click on the icon in the side menu of the Center's website, and you will then be able to set up our RSS feed in your news reader of choice.
- **Manage Your Account Online:** You can now manage your account

(subscriptions, contact information, etc.) from our website. Please make sure to login whenever you need to change your contact information!

- **Search With Page Tags:** Page tags are words or phrases that describe the content on a specific page, news item, or research item on the website. In order to search for other content with the same page tag as the page or item you are viewing, click the tag of interest and the site will show a search result for that tag. 📺

Open Publishing Guide *continued*

demonstrates the overall power in separating content (raw assets) from visual design. It provided the technical and design leads with a flexible environment to experiment with different designs. The following steps were taken to build the site:

- Using the content map to establish different page templates.
- Creating individual wireframes for each template.
- Creating visually designed mockups of each template.
- Creating the actual web page templates in Drupal using the wireframes.

Beyond the writing, wireframing, and implementation of the visual design, there was one other important creation effort underway. In order to maximize site searchability, and, in particular, Google ranking, appropriate metadata was added to each page of the site.

Launching, Tracking, and Maintenance

Google Analytics is being used to provide quantitative data about traffic patterns to and within the site. This data will be supplemented with other quantitative and qualitative data gathered through online user surveys and offline user testing. The goal of all of this will be to iron out the proverbial "kinks" in the system, and to test the content to ensure that visitors find it useful. As data comes in, the design, navigation, and site metadata will be altered appropriately.

Findings

In addition to the experience gained from implementing the site, this project yielded a number of valuable findings

about the state of online publishing. The first was the wide and diverse range of open source publishing tools available online. Open source software is available for every single step of the publishing process. Additionally, there is a huge selection of publicly available, royalty-free fonts available online. Simply put, without engaging in any form of software piracy, individuals can download, for free, tools of the trade that begin to approach (although in some cases they are not the equals of) those used in the professional space. The effect that this availability of tools may or may not have on the publishing industry over time is one that warrants further investigation.

The process of assembling the chooser, or, as it appears on the final site, The Self Publishing Advisor, provided a wealth of information about the current

Research Monographs of the Center

Expert faculty from the School of Print Media, the E. Philip Saunders College of Business, and other fields at RIT comprise the cadre of researchers that build and carry out the research initiatives undertaken by the Center. The research agenda is built through collaboration between Center researchers and Industry Partner companies, resulting in research that is cross-disciplinary and highly relevant to industry concerns.

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state of online publishing services. What impressed the SMEs was the wide range of options available across all of the sites. In fact, arguably their greatest commonality was the diversity of their product and service offerings. One thing that almost all of the sites offered were services to obtain an ISBN number for a customer's book. However it was noted by SMEs that, in some cases, it is indicated in the small print that the print-on-demand site retains ownership of the ISBN number. An interesting line of inquiry would be to survey users to see if they understand the implications of such agreements.

In general, the many points of differentiation are better understood as continuums. For example:

- The amount of publishing knowledge that the end user is expected to have varies greatly from site to site.
- Book sizes range from standard paperback to large-scale high quality photo books. No site offered all options.
- The length of production runs vary across the sites, ranging from those that offer very short runs (one or two copies) to others that will only print in bulk.
- The range of services also varies greatly. Some sites offer one-on-one help with editing, designing, and marketing, while others offer virtually no help.
- Some sites utilize social networking tools to interact with users and facilitate communication between users. Some feature groups that users can join to share work and ideas

with other users who are producing work in similar topic/genre areas. Others provide tools that assist in the promotion of books.

Perhaps the best way to understand these differences is to chart of them on two axes. One axis charts the user's experience level with publishing, from neophyte to expert. The other axis represents the goal/the audience of the author. The products and services available range from those that appeal more towards individuals creating books for themselves and their immediate social circles to those that offer services for individuals seeking to niche or mass market their books. There is an opportunity to perform additional research into how the features of these sites fit inside the axes describe above. 📺

References

Goto, K., & Cotler, E. (2004). *Web ReDesign 2.0: Workflow that Works* (2nd ed.). Berkeley, CA: Peachpit Press.

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