

Lab I – Product Description Document
Black Team – Monarch Press Interactive

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1 Introduction

In today's era, knowing the latest news is one of the keys leading to successful. As paper has always been the traditional standard for news publication, it will not be sufficient because of the overwhelming amount of news in the society. As a result, publishers come up with a better method of establishing the news using the advantage of today's technology knowing as electric newspaper or online newspaper (Country Comparison: Internet Users, 2015). However, designing an online newspaper is not as simple as printing an old fashion newspaper. Readers will not be interested in a poorly represented digital media; thus, valuable articles will not be reached. Therefore, in order to keep up with the evolution of media and stay competitive, journalists must maintain their technology competencies.

Modern readers' demands are evolving every single day. Readers not only expect having captivating articles but also would like to be able to interact with the news' related such as other readers or the authors. Large publishers such as CNN, ESPN, and The New York Times are able to provide their journalists with sufficient technologies and tools to satisfy readers' needs. However, untrained bloggers or university writers might not be able to access professional tools because of low budget or lacking of computer skills (Otto, 2014). There might be websites such as Squarespace or Wix that allow bloggers to build their own websites but it would not be sufficient because it limits the bloggers within some pre-built templates or missing the right components.

Monarch Press is an open-source solution to the mentioned issues. Its goal is providing university news organizations, as well as individual writers or small publishers groups, the easy to use tool in order to produce high quality articles without the programming experience. Monarch Press will connect journalism and technologies. In 2015, an ODU computer science

team called Green Team developed a foundation for this project. This project will add more features and an upgrade to the foundation.

2 Monarch Press Interactive Product Description

Monarch Press is designed for journalists who do not have in-depth experience with computers, especially in web design, to reduce the needs of website developers. As easy as drag-and-drop motion, monarch Press aims to make editing an article as quick and simple as possible. It is not only fast and easy to use but also provide journalists and bloggers the ability to create dynamic contents with different elements and designs. Unlike Word Press where journalists are limited to their free templates, Monarch Press is an open-source plug-in that helps journalists to create, edit, even share their articles and also give them the feature to include Twitter tweets, Facebook posts or other sources' contents. It is also be able to connect to multiple platforms and so convenient that it will be used by everyday bloggers. Monarch Press will give rich benefits to writers who are not proficient in the use of computers.

2.1 Key Features and Capabilities

Monarch Press consists of three main features and capabilities: visually article editing, open-source plug-in Content Management System (CMS) and social media aggregation.

The ability for editors and journalists to visually create templates and compose articles is the most critical component of Monarch Press. Using an uncomplicated drag-and-drop interface that will not require the editor to have special training, Monarch Press enables its users to produce multimedia elements and interactive data without having knowledge in web design. Graphical user interface is the key of the simplicity of the content management system. The next version of Monarch Press will also have the option for users to create polls and vote for opinions.

By enhancing from Word Press CMS, Monarch Press will removes the limitation that other CMS have such as being an open-source plug-in, having guest contributed content, integrating with social media, etc. Unlike Drupal, Pangae or Django CMS, Monarch Press CMS will have features that the others are missing and will provide not some but all of the journalist's needs.

Furthermore, Monarch Press supports social media aggregation based on keywords and location in order to improve readers' experience and broaden their understanding of the article's topic. Editors will be able to integrate multimedia components from various websites on the Internet such as Tweeter or Facebook with related contents. Therefore, readers not only receive information from the articles but also will be able to confirm it with other sources.

2.2 Major Components

1. Hardware

Internet connection will be the first requirement as Monarch Press is a plug-in for websites. According to our mentor Jugal Patel, Old Dominion University (ODU) is expected to have nearly 9,000 visitors a month with approximately 25,000 page views. In order to satisfy such large visitor volume, Monarch Press requires a decent hardware requirement. One of a good candidate is using a hosting plan at goddaddy.com. In addition, Monarch Press need to store users' data such as profile information, customized templates, and local caches for feeds.

a. Web Server

b. Database Server

2. Software

Software requirements for Monarch Press are based on its functional components which could be divided into three main parts. User interface (UI) component is the first part where users interact with the plug-in elements and features. Most editing features which using the easy drag-and-drop gesture, reading articles and interacting with social media contents will be built using PHP front-end code and HTML.

After receiving information from the UI component, data will be processed by the second component: the logic component. PHP back-end code running through Apache will be sufficient to resolve information when the users interact with Monarch Press UI. The logic component then calls the server to get appropriate data to response to the UI.

Depending on different requests from the logic component, the last component: the data component will answer if requested. In this component, databases are stored including user accounts and its type, users' caches, Twitter and Facebook caches, users' articles and comments, their personal templates, etc. MySQL is a suitable option for this type of database.

3. Algorithms

There are two main algorithms will be implemented into the products: algorithm for polling system and live viewer tracking algorithm. With the polling system, user will be able to create poll in the simplest way. Supporting multiple formats such as txt, docs, rtf, pdf, etc., users simple inputting poll questions in one line, poll choices separately in the next lines and the plug-in will handle the rest. The algorithm also securely checks that there is only one vote for one user. As soon as a vote is uploaded, the result will be updated and showed to the public.

Live viewer tracking algorithm is an algorithm that allows readers to keep track of other people are on the website such as how many other people that are also interesting in the same

articles, whether the author is online so that readers can contact with him/her instantly, how many users versus guests are online, etc. Registered users can choose anonymously browsing or in a “do not disturb” mode so that they will not be shown in the tracking. Readers’ privacy is also be considered so that only showing generic information such as how many people are in one category but not their user IDs or names.

3 Identification of Case Study

In 1930, ODU’s student news organization founded a digital newspaper called The Mace and Crown (M&C). The M&C is a weekly paper about history of ODU, school’s news, events in Norfolk and also the world. It is currently managed on a Word Press host. However, the M&C wants to enhance its multimedia publication and presentation. The M&C, firstly, aims to use modern formats to digitally publish contents with its best presentation. Secondly, the M&C’s journalists want to offer their readers with fresh experience by adding dynamic visual and contextual information to their articles. In addition, staying competitive with other news organizations is a must for the M&C.

Monarch Press plug-in comes into being because it addresses all the needs. It will be an open-source and can be publicly used by other news organizations as well as the M&C. Monarch Press is suitable for small news organizations, small community, local news with low budget and even individual journalists or bloggers.

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4 Monarch Press Interactive Product Prototype Description

4.1 Prototype Architecture

1. Hardware

Using a virtual machine (VM) or a free web hosting is sufficiently enough for the product prototype. The VM will be hosted by ODU's computer science department. As the testing database will be smaller and simpler than reality, storage will not be an issue.

2. Software

The VM will run Apache as the front-end for HTML, CSS and JavaScript. For back-end requirement, PHP 5.6 or later will be used to send and receive data to and from the database. The database will be built using MySQL for structure building and testing purposes.

4.2 Prototype Features and Capabilities

Monarch Press Interactive prototype will consist of three main features: Polling System, Live Viewer Tracking system and Open Authentication (OAuth) Login System. All of the features in this prototype will be demonstrate using a simple toolbar floating aside of the website, following users as they scrolling through pages so that users can easily access them whenever and wherever they want.

Ever wonder whether readers like a specific opinion in an article? What would people do in some situations that have limited choices? Polling system serves multiple purposes which fits in this occasion. Authors could simply create a Yes/No question poll just to see if readers like their ideas. In addition, readers can also create their own polls related to an article that they are reading, while they are still reading it. It could be a quick question to the author, or it could be an opinion survey for other readers to vote on. After casting a vote, poll creators and voters can see

the result immediately. Bar chart and percentage numbers will be used for visualize the result as well as the exact vote counts.

Live Viewer Tracking System, on the other hand, is a passive feature that runs by itself without the need of activating it. This system will allow registered users and also guests to know how many viewers in each article and category. The M&C staff can use this feature to see if an article is trending, whether it is hot news so that it can be put on top of page where it can be easily accessed. Readers can also take advantage of this system to contact articles' authors at the time they are online so that readers can have their feedback the soonest. Registered users, journalists and the M&C staff members can have an option to hide or be in "do not disturb" mode. The system will only show brief information such as number of guests and users or only their usernames for privacy purposes.

The third main feature is the OAuth Login System. New readers can use the regular sign up system to register for a new account. They can also use the OAuth Login System to login as registered users using their social accounts such as Twitter, Facebook or Google+. Normally, users will be direct to a page where they allow the M&C access to some basic information of their accounts such as their names, ages, genders, etc. After granting access to the M&C, their newly created account will be bound to their social account without the hassle of going through registering steps. Furthermore, users will have an option to link or unlink other social accounts to their current accounts.

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Software	Functionality / Capability	RWP	Prototype
UI			
Registered User UI	Create/Edit comments	✓	✓
Whitelist User UI	Create/Edit posts, Create/Edit polls	✓	✓
Mod UI	Add/Remove users to whitelist	✓	✓
Admin UI	Add/Remove mods, System options	✓	✓
Mobile UI	Adjustment for smaller screens/touch screens	✓	✗
Database			
Hashtags	Add/Remove/Search hashtags	✓	✓
Poll System	Count votes, calculate and show results	✓	✓
Account System	Create and manage accounts	✓	✓

Table 1 RWP vs Prototype

Table 1 is the comparison between this prototype and the real world product based on its features and capabilities. Nearly all of the mentioned features will be implemented and presented in the future releasing prototype.

4.3 Prototype Development Challenges

1. Risk Matrix

		Probability				
		1	2	3	4	5
Impact	5		C1	T2	T1	
	4			C2		
	3	T5	C4, T4			C3, T3
	2					
	1					

Table 2 Risk Matrix

Prototype risk matrix will be the same as the real product matrix as it facing the same customer risks and technical risks. The biggest concern for customer risks are showing on the

table as C1 and C3 as the community might not accept the use of social media contents on the M&C. Having all the features loaded on the page but not be used by the readers is also a great risk as some readers just want to get the news as fast as they can and leave the site without giving comment or vote. The high technical risk factors labeled as T1, T2 and T3 are also very important. The risk of this product relying heavily on Green Team's project requires our team to investigate and document the Green Team's implementation carefully in order to keep the development pace going well.

2. Programming Challenges

In addition to the risk matrix, time management and programming experience are the challenges that Black Team will face. Researching, implementing product features and testing major components in less than three months will not be easy tasks. Furthermore, different team members' experience with software and languages such as Apache, PHP, MySQL, etc. could be a great obstacle. However, with nowadays online resources and our teamwork spirit, these challenges will be successfully overcome.

Glossary

Algorithm: A sequential set of operations

Apache: open-source web server software

Application Program Interface (API): a set of routines, protocols, and tools for building software applications. An API expresses a software component in terms of its operations, inputs, outputs, and underlying types.

Content Management System: Software that allows user to edit, publish, and manage content

Database: Software that organizes and stores collections of data

Mace & Crown: The official ODU student newspaper

Monarch Press: Software developed by the Fall 2015 CS 411 Green Team for the Mace & Crown

MySQL: An open-source database system

OAuth: Open Authentication login system to login to websites using social accounts such as Twitter, Facebook, Google+.

ODU: Old Dominion University

PHP: Server-side language used for Word Press plugins

Prototype: An initial version of a product

Web server: A combination of hardware, and software that serves content over the Internet

Whitelist: A list of users with special permissions

Word Press: Open-source content management system used for the Mace & Crown website

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