CS 411W Lab 1 - Product Description Document

1   **INTRODUCTION -** <Introduce the CS 410 product and the approach to demonstrating its characteristics through prototyping (essentially an abstract). Should be approximately one page in length. Should summarize the societal problem with some reference/date support. Should outline problem and needed solution characteristics. Should introduce your product by name as the solution.>

As journalism becomes an increasingly digital enterprise, and data visualization and interactive become ubiquitous, more diverse and technology-oriented skills are required to create and maintain a competitive, high-quality news publication. University student journalists may find that it only grows more difficult to maintain competency in this wide variety of skills, and the training provided by undergraduate journalism programs often is inadequate in providing the technical skills necessary to compete in the modern, digital news arena.

MonarchPress is intended to bridge this gap and provide university news organizations with a tool that will help overcome complex technical hurdles and allow journalists to focus on writing and producing high-quality news content.

- explosion of news media consumption on the internet
- users' demand has steadily driven need for:
  - captivating writing and reporting
  - high-quality digital media and interactive content production
- technical training for student journalists has not kept pace with the required skillsets
- modern university news organizations:
  - utilize complex digital publishing platforms or content management systems
  - would like to integrate rich media throughout

University student news outlet -
- interested in delivering relevant and dynamic content to increase engagement among readers in the University community
- writers and editors need a product with the features necessary to compete with other news organizations
  - global, digitally connected information economy
  - other organizations may have significant budget just for digital media

2   **PRODUCT DESCRIPTION -** <Top level description of CS 410 product for the average reader – summary of the solution – and its goals and objectives. This section should be one paragraph minimum.>

2.1   **Key Product Features and Capabilities -** <What does it do? What is significant/unique/innovative about it? What does it accomplish? Describe how this solves the problem.>

- Open Source Content Management System
  - Living Documents that will can be changed and dynamically grow
  - Content aggregation that pulls syndicated new feeds together
  - Integrate interactive content such as maps and graphs
  - The readers will be able to interact and be more engaged with the articles
- User Interfaces
  - Drag & drop editing
  - Integrate media elements and dynamically aggregated feeds into themes and templates

2.2   **Major Components (Hardware/Software) -** <Overview of the hardware needed to support the solution. Describe how it is structured based on CS 410 MFCD. Define and describe the software to be developed.>

Hardware requirements:
- 8.7k unique monthly visitors
- approx. 25k monthly pageviews
- at current visitor volume - very modest hardware requirements
- Current shared hosting plan at godaddy.com should be sufficient for almost 3x the current traffic volume[6]
- Managed hosting provides load-balancing to managing potential traffic spikes

Software Requirements
- User Interfaces
  - Drag & drop editing
  - Integrate media elements and dynamically aggregated feeds into themes and templates
- Database
  - Storage for aesthetic customizations
  - Local cache for aggregated feeds
  - User profiles, customization (favorites, notifications, comments)
- Interfaces
  - Integrate content stored in Wordpress database
  - Pull from Twitter API[3]

- ○ OAuth integration and Social Media Sharing[5]
- ● Algorithms
  - ○ Drag & drop editing
  - ○ Render media elements and content widgets
  - ○ Feed aggregation
- ● Wordpress Requirements[1]
  - ○ LAMP/LEMP stack
    - ■ Linux
    - ■ Apache or Nginx
    - ■ MySQL (ver 5.0+)
    - ■ PHP (ver 5.2.4+)
  - ○ Managed (shared) hosting at GoDaddy.com

3 **IDENTIFICATION OF CASE STUDY -** <Who is this product being developed for and why? Who else might use this in the future?>

Mace and Crown
- ● As a University student news outlet, they want to increase their digital journalism presence. The writers and editors need a product with the features necessary to compete with premiere news organizations in our global, digitally connected information economy.

4 **PRODUCT PROTOTYPE DESCRIPTION-** <Top level description of the CS 411W prototype as it relates to the end product (410) – goal. Are capabilities reduced or eliminated? Simulated – modeled?> Include a table of comparison between RWP and Prototype either in section 4.>

Prototype
- ● Purpose: To demonstrate how MonarchPress will work in the "real world"
- ● Some components will be simulated due to lack of resources
  - ○ This will cause some divergence from the real world product
- ● Will serve as a testing space for users to test MonarchPress

Table (link)
- ● Shows specific differences between the prototype and real world product
  - ○ Fully implemented, partially implemented, and eliminated functionalities

4.1 **Prototype Architecture (Hardware/Software) -** <How will the prototype be structured to demonstrate key features of the 410 product. Prototype MFCD provided and described.>

Virtual Machine
- hosted by Old Dominion University
- Linux/Unix
- Available Software
    - Apache or Ngnix
    - MySQL
    - PHP
- Free web domain

Hardware requirements:
- 8.7k unique monthly visitors
- approx. 25k monthly pageviews
- at current visitor volume - very modest hardware requirements
- Current shared hosting plan at godaddy.com should be sufficient for almost 3x the current traffic volume[6]
- Managed hosting provides load-balancing to managing potential traffic spikes

Software requirements:
- Wordpress Requirements[1]
    - LAMP/LEMP stack
        - Linux
        - Apache or Nginx
        - MySQL (ver 5.0+)
        - PHP (ver 5.2.4+)

Mock of Case Study Website:
- Fake Mace and Crown Website
    - Homepage
    - Login Page
    - Article Page
    - Current Plugins

4.2 **Prototype Features and Capabilities -** <What does the prototype demonstrate – why is that significant in showing how the problem is solved – or why you have demonstrated success? How does the prototype address the 410 project risk mitigation? Describe the functional goals and objectives.>

Functional Goals:
    Demonstrate -
- The layout and editing engine
  - Arrangement of components within a grid structure
- Favorite and notification system
  - Users receiving notifications of content updates
- Standard content viewing
- Content editing
- Submission review
- Mobile alerts

    Partially Demonstrate -
- User login
- Interactive and data visualization elements
  - For both page layouts and individual content items
- Twitter feed aggregation and integration
  - For both page layouts and individual content items
- Admin controls
  - Add, remove, or modify users
  - Change user access level
- Page Editor
- Contact information saving

Significance and Risk Mitigation

Because we are using an iterative and incremental software development methodology, demonstrating functionality to the stakeholders (Mace & Crown) is important. The prototype will demonstrate all of the desired core functionality of the requested content management system and will allow users from the M&C to leave feedback/concerns, which is essential for the success of our product. A huge part of our risk mitigation strategy was to keep users and readers involved to ensure that we meet our content/template readability and aesthetic requirements. The prototype provides a platform for that involvement.

4.3   **Prototype Development Challenges -** <Challenges expected while completing the objectives of the prototype – ie knowledge missing, capability missing, supporting technology issues.>

- Limitations of WordPress API
  - The WordPress API may limit what the delivered product can do and how it does it.
  - Mitgation: Research WordPress API to anticipate areas where it may limit our solution. Research other WordPress plugin implementations to understand how other developers have solved similar problems.

- Lack of Expertise in WordPress, PHP, HTML, CSS, and Javascript
  - The delivered product is written in languages that not everybody knows and this can lead to difficulties implementing and using it.
  - Mitigation: Utilize excellent WordPress API documentation, other documentation and discussion on the internet, and printed materials as references. Also, learn WordPress over the Summer.
- Incompatibility with Existing Plugins
  - The delivered product does not interact desirably with existing plugins.
  - Mitigation: Follow best practices for WordPress and PHP development, including unique variable and method naming, use of unique class names to group methods, etc.

Glossary
- **Admin -** a person that has the rights to do anything to the software or database.
- **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 Aggregation -** bringing together specific type of information from multiple online sources.
- **Content Management System (CMS) -** allows publishing, editing and modifying content, organizing, deleting as well as maintenance from a central interface often used to run websites containing blogs, news, and shopping.
- **Contributor -** a person who sends in material to be published, whether it is through twitter or a researcher. Not, someone that is part of the news organization.
- **Cascading Style Sheets (CSS) -** a simple mechanism for adding style to Web documents.
- **Digital Journalism -** a contemporary form of journalism where editorial content is distributed via the Internet as opposed to publishing via print or broadcast.
- **Disqus -** is a blog comment hosting service for web sites and online communities that uses a networked platform.
- **Editor -** a person who is in charge of and determines the final content of a text, particularly a newspaper or magazine.
- **Javascript -** an object-oriented computer programming language commonly used to create interactive effects within web browsers.
- **Journalist -** a person who writes for newspapers or magazines or prepares news to be broadcast on radio or television.
- **HTML -** Hypertext Markup Language, a standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages.
- **Living Document -** dynamic document is a document that is continually edited and updated.
- **Mace & Crown -** A university news organization that is under a tight budget and looking for a cheaper alternative to their current CMS with more customization and tools.

- **MySQL -** Most widely used open-source RDBMS.
- **Open Source -** denoting software for whrich the original source code is made freely available and may be redistributed and modified.
- **PHP -** is a server-side scripting language designed for web development.
- **Plugin** - a software component that adds a specific feature to an existing software application.
- **Reader -** a person that reads and interacts with the articles posted by the news organization.
- **RDBMS -** relational database management system.
- **UI/UX -** the process of enhancing user satisfaction by improving the usability, ease of use, and pleasure provided in the interaction between the user and the product.
- **Whitelisted** - a list of people or products viewed with approval.
- **Wordpress** - Most popular open source CMS based on PHP and MySQL.

References

- Student newspapers weigh trading independence for financial support
  - http://www.stltoday.com/news/local/education/student-newspapers-weigh-trading-independence-for-financial-support/article_29150c79-624f-5527-9fa1-505faa3e5b5b.html
- Read All About It … In The Student Paper
  - http://ww2.odu.edu/ao/alumni_magazine/fall03/Deadlines%20and%20Headlines.html
- SGA balances behemoth budget
  - http://www.maceandcrown.com/2014/09/03/sga-balances-600-thousand-in-student-organization-budgets/
- 10 key skills for digital journalists to hone in 2014
  - https://www.journalism.co.uk/news/10-key-skills-for-digital-journalists-to-hone-in-2014/s2/a555503/
- Wikipedia - Living Document
  - http://en.wikipedia.org/wiki/Living_document
- The Public Insight Network, now swimming in data, launches its own reporting unit
  - http://www.niemanlab.org/2012/01/the-public-insight-network-now-swimming-in-data-launches-its-own-reporting-unit/
- Where Newspapers Can Start the Conversation
  - http://dangillmor.typepad.com/dan_gillmor_on_grassroots/2005/02/where_newspaper.html
- Collaborative Conundrum: Do Wikis Have a Place in the Newsroom?
  - http://www.ojr.org/ojr/glaser/1094678265.php
- Citizen Collaborative Journalism (CCJ)
  - http://searchsoa.techtarget.com/definition/collaborative-citizen-journalism
- Collective Work: Best Practices for Collaborative Investigative Reporting

- http://ec2-23-21-180-28.compute-1.amazonaws.com/mediashift/wp-content/uploads/sites/8/import/i-5608f590c88c0e82640b95434d23dd4b-Planning_best_practices.pdf
- ODU Strategic Plan (2014-2019)
  - https://www.odu.edu/about/planning/strategic-plan-14-19
- GoDaddy.com managed WordPress hosting
  - https://www.godaddy.com/pro/managed-wordpress-hosting
- Wordpress Requirements
  - https://wordpress.org/about/requirements/
- Wordpress usage statistics
  - https://wordpress.org/about/stats/
- WordPress APIs
  - https://codex.wordpress.org/WordPress_APIs
- WordPress Social Login
  - https://wordpress.org/plugins/wordpress-social-login
- 4 ways content management systems are evolving & why it matters to journalists
  - http://www.poynter.org/news/media-innovation/134791/4-ways-content-management-systems-are-evolving-why-it-matters-to-journalists/
- Pangea CMS
  - http://www.pangea-cms.com/
- Newscoop
  - https://www.sourcefabric.org/en/newscoop/
- Armstrong CMS
  - http://www.armstrongcms.org/
- Django CMS
  - https://www.django-cms.org/en/
- CMS Market Share
  - http://www.opensourcecms.com/general/cms-marketshare.php
- Agile Manifesto
  - http://agilemanifesto.org/
- Twitter Search API
  - https://dev.twitter.com/rest/public/search
- OAuth Documentation
  - http://oauth.net/documentation/
- Environmental Protection Agency - Climate Change: Basic Information
  - http://www.epa.gov/climatechange/basics
- 2014 National Climate Assessment
  - http://nca2014.globalchange.gov/report
- Natural Resources Defense Council - Climate Change Health Threats in Virginia
  - http://www.nrdc.org/health/climate/va.asp
- Washington Post - In Norfolk, evidence of climate change is in the streets at high tide

- - http://www.washingtonpost.com/business/economy/in-norfolk-evidence-of-climate-change-is-in-the-streets-at-high-tide/2014/05/31/fe3ae860-e71f-11e3-8f90-73e071f3d637_story.html
- NPR - As Sea Levels Rise, Norfolk Is Sinking And Planning
  - http://www.npr.org/2014/06/24/324891517/as-sea-levels-rise-norfolk-is-sinking-and-planning
- USA Today - Rising sea levels torment Norfolk, Va., and coastal U.S.
  - http://www.usatoday.com/story/news/nation/2013/12/17/sea-level-rise-swamps-norfolk-us-coasts/3893825/
- Huffington Post - Norfolk, Virginia's Rising Sea Levels And Sinking Ground Pose A Community Challenge
  - http://www.huffingtonpost.com/2012/04/28/norfolk-virginia-sea-levels-rise_n_1461486.html
- The Daily Climate - Sea-level rise: Whatever you call it, water is rising in Norfolk
  - http://www.dailyclimate.org/tdc-newsroom/2012/08/norfolk-sea-level-rise