Old Dominion University

Lab 1 - NGage Product Description

NGAGE – Silver Team

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1. Introduction

Due to the lack of available resources, college students may have trouble finding suitable housing, tutoring services, or on/off campus leisure activities and entertainment for a positive and successful college experience.

1.1 Problem Statement

The lack of student involvement and engagement in campus communities, events and organizations at Old Dominion University can negatively impact academic one’s performance.

1.2 Problem Characteristics

Although the problem is complex, the first step to getting students involved is to get them informed. Many students are simply unaware of the organizations, resources, and events on campus. Student also find it difficult to attain optimal housing on and near campus. Since students are not in class all day, every day, finding safe and fun ways to spend leisure time is equally as important for students. Many are not fully aware of the full array of options when it comes to local entities such as restaurants, grocery stores, local entertainment venues, etc.

1.3 Solution Characteristics

The resolution to this problem is to get students quickly informed and have this information available in one central location requiring minimal effort to access. This can be accomplished by developing a web based application displaying a live feed of pertinent information. The information on this platform would include housing opportunities on and off
campus, organization and clubs, Tutoring hours and locations, and food and entertainment nearby campus.

2 NGage Product Description

The solution to informative, campus communication is the NGage web application. Once on campus a student can do a variety of activities to promote academic success and campus involvement. If a student wants to join a club or organization, they can find pertinent and live information about any one at NGage. From NGage, there the student can also contact club leaders and make an informed decision about which one to join.

2.1 Solution Method

The solution to informative, campus communication is the NGage web application. Once on campus a student can do a variety of activities to promote academic success and campus involvement. If a student wants to join a club or organization, they can find pertinent and live information about any one at NGage. From NGage, there the student can also contact club leaders and make an informed decision about which one to join.

A student might be done studying from the day and may want to find some safe, fun, leisure activities to do. NGage will have a list of leisure activities and entertainment venues on and near campus that appeal to students. Students can then make a more knowledgeable decision about where to go and what to do before stepping foot out of the door.
For those students looking for academic help NGage can aid finding qualified persons. If a student needs course specific tutoring or help, NGage will provide a list of academic aids and tutoring schedules to keep students informed.

Students looking for housing can also use the NGage web application for assistance. Current available housing will be posted online to assist users in finding safe affordable residency near ODU’s campus.

2.2 Goals and Objectives

The goal of the NGage web application is to get student more involved in their respective campus communities. The objective is to get students informed about the most critical aspects of their time on campus.

2.3 Key Features and Capabilities

The NGage site will be a web-based application developed by making use of Agile programming methods. The site will run on all three major browsers, Chrome, Firefox, and Internet Explorer (IE11 and up). The NGage platform will be a portal where Students can get information about housing opportunities on and off campus Organization and clubs, Tutoring hours and locations, Food and entertainment nearby campus.

Another main feature of the NGage application will be its live feed. Details for events happening in real time can be posted here. Notifications can be sent out to registered users via email. Organizations and club events, as well as tutoring information will also have their event times and information pushed to the live feed as they are happening.
2.4 Major Components

The NGage platform requires several major components to operate efficiently and effectively. Starting with web interface itself, NGage will be a “portal” with an array of up to date information. Behind the scenes the website will have open and active connections to Social Media API’s, such as twitter to post live information. The website will also reach out to a private database, maintained internally, to retain user data. On the front end, the user will request the NGage web application from any web enabled device. The website will can also retain cookie data from the users to be used in order to optimize individual user experience.

Figure 1 Major functional components diagram NGage application and prototype
3 Identification of Case Study

Although the site is targeted toward ODU students, NGage has the potential to be useful for several other types of users.

3.1 Users

Parents of ODU students can use the application to find off campus housing for their child. School organizations and clubs would also find the site useful for posting event information and recruiting. Site Administrations would have elevated access to the site to moderate its user’s contents and data. Finally, the last potential user would be approved rental companies. These entities would use the NGage application to advertise open and available off campus housing for students.

3.2 Reason for Visiting the Site

There are many general reasons for visiting the site. As a platform, the goal is for users to become more engaged in the schools and communities they attend and live in. The reasons why people would visit NGage need to be understood. Most users will use the site to check for updated information regarding event scheduling. The next most common reason for visiting the site could be simple browsing. The third most frequent reason for visiting the site should be to give reviews. The final potential reason for visiting the site is to get notifications, however they are displayed to the user once they login, immediately notifying them of time sensitive information.
4 NGage Product Prototype Description

Developing the NGage platform will come with some inherent risks. A data breach is always a constant threat for our platform and users. Preventative measures and response protocol methods will be discussed and laid out as a part of the build process. Data loss is another risk that we must face as a part of the build process. Therefore, we will need to have a backup of our system. An example of this is a catastrophic hardware failure where the original version of the data cannot be recovered.

4.1 Prototype Architecture (Hardware/Software)

Certain hardware components must be used to launch the NGage web application. To access the website, the user will need to have a web enabled device. The user’s device must be able to run a popular web browser in order to access the NGage prototype. The NGage Web application and accompanying database will be hosted from a Linux server at ODU. The primary software that will be used to develop the NGage web application prototype will be powerful software IDE such as Eclipse for java or WebStorm for JavaScript and web development.

4.2 Prototype Features and Capabilities

The prototype will include many features and capabilities. As seen in Table 1, users can browse the site as guests to find information relevant to their needs. Tutoring schedules and housing information will also be available to view. Clubs and organizations will not have their accounts created upon request to post group information relevant to engaging students. The “Contact Us” form will be fully functional in our prototype allowing for instant feedback from
our users. The live social media feed will also be available and operational in the prototype. The
clubs and organizations portion of the prototype will be limited. There will be no direct
communication between users and clubs/organizations. Instead contact information will be
available for users to contact a club or organization’s existing members.

Although the prototype will have many essential features, some will not be included in
the initial product launch. Table 1 lists the features that will not be included. These features have
been eliminated from the prototype due to time constraints and skill level. Club and organization
leaders will not be able to manage their own page. Direct messaging will also not be supported
within the web application. Students will not be able to join organization or sign up for event
attendance directly from the NGage application either. These features were determined to be
non-critical to the overall product offering and user experience of our customers.

<table>
<thead>
<tr>
<th>Real World Product</th>
<th>Prototype</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fully Functional</strong></td>
<td>Users can search for a variety of information that includes:</td>
</tr>
<tr>
<td>Components</td>
<td>• Live feed</td>
</tr>
<tr>
<td></td>
<td>• Available Housing</td>
</tr>
<tr>
<td></td>
<td>• Clubs and organizations</td>
</tr>
<tr>
<td></td>
<td>• A “Contact us” to provide feedback</td>
</tr>
<tr>
<td><strong>Partially Functional</strong></td>
<td>Users will not be able to view club and organizations full content. Brief info will be given</td>
</tr>
<tr>
<td>Components</td>
<td>Students Direct Messaging</td>
</tr>
<tr>
<td></td>
<td>Outside sources posting</td>
</tr>
<tr>
<td><strong>Eliminated</strong></td>
<td>Users ability to comment on any posts.</td>
</tr>
<tr>
<td>Components</td>
<td></td>
</tr>
</tbody>
</table>
Table 1 *Feature comparison between real world product and prototype models*

### 4.3 Prototype Development Challenges

There are possible challenges the team may face during the build process. Time constraints are the greatest threat. Unfortunately, the team cannot afford any uncalculated setback. Therefore, if any project runs over its pre-designated time, the team could be in jeopardy of not finishing the prototype. To accomplish our prototype development, work will be divided up amongst team members. The last prototype development challenge is not having the appropriate knowledgebase to produce a running web application. Different aspects of this web application require different coding languages and skills to successfully operate. Team members will need to learn these new languages and techniques to be more successful.

### 4.4 Risk Mitigation

There are many risks that come along with creating the NGage web application. Some of these risks will be consumer facing while others will be developmental/technical risks. Consumers face a risk with their information as they trust the site to keep all personal information safe. This introduces the risk of a data breach by hackers. The site will need to maintain an up to date security profile to operate safely. The site also needs a backup to avoid data loss in the event of technical or hardware failure resulting in uncoverable data. The last risk that the team’s faces is heavy traffic to the site. Heavy traffic could mean site downtime and bad user experiences. If this happens a system upgrade of hardware may be necessary to sustain usage requests.
### Risk Matrix for NGage Web application

<table>
<thead>
<tr>
<th>Impact</th>
<th>Probability</th>
<th>Very Low</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>C2</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>4</td>
<td>T4</td>
<td></td>
<td>C1,T3</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td>3</td>
<td>C3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>T1</td>
<td></td>
</tr>
<tr>
<td>Very Low</td>
<td></td>
<td>1</td>
<td>T2</td>
<td></td>
<td>C4</td>
<td></td>
</tr>
</tbody>
</table>

Risk Matrix for NGage Web application
**Glossary**

**Alert (email/text):** Alert messaging (or alert notification) is machine-to-person communication that is important or time sensitive. An alert may be a calendar reminder or a notification of a new message.

**AngularJS:** a JavaScript-based open-source front-end web application framework maintained by Google.

**Cookie:** (also called HTTP cookie, web cookie, Internet cookie, or browser cookie) a small piece of data sent from a website and stored on the user's computer by the user's web browser while the user is browsing.

**Git:** version control system for tracking changes in computer files and coordinating work on those files among multiple people.

**GitLab:** web-based git repository manager the includes wiki and issue tracking features.

**Gradle:** an open-source build automation system that was designed for multi-project builds.

**JavaScript:** a programming language commonly used in web development where the code is processed by the client’s browser.

**MySQL:** an open source multi-user database management system.

**ODU:** Abbreviation for Old Dominion University

**Platform:** an integrated set of packaged and custom applications tied together with middleware.
**Student involvement**: the amount of physical energy students exert and the amount of psychological energy they put into their college experience.

**Ubuntu**: open-source Linux operating system.

**Virtual machines**: an emulation of a computer system that provide functionality of a physical computer.

**Web Application**: a client server computer program in which the client (including the user interface and client-side logic) runs in a web browser.

**Wiki**: a website on which users collaboratively modify content and structure directly from the web browser.

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**References**


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Headcount by Domicile, Campus, and Level. (n.d.). Retrieved February 1, 2017, from

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