

Lab 1 – Strome Infusion Product Description

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1. INTRODUCTION

The U.S. Census Bureau's latest annual data report on "Statistics of U.S. Businesses" reported that between the years 2011 and 2012 there were 662,470 new employer businesses that were created, and that the total number of small businesses was 28,713,561 ("Statistics"). With hundreds of thousands of small businesses being created every year, as well as an immeasurable number of others who may be interested in starting a business, there is a large interest in information and resources to help start such businesses.

The Old Dominion University Strome Entrepreneurial Center was created to help address the needs of nurturing small businesses, and to encourage students to look at entrepreneurship as a viable career option ("Strome"). The SEC's main goals are to help educate students on the many facets of entrepreneurship, as well as giving them some of the resources needed to help start a small business of their own ("Strome").

In order to properly understand the purpose of the SEC though, it would help to first understand its founder. Mark Strome, 58, is the founder of the SEC as well as a successful businessman who founded Strome Investment Management (Vair). He gave an \$11 million donation to ODU, which was used to create a new College of Business, as well as the SEC (Vair). He gave this donation with two things in mind. First, to thank ODU for giving him an opportunity to go to their college when his transcript from high school was deemed initially inadequate, but he also wanted to create a school and a center that, as he stated in his own words, "nurture a culture of entrepreneurship, both university-wide and across the region" and "stands for taking unremarkable people [and] giving them the inspiration and a few tools, so that they have a shot at becoming remarkable leaders (Vair)."

ODU has over 20,000 enrolled students, and with such a large number of students comes a large number of students that may be interested in entrepreneurship as a career path (“Old Dominion”). This puts a rather large burden on the SEC to try and both help and keep track of every student that either visits their website or enters their building on campus. The current online registration system that is required before a student can use their online resources includes over 20 different fields of information, 11 of which are required. It also has a 2-step approval process that requires both a member of the SEC and a member of the organization who runs the information system to both approve of a person before they can use any services which can take days, if not weeks to be done. All of this can lead to discouraging students from trying to use the services of the SEC. This has also lead to another issue, which is the fact that because students do not always have the time to fill out a long registration form, which means that many students who are visiting the SEC or attend events held by it are not being recorded into the system and are easily forgotten about as a result. A final problem that the SEC is dealing with on top of these two issues is that the current system they are using does not connect their students to the proper resources they may need to help them in the process of starting a business.

Strome Infusion was developed to address many of the issues plaguing the SEC with its current online system. Strome Infusion streamlines the registration process, making it simpler and easier for students to register online with the SEC. ODU Students who register with the new Strome Infusion information system with their school email address will automatically be approved, and all others who wish to use the service will only have to wait for the SEC to approve them. Finally, Strome Infusion will allow students access to resources and information not provided by the current system.

2. STROME INFUSION PRODUCT DESCRIPTION

Strome Infusion is both a web-based and mobile app-based software system that will allow ODU students easy access to the SEC's online resources and allow the SEC to better communicate with students who are interested in entrepreneurship. It consists of three major components: a website, an android mobile app, and a database.

2.1 Key Product Features and Capabilities

The most important feature of Strome Infusion is the new and improved SEC website. This is the main website that students will access when accessing information concerning the SEC, and when using the SEC's online resources and services. It will be improved over the current design by creating a streamlined registration process for ODU students that will require the student, at first, to simply input their first and last name, and their valid ODU student email address. Once the student is registered they will be able to set up their account information, including credentials and skills they have that could contribute to a business someone else is running or hoping to create. Businesses can also use this website to create pages for their business so that they can be introduced to students with skills that could benefit their business.

Alongside the website, Strome Infusion will come with a mobile application that be capable of all of the same features as the main website, as well as a few special mobile features such as pushing notifications to the user's phone to keep them updated on information important to their success with the SEC.

Finally, the last important feature of Strome Infusion is its database. The database will keep track of what skills students have, help students and entrepreneurs manage projects on the SEC website, and help make the streamlined registration process possible in the first place.

2.2 Major Components

Strome Infusion is primarily a software service application for both the web and mobile phones. As shown in Figure 1 the website application and the website services for the mobile application are both hosted on a special dedicated server, and the database is hosted on another dedicated server as well. The servers will be hosted on an Ubuntu server. The website is written in Python and JavaScript using the Flask and AngularJS frameworks respectively. The mobile app is written in JavaScript using Apache Cordova and AngularJS. Finally, the database is run using PostgreSQL.

The database will be extremely important in facilitating many of the features of Strome Infusion. User profiles and company profiles will both be recorded in the database, as well as the skill sets of individual users, and job boards for companies.

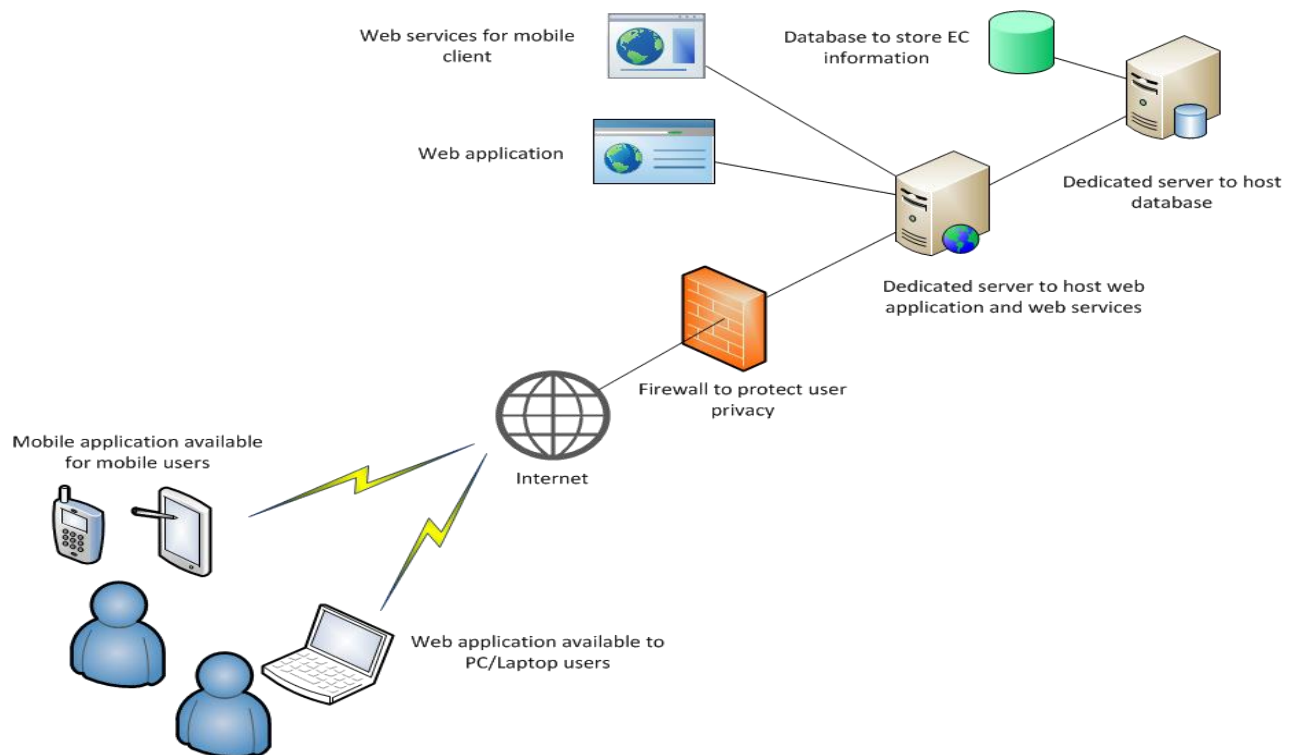


Figure 1. Strome Infusion Major Functional Components.

3. IDENTIFICATION OF CASE STUDY

The original concept for Strome Infusion was proposed by Nancy Grden, the first executive director for the SEC. She established a deal with VentureHive, a third party software development company, to develop a website for the SEC. While the website worked, she found a number of issues plagued the website and the way that it was maintained as shown in Figure 2.

Figure 2 goes into much greater detail as to what problems the current system has. Because of its cumbersome registration process it has become both intimidating and time consuming for a student to simply become a member of the website. Also, because it lacks any form of project management, which means that students have no way of keeping track of projects they are working on within the confines of the SEC either.

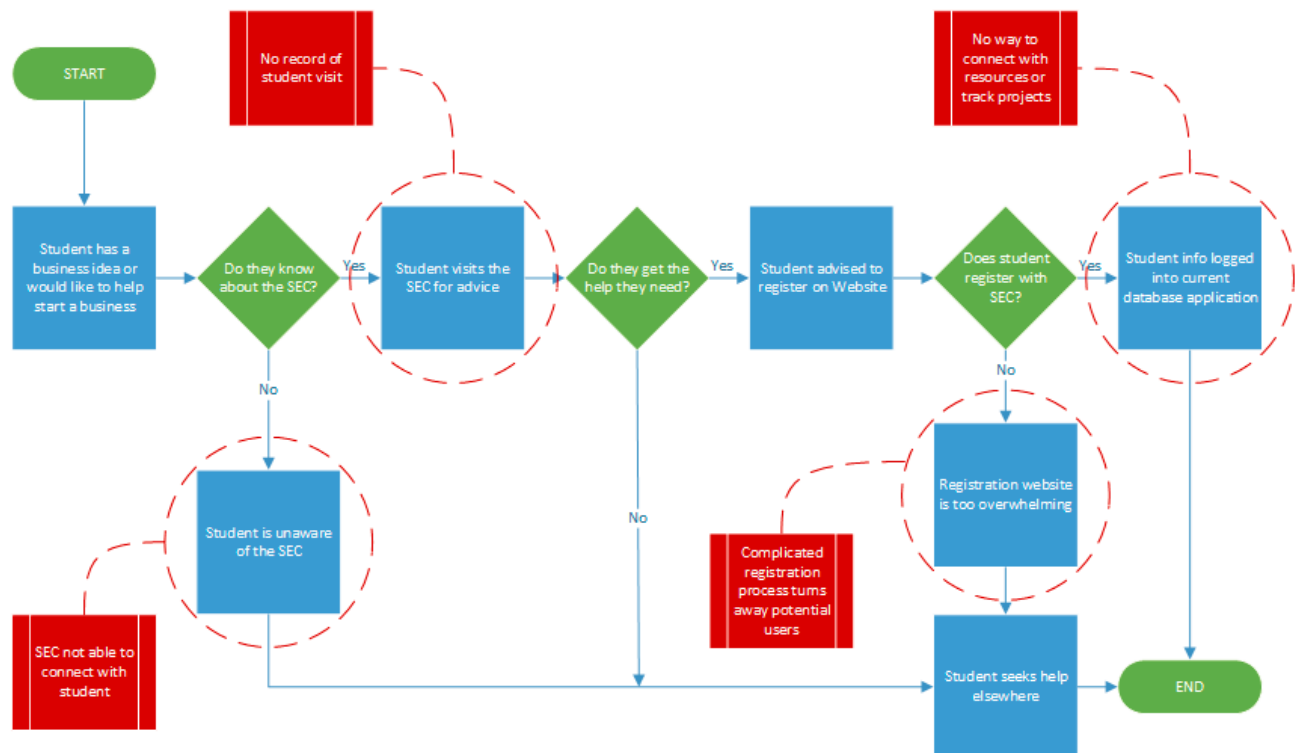


Figure 2. SEC: Current Process Flow

Nancy Grden is one of many stakeholders in the success of Strome Infusion. Others include any future SEC Directors, the SEC's staff, the outside business community, student entrepreneurs, alumni entrepreneurs, and ODU's Information Systems Department. The SEC staff will be relying on the new website, and its new tools, to do their jobs more efficiently in terms of keeping track of interested students, and helping students better manage projects and resources that they are a part of. Student and alumni entrepreneurs will benefit from being able to register with the SEC more easily, and being able to take advantage of the new tools and resources the new website provides. ODU's Information Systems Department holds a stake in the development of Strome Infusion primarily as a result of the fact that they will be responsible for maintaining both the website and the database for Strome Infusion, and would benefit from it being developed without the need for constant third party interference.

Stakeholders in the development of Strome Infusion will be able to measure its success through a number of metrics. First, there is the rate of users signing up, as well as the overall difference in the number of users registered with the new website. Second, there is the overall number of ventures started or managed on the new SEC website. Finally, success will be able to be measured through surveys of user experience.

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4. STROME INFUSION PRODUCT DESCRIPTION

Strome Infusion's prototype will be developed with the goal of demonstrating that a new website and mobile app will allow the SEC to help student entrepreneurs more efficiently. The main ways it will accomplish this are through three major improvements in functionality that will be made to it in comparison to the current system. First, a better and simpler registration system will make it easier for students to register on the SEC website and record any visits they have made to the SEC building. Second, the prototype will have a mobile web application that will allow students to register and use services of Strome Infusion from any location. Third, the prototype will have project management features included that will allow students to connect with other entrepreneurs and businesses.

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4.1 Prototype Architecture

The prototype will be very similar to the real world product, but with some key differences. As it is shown in Table 1, the prototype will be run on virtual servers, it will simulate staff, students, and resources through data given by Strome Infusion team members, and the mobile version will only be developed for Android devices.

Feature	Real World Product	Prototype
Authentication	Integration with 3rd party schemes such as shibboleth	Custom authentication
Client Testing	Testing across a large variety of mobile and desktop web browsers	Mobile testing on only the devices that our team members own. Full support only for modern browsers
Customer Support	Telephone and email support for problems or questions using the application	Not simulated – Customer support is a common need for software applications.
Events	Ability to list events and add events to a calendar view for individuals and companies	Eliminated from prototype
External Resources	External investors and mentors who are willing to contribute to the success of the venture.	Test data provided by Director Grden and the Strome InFusion team
Internal Resources	Students who want to utilize their skills to work on a business venture.	Strome InFusion team members connecting as a venture to test functionality
Mobile Application	Mobile application will be available natively for all major mobile OS platforms	Will only be available natively for Android devices
SEC Staff	SEC staff and mentors who will provide guidance for the project.	Director Grden as well as Strome InFusion team members simulating Strome Entrepreneurial Center staff
Security	Audited to confirm the security of proprietary data	Not reviewed
Service	Support for scaling to multiple servers and other environments	Limited to the capabilities of a single virtual machine
Service Integrations	Integrate with existing software and services used by universities such as Microsoft Lync	Integrated with email
Students	Students at ODU who wish to collaborate on a business venture	Actual student and Strome InFusion team members using virtual machines using Strome InFusion team data along with special test functionality

Table 1. Feature Comparison between Real World Product and Prototype.

Strome Infusions database will be populated with data generated by its team members and the SEC Director Nancy Grden. The virtual servers that will contain the prototype web server and database server will both be hosted on an ODU server as shown in Figure 3.

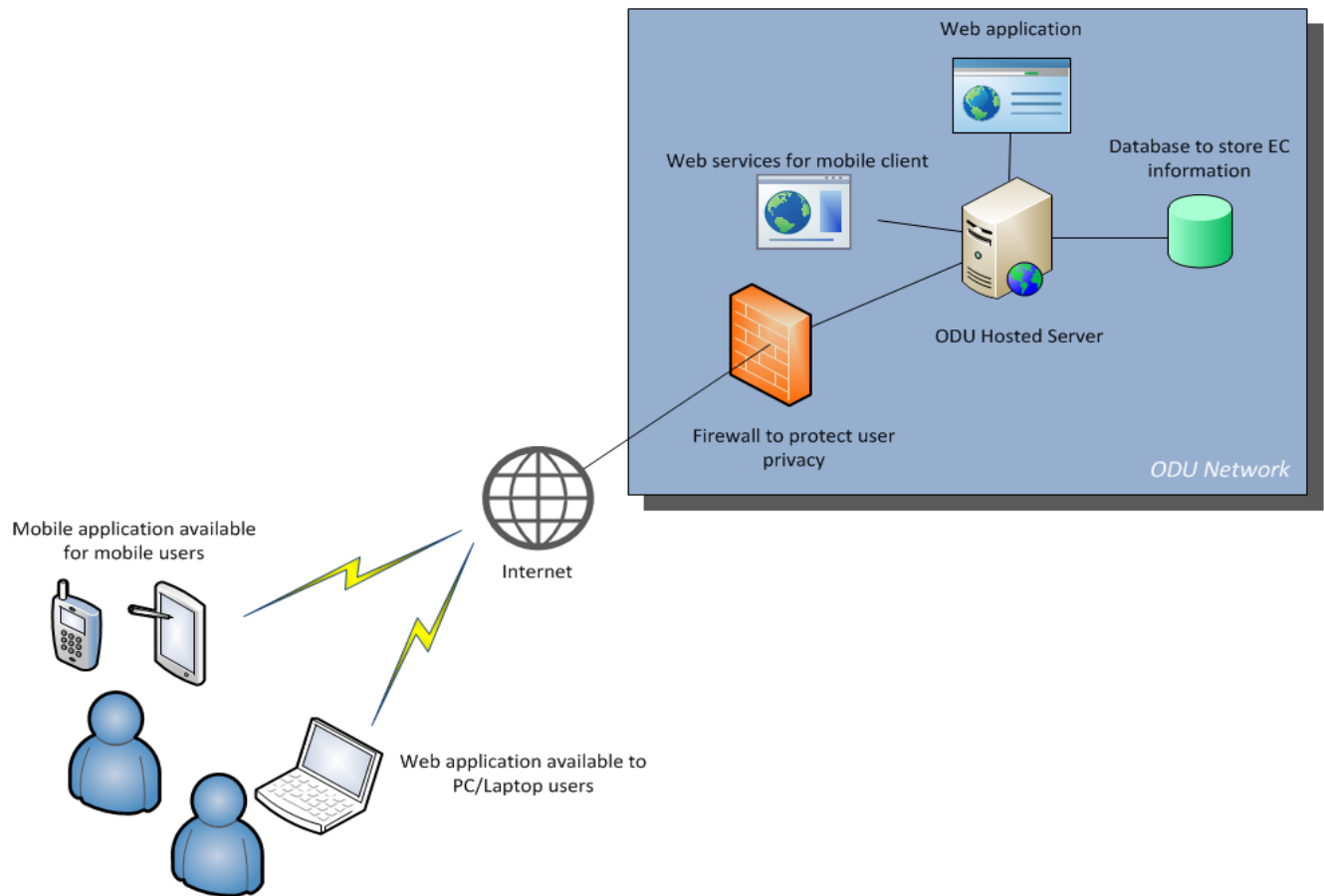


Figure 3. Strome Infusion Prototype Major Functional Components.

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4.2 Prototype Features and Capabilities

The prototype will have a majority of the features and capabilities seen in the real world product. This will include its simple registration process, team management services, external resource management, a database of registered student information and skills, and an android application that features all of the same features as the website platform.

4.3 Prototype Development Challenges

Strome Infusion will have a few select challenges that must be overcome during its development lifecycle. One of those challenges will be the fact that in order to register properly with the new website, one must have a valid ODU email. This will limit the number of users who can test this feature properly. Also because there is going to only be a single release of the product for the use of the SEC, it will allow for very limited testing of the platform as a whole. The final challenge will be a lack of resources in testing the mobile application, since proper testing would require a number of different Android devices that are not all necessarily available to the team at this point in time.

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5. APPENDIX

5.1 Glossary

SEC: The Old Dominion University Strome Entrepreneurial Center.

ODU: Old Dominion University, a university in Norfolk, VA.

Employer Business: A business that hires at least 1 or more employees.

Small Business: A business that has less than 500 employees.

Entrepreneurship: The process of starting a business.

Ubuntu: An open-source Linux-based operating system.

Python: A general purpose, high level programming language.

JavaScript: A high level programming language used in the creation of websites.

Flask: A web application framework written in Python.

AngularJS: An open-source web application framework written in JavaScript.

Apache Cordova: A mobile development framework written in JavaScript.

PostgreSQL: A database management system written in the C programming language.

Stakeholder: A person who will be affected by the outcome of Strome Infusions development.

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