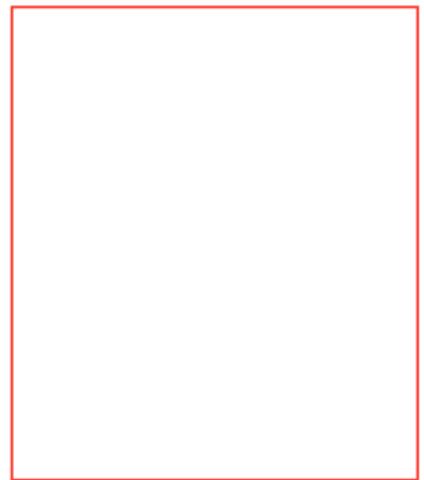


## **AWS Case Study: SEGA**

IST 420 - Team Project Milestone 5

20 November 2016



# Table of Contents

[Executive overview](#)

[Introduction](#)

[Background and Summary](#)

[Vision](#)

[Mission](#)

[Case Background](#)

[Organizational Background](#)

[Organizational Structure](#)

[Corporate Culture](#)

[Policies and Procedures](#)

[Stakeholder Analysis](#)

[External Stakeholders](#)

[Customers](#)

[Partners](#)

[Suppliers](#)

[Business Systems](#)

[Internal Stakeholders](#)

[Employees](#)

[Tools](#)

[IT Systems](#)

[Team Reflections](#)



[Summary](#)

[Milestones](#)

[Milestone 1: Overview](#)

[Milestone 2: Use-Case Diagrams](#)

[Milestone 3: Activity Diagrams](#)

[Milestone 4: Use-Case Descriptions](#)

[Milestone 5: Sequence Diagrams](#)

[Suggestions for improvements](#)

[References](#)

[Appendices](#)

[Appendix A: Use-Case Diagrams](#)

[Appendix B: Activity Diagrams](#)

[Appendix C: Use Case Descriptions](#)

[Use Case Description 1](#)

[Use-Case Description 2](#)

[Use-Case Description 3](#)

[Appendix D: Sequence Diagrams](#)

[Appendix E: E-R Diagram](#)

[Appendix F: Team MOU](#)

[Appendix G: Project Plan](#)

[Work Breakdown Structure](#)

## **Executive overview**

The Online Operations team at SEGA, a video game developer headquartered in Tokyo, is responsible for driving the development of cloud-based platforms for the company's western divisions and subsidiary studios, including the public website, various video game forum, and online game servers. The Online Operations team opted to use Amazon Web Services (AWS) as the cloud solution provider for SEGA as a result of the low barriers to entry and rapidly evolving feature set.

Migrating to AWS has evidently been quite an advantageous transition for the Online Operations team, yielding many benefits and advantages. In the future the team will continue to expand their usage of product from the AWS portfolio, including Simple Email Service (SES), Simple Queue Service (SQS), and CloudWatch. These technologies will continue to poised SEGA in a more strategic position to advance their vision and mission, as well as further the culture and values they have created.

## **Introduction**

SEGA has had a rocky history, struggling to maintain relevance as their flagship franchise, *Sonic the Hedgehog*, has gradually fallen from popularity in the past fifteen to twenty years. SEGA today is a dramatically different company than it was at its inception, with vastly different products, ideals, and vision.

## **Background and Summary**

After achieving widespread commercial success in the "golden age of arcade games," in the 1970s and 80s, and a profitable segue into the home console market in the 1990s and early 2000s, sales of packaged game have declined dramatically, both domestically and outside Japan in the 2010s. Since then, SEGA has left the home console market and made striking cutbacks in their Western businesses, as well as arcade centers, in order to focus on the growing digital game market for games on PC and mobile devices.

In 2008, SEGA made its mobile debut on the iTunes App Store with *Monkey Ball*, a mobile version of the popular SEGA classic of the same name. In the following eight years, SEGA dramatically reorganized their organizational structure in order to streamline operations and acquired a number of mobile development studios, reflective of the game company's new mobile gaming strategy.

Currently, SEGA has achieved measurable success in the mobile marketplace, with a variety of games of varying popularity on by the Android and Apple markets. Figure 1 shows SEGA's mobile gaming portfolio, as of February of this year.

New releases of more hit titles. Maintained solidified portfolio and laid groundwork



Figure 1 ; SEGA Mobile Portfolio

Although a number of titles, including *Sonic Runner*, which features Sonic, their flagship character, has failed to gain traction, many other games have been hits in international markets, as well as in the United States.

## Vision

The vision of the SEGA SAMMY Group, which encompasses SEGA Games, Entertainment Machines, and a resort business, is to “strive to enrich our society and culture” by “providing entertainment filled with dreams and excitement to people throughout the world.” Although this vision may be a broad representation of the SEGA SAMMY ideals, its values are still representative of the mission driving the SEGA Online Operations team and SEGA Games in this particular context. In striving to bring SEGA back to the forefront of gaming, the Online Operations team is bringing entertainment and excitement back to people around the world.

## Mission

The more specialized mission of the gaming segments of SEGA is to develop and publish video game software through multiple platforms. These platforms include home consoles, PC, and mobile. This comes from their shift from arcade gaming, to the home console market, to third party software development, to finally focusing on digital distribution of gaming software. While they have taken hits from recent failures in their popular *Sonic the Hedgehog* franchise,

they continue to compete in the digital gaming market, though not always successfully. In the future, it is the mission of SEGA to continue to establish itself as a serious contender in the mobile gaming market, as well as regain their position as a major market-share holder in the larger gaming community.

## Case Background

In response to current vision and mission of the new SEGA, the online operations team opted to use AWS. The decision to move to AWS comes from the need to create strategic advantage for SEGA, reduce costs, and help the business operate more efficiently. According to IT & Network Director for Online Operations, the AWS cloud “allows [them] to have flexibility in [their] deployments and scaling that traditional server hosting does not provide.”

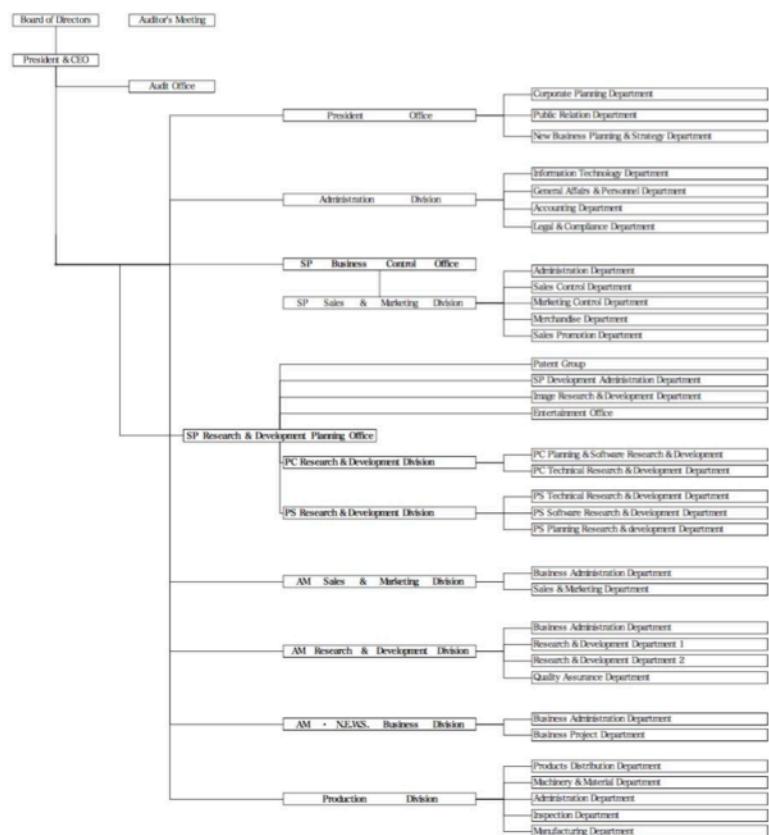
In migrating all of SEGA’s public websites to Elastic Compute Cloud (EC2) clusters and Simple Storage Service (S3) buckets, so as to leverage CloudFront and Amazon Relational Database Service (RDS), the Online Operations team is taking a strategic stance on web server architecture. By migrating to AWS, they are able to create competitive advantage by enabling rapid and dynamic server response to unplanned load spikes as well as regular traffic, all while reducing server costs by over 50%.

## Organizational Background

Despite undergoing a number of substantial reorganizations, SEGA has been consistent in the values and culture that drives their creation of high-quality products.

### Organizational Structure

Sega has eleven offices across the world with all employees sharing the same goal of setting new standards of interactive entertainment. As shown in Figure 2, SEGA’s structure is largely horizontal, with the various business areas and divisions almost reporting directly to the Chief Executive Officer (CEO). SEGA is headed by a board of directors, of which the CEO is also the President.



*Figure 2: Sega Organizational Chart*

In terms of development, SEGA employs approximately 2,000 developers across ten game studios. As shown in the chart in Figure 3, this accounts for 40% of the SEGA employee-base. 55% of the remaining 60% are operational management divisions, and the remaining 5% falls to business management.



*Figure 3: Company Breakdown*

## Corporate Culture

The company maintains a Japanese corporate culture that calls for achieving consensus. In this, the employees share the same set of assumptions, values, and beliefs. Sega has a well-developed corporate infrastructure focused around innovation. Although the atmosphere at Sega is fun and creative, the company holds a strict business-like culture. Despite having less of a homey atmosphere, all employees are interactive and encourage productivity. The culture also emphasizes ownership, creative freedom, and teamwork. "Sega is a hard-charging, entrepreneurial company that started life as an American firm serving U.S. occupation forces in Japan."

## Policies and Procedures

SEGA uses a corporate auditor system that directors can use their expertise in market trends, products, services, merchandise, and the industry as a whole to make quick and right decisions as the management environment changes. They appoint outside directors while strengthening the executive officer and audit systems in order to improve execution and oversight. Meetings among the Board of Directors occur every month to make decisions and report significant management issues. These issues are then discussed among the Board of Corporate Auditors. A chart showcasing the procedures can be seen in Figure 4.

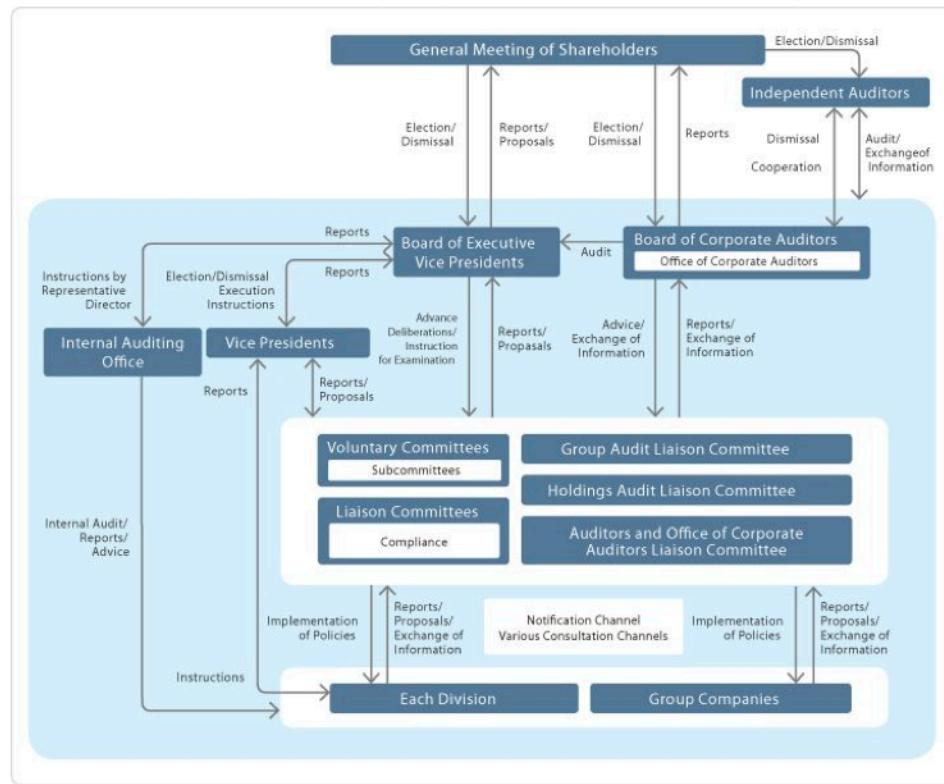


Figure 4: Governance Structure

# **Stakeholder Analysis**

Conducting a stakeholder analysis involves considering the actions, roles, and views of stakeholder, or actors, from a variety of internal and external perspectives.

## **External Stakeholders**

In viewing SEGA's business system from the outside, one must take on the view of a customer, partner, supplier, or another business system. Examples of these various outsider are as follows:

### **Customers**

Customers may include a girl who plays SEGA games on her phone, a college student who makes an in-app purchase on his SEGA game, or a dad who accesses SEGA content on his laptop. In addition to being the main source of revenue generation for SEGA, this category of user represents the primary consumers of SEGA media.

Customers like the girl and the college student demonstrate the use-case shown in Figure 5 in Appendix A. Customers like the dad are shown in Figure 6 in Appendix A.

### **Partners**

Partners may include a woman who works for a third party development studio and develops games for SEGA, a man who works for a marketing firm and creates online advertisements for SEGA games, or a researcher who is conducting market research on behalf of SEGA. However diverse, these partners' roles at SEGA strive to maintain or improve SEGA's market presence and marketability.

### **Suppliers**

Suppliers may include a representative from Amazon who is responsible for managing SEGA's AWS instances, a man who works at a power company and is responsible for SEGA's account, or a salesperson from a company that supplies SEGA with computers and other hardware. The role of these suppliers is to make sure that SEGA has the necessary resources to maintain business operation. AWS, specifically EC2, is represented in Figure 5, and RDS is represented in Figure 6 in Appendix A.

### **Business Systems**

Business systems may include the Google Play store, an analytics platform, similar to Google Analytics, or an HR/Financial System, similar to Workday. These business systems play the role of giving the SEGA business system access to additional tools and resources that are external to the organization, allowing SEGA to focus on priority business functions. The Google Play Store is represented in Figure 6 in Appendix A.

## **Internal Stakeholders**

While not necessary for the creation of a use-case diagram, it is still valuable to consider insider views for a more holistic understanding of the business system. When viewing SEGA's business systems from the inside, one must take on the view of employees, tools, and IT systems that are responsible for carrying out the business processes. Examples of these various insiders are as follows:

### **Employees**

Employees may include an android developer, a project manager, or the director of the Online Operations team. Employees role is to carry out the day to day functions of the business, as well as provide management and mission alignment.

### **Tools**

Tools may include Github, Skype for Business, or Office 365. The role of tools is to enable employees to carry out their jobs

### **IT Systems**

IT Systems may include the internal SEGA network, a company directory service system, or transaction management systems. The role of IT Systems is to interconnect the internal IT infrastructure.

## **Team Reflections**

I think that this group project did a great job augmenting the lecture material on UML diagramming and even served as a study tool for the exams. As far as applying lecture material in a group project, this case study project did a much better job than most team projects that I have participated in IST.

Our team worked really well together and got work done well ahead of the deadline, which is much more my style and can be hard to coordinate with a less motivated group. Everyone worked well and pulled together to create high quality milestone submissions.

The group did well in communicating and forming a good working relationship, which allowed us to easily complete all milestones without issues. The group collectively decided on a time to hold weekly team meetings outside of class, and doing so helped us work ahead of schedule as well as gave us time to discuss any issues. With *most* members being motivated to

do well and having a good relationship, it was easy to ask each other for help on areas that any of us struggled with.

The group has exceeded expectations with the amount of hard work they've performed and their determination to get things right. We were able to clarify material that we didn't understand with each other to create better deliverables. We effectively split up the work amongst each other to suit our strengths. Communication stayed open and consistent, especially when it came to things we didn't understand. Overall, I'm proud of the team and its accomplishments.

The group did an exceptional job at staying ahead of schedule, and making sure to have time to ask questions in class. In order to create deliverables that went above and beyond expectations, we met once a week to talk about our project, discuss the deliverable due, and talk about suggestions for improvement for the next deliverable. Each team member held up their duties, and were all very honest with each other. Also, we all had great communication skills, so that we could all understand what was expected.

## Summary

### Milestones

#### **Milestone 1: Overview**

For the first milestone, the team did a great job working together to split up work, create quality content and submit the finished document ahead of time. The toughest decision the team had to make was deciding which AWS case study to work with. After some deliberation, the team chose SEGA and the rest of the content fell into place quite easily. The team only required one meeting outside class to tackle background and summary, organizational background, policies and procedures, team MOU, and project plan.

#### **Milestone 2: Use-Case Diagrams**

The second milestone posed slightly more challenge to the project team, but it was nothing too difficult. The team spent some time apart to come up with potential use-cases and then came together in a team meeting to discuss and augment the use-cases. During this meeting, the members of the team finalized two sketches of business use-cases, leaving only the task of formalizing these sketches in Visio. This milestone was submitted on time with no problems.

### **Milestone 3: Activity Diagrams**

Milestone 3, the creation of activity diagrams, was not necessarily more difficult, but warranted more time spent together to complete the assignment. During in-class work time, the team broke up the assignment into parts and distributed them to the members of the team. By the next time we met in person, everyone had made progress on their parts. In the next meeting, we finished building out our diagrams. Prior to submitting, the diagrams were formalized in Visio and entered into the document. This submission cut a little closer to the deadline, but still managed to submit with a few hours to spare.

### **Milestone 4: Use-Case Descriptions**

Milestone 4 was significantly easier than some of the previous milestones. The team was slow to start, but met up outside class and made quick work of the three description forms. The team met once more to finish the documents up together before submitting.

### **Milestone 5: Sequence Diagrams**

The team had a very early start to Milestone 5, giving them plenty of time to distribute the workload, work alone outside class, and then convene in person to discuss progress and ask questions. The team met twice outside class in order to create a high-quality final milestone submission.

## **Suggestions for improvements**

- More clarity on the content for the various sections that we wrote, as well as more clarity on the outline of the overall document.
- Having even just one day in class to work on the team project was really helpful, if we could have had more of these that also would have been great.
- Being able to look at a final document from a previous class that is an example of a “good submission” would have been nice too.
  - Different examples of sequence diagrams would be useful since they seem to be the hardest to complete
- Clearer feedback on faults of the submission would help us to correct and improve our submissions

## References

Corporate Governance | SEGA SAMMY Group | SEGA SAMMY Holding (n.d.). Retrieved September 17, 2016 from <https://www.segasammy.co.jp/english/pr/corp/governance/>

Group Overview | SEGA SAMMY Group | SEGA SAMMY HOLDINGS. (n.d.). Retrieved September 18, 2016, from <https://www.segasammy.co.jp/english/pr/corp/ol.html>

Hogfather, A. (2016, February 8). Sega: Sonic Runners is a Failure. Retrieved September 15, 2016, from

<https://www.sonicstadium.org/2016/02/sega-sonic-runners-is-a-failure/>

Kent, S. L. (2001). *The ultimate history of video games: From Pong to Pokémon and beyond: The story behind the craze that touched our lives and changed the world*. Retrieved September 15, 2016, from

[https://books.google.com/books?id=PTrcTeAqeaEC&pg=PT459&lpg=PT459&dq=organizationa+l+culture+at+sega&source=bl&ots=amIp7a3Tab&sig=aOvrn0tdUaxby9bRRh1g--uD0G4&hl=en&sa=X&ved=0ahUKEwjskuCEm4\\_PAhXG6SYKHc-ICSSQ6AEISjAI#v=onepage&q=organizational%20culture%20at%20sega&f=false](https://books.google.com/books?id=PTrcTeAqeaEC&pg=PT459&lpg=PT459&dq=organizationa+l+culture+at+sega&source=bl&ots=amIp7a3Tab&sig=aOvrn0tdUaxby9bRRh1g--uD0G4&hl=en&sa=X&ved=0ahUKEwjskuCEm4_PAhXG6SYKHc-ICSSQ6AEISjAI#v=onepage&q=organizational%20culture%20at%20sega&f=false)

## Appendices

### Appendix A: Use-Case Diagrams

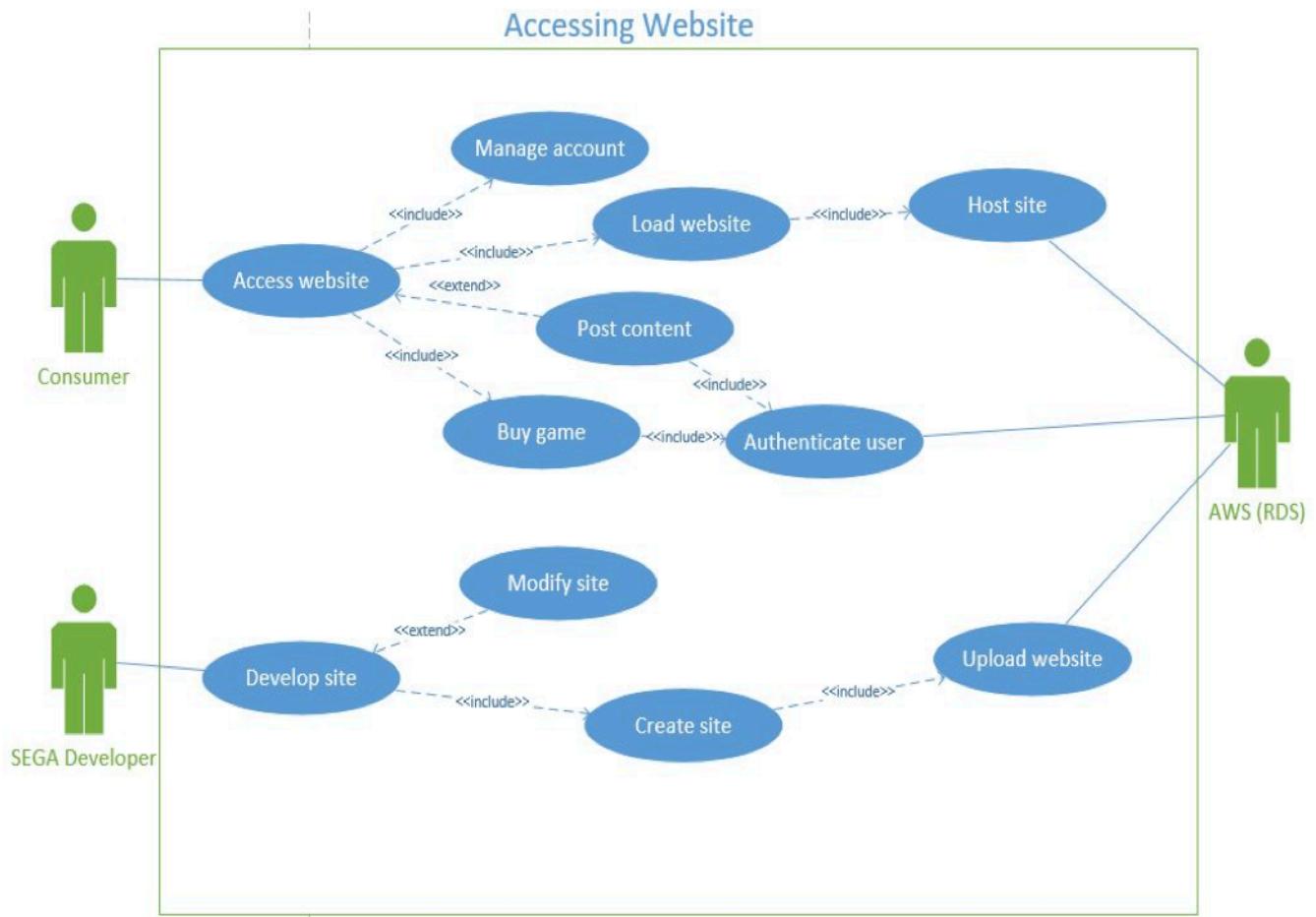


Figure 5: Game Access Relational Database System

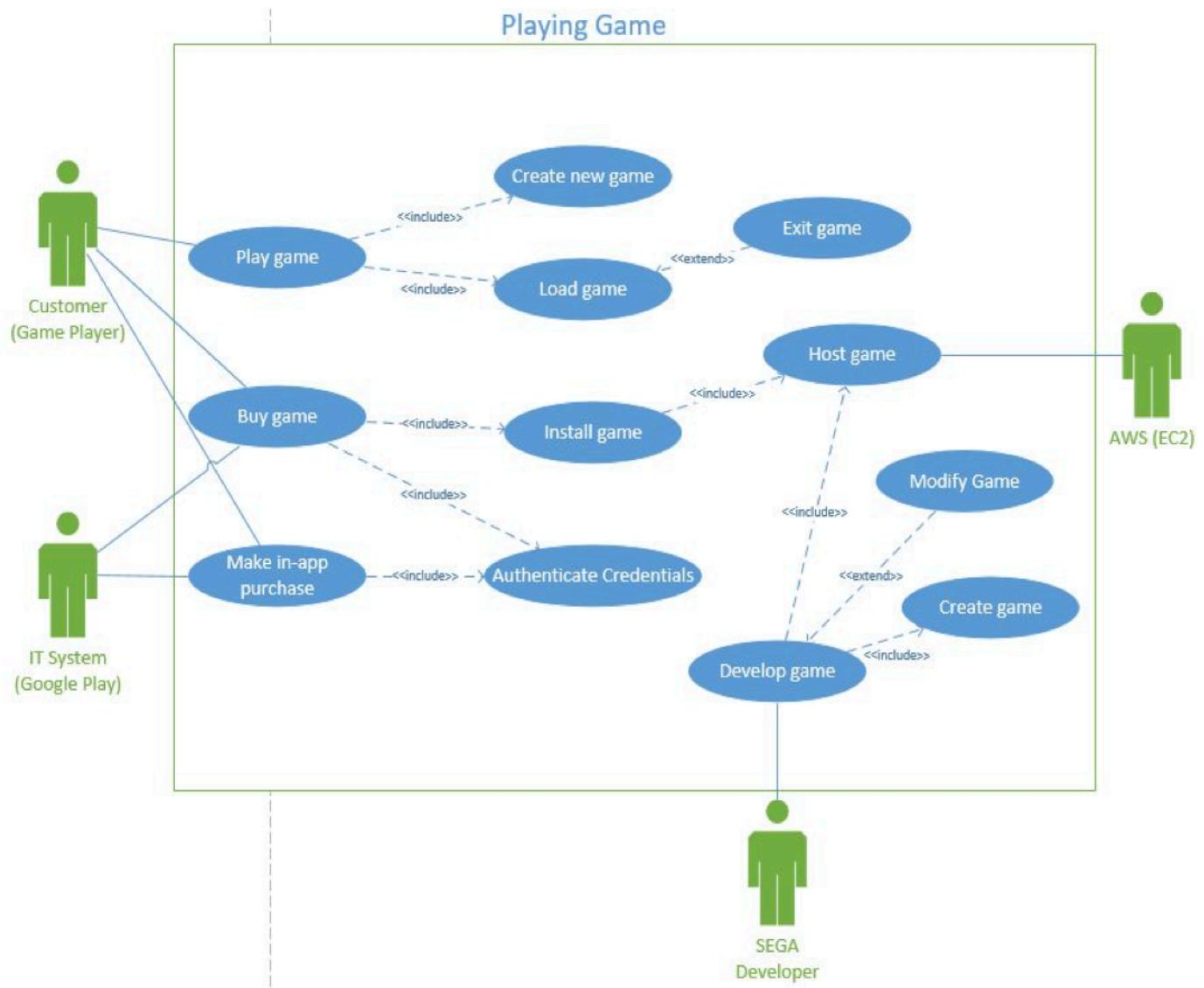


Figure 6: Website Access Elastic Cloud System

## Appendix B: Activity Diagrams

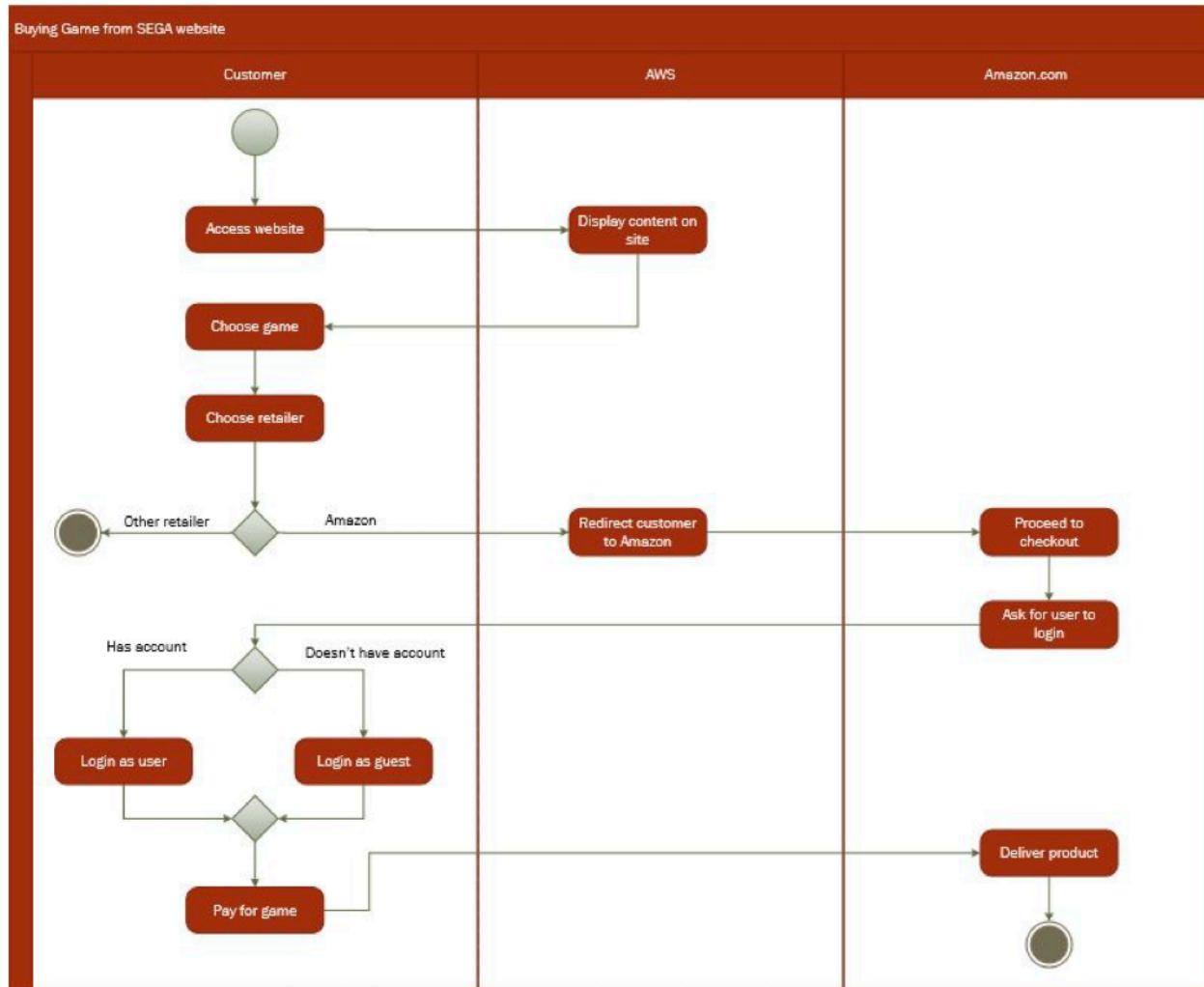


Figure 7: Buying Game from Website

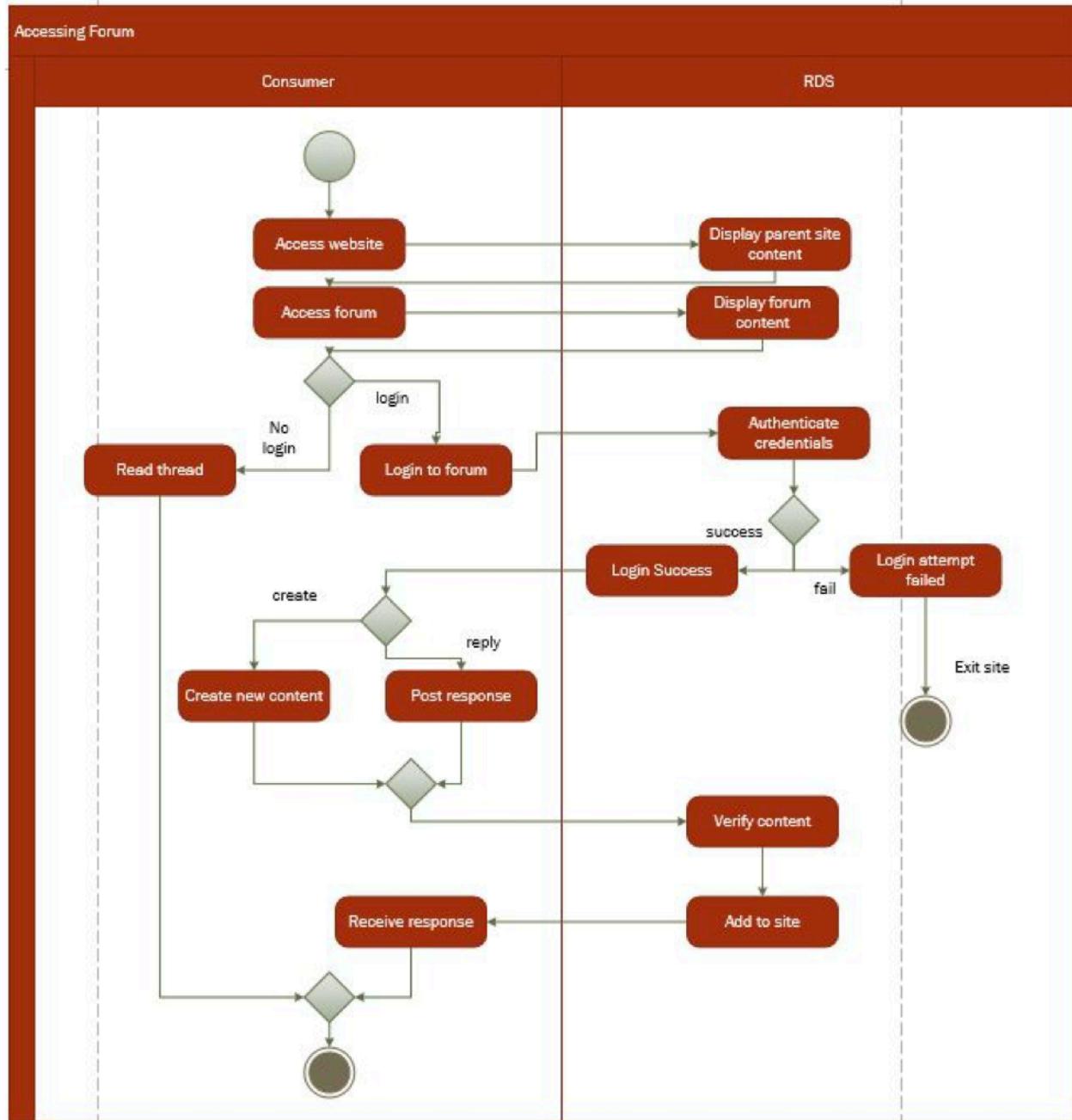


Figure 8: Accessing and Posting to Forum

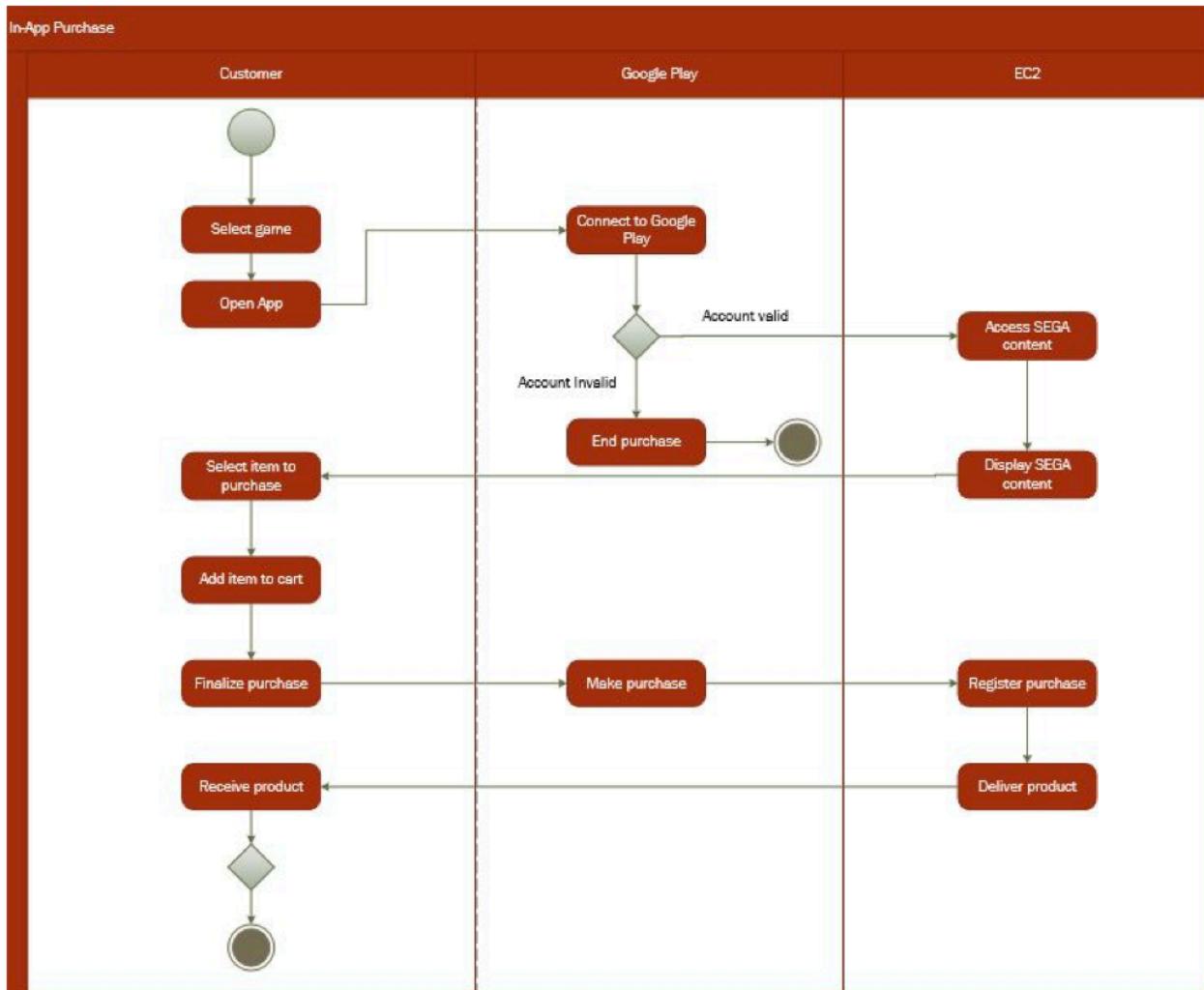


Figure 9: Making an In-App purchase

## Appendix C: Use Case Descriptions

### Use Case Description 1

<b>Use Case Name:</b> Buy Game	<b>ID:</b> 1	<b>Importance Level:</b> High		
<b>Primary Actor:</b> Customer				
<b>Stakeholders and Interests:</b> <b>Customer:</b> Wants to buy a game from the website <b>SEGA:</b> Wants customers to purchase their game <b>Amazon:</b> Wants to sell a game <b>AWS RDS:</b> Wants to host website for customers to view content				
<b>Brief Description:</b> This use case describes how a customer can buy a game from the website				
<b>Trigger:</b> Customer wishes to purchase a game from the website <b>Type:</b> External				
<b>Relationships:</b> <b>Include:</b> Install Game, Authenticate Credentials <b>Extend:</b> (N/A)				
<b>Normal Flow of Events:</b> <ol style="list-style-type: none"><li>1. Customer accesses website</li><li>2. Amazon Web Services displays content on site</li><li>3. Customer chooses game</li><li>4. Customer chooses retailer<ol style="list-style-type: none"><li>a. Customer chooses Amazon as retailer</li></ol></li><li>5. AWS redirects customer to Amazon</li><li>6. Amazon.com allows the customer to proceed to checkout</li><li>7. Amazon.com asks user to log in<ol style="list-style-type: none"><li>a. If a user has an account, the S-1: User has Amazon Account is performed</li></ol></li><li>8. RDS authenticates the credentials<ol style="list-style-type: none"><li>a. If the authentication fails, and the user does not have an account, the S-2: User does not have an Amazon Account is performed</li></ol></li><li>9. The customer pays for the game</li><li>10. Amazon.com delivers the product to the customer</li><li>11. Customer receives the game</li></ol>				
<b>SubFlows:</b> <b>S-1: User has Amazon Account</b> <ol style="list-style-type: none"><li>1. User logs in with establish credentials for Amazon</li></ol> <b>S-2: User does not have Amazon Account</b> <ol style="list-style-type: none"><li>1. User logs in as a guest</li></ol>				
<b>Alternate/Exceptional Flows:</b> <b>4, a1:</b> Customer uses a different retailer for purchase				

## Use-Case Description 2

<b>Use Case Name:</b> Post Content	<b>ID:</b> 2	<b>Importance Level:</b> Low		
<b>Primary Actor:</b> Customer				
<b>Stakeholders and Interests:</b>				
<p><b>Customer:</b> Wants to view or post response to a chain or create new content.</p> <p><b>SEGA:</b> Wants customers to have discussions about their games.</p> <p><b>AWS RDS:</b> Wants to host website for customers to post and view content.</p>				
<b>Brief Description:</b> This use case describes how a customer creates a post on the SEGA Forum.				
<b>Trigger:</b> Customer visits SEGA site and then proceeds to the forum website to view/post content. <b>Type:</b> External				
<b>Relationships:</b>				
<b>Include:</b> Authenticate user <b>Extend:</b> Access website				
<b>Normal Flow of Events:</b>				
<ol style="list-style-type: none"> <li>1. Customer accesses SEGA's website</li> <li>2. RDS displays contents of SEGA's website</li> <li>3. Customer accesses forum from SEGA website</li> <li>4. RDS displays the contents of the forum website</li> <li>5. Customer chooses to read or post:           <ol style="list-style-type: none"> <li>a. If the customer wants to only read the content on the forum, the S-1: no-login subflow is performed</li> <li>b. If the customer wants to post to the forum, the customer will login with existing credentials</li> </ol> </li> <li>6. RDS authenticates the user credentials           <ol style="list-style-type: none"> <li>a. If the authentication fails, the S-2: login attempt failed subflow is performed</li> <li>b. If the authentication succeeds, the customer proceeds with the process</li> </ol> </li> <li>7. Customer posts to forum:           <ol style="list-style-type: none"> <li>a. If the user wants to create a new forum thread, the S-3: create content subflow is performed</li> <li>b. If the user wants to post a response, the S-4: post response subflow is performed</li> </ol> </li> <li>8. RDS verifies the content created by customer</li> <li>9. RDS adds the post to the forum website</li> <li>10. Customer receives a response</li> </ol>				
<b>SubFlows:</b>				
<b>S-1:</b> User does not log in <ol style="list-style-type: none"> <li>1. User only reads the content within the threads on the forum</li> <li>2. User exits once they have finished reading</li> </ol>				
<b>S-2:</b> Customer login attempt fails <ol style="list-style-type: none"> <li>1. User exits website</li> </ol>				
<b>S-3:</b> Customer creates new content <ol style="list-style-type: none"> <li>1. User creates a new thread for others to respond to</li> </ol>				
<b>S-4:</b> Customer posts response				

- |  |
|--|
| 1. User posts a response to a thread that already exists |
|--|

**Alternate/Exceptional Flows:**

**S-1, 1a1:** User can log in if they wish to post

**S-2, 1a1:** User can reset password or other credentials

**S-2, 1a2:** User can create a new account and authenticate

### Use-Case Description 3

<b>Use Case Name:</b> Make In-App Purchase	<b>ID:</b> 3	<b>Importance Level:</b> Medium		
<b>Primary Actor:</b> Gamer (Customer)				
<b>Stakeholders and Interests:</b>				
<p><b>Game player:</b> Wants to purchase additional mobile game content on cell phone.</p> <p><b>Google Play Store:</b> Wants to orchestrate transaction between game player, SEGA, and EC2.</p> <p><b>SEGA:</b> Wants to sell in-app content</p> <p><b>AWS EC2 Instances:</b> Wants to serve in-app content to game player.</p>				
<b>Brief Description:</b> Making an “in-app purchase” involves purchasing additional content while playing a game. In-App purchases are a revenue source for SEGA and a source of additional content for the customer.				
<b>Trigger:</b> Game player selects and opens SEGA mobile game on phone <b>Type:</b> External				
<b>Relationships:</b> <b>Include:</b> Authenticate Credentials <b>Extend:</b> (N/A)				
<b>Normal Flow of Events:</b> <ol style="list-style-type: none"> <li>1. Game player selects game and opens app corresponding to game selection             <ol style="list-style-type: none"> <li>a. Execute the Make In-App Purchase use-case</li> </ol> </li> <li>2. Google Play store authenticates game player’s credentials             <ol style="list-style-type: none"> <li>a. If the game player’s credentials fail to authenticate, S-1: End Purchase subflow is performed</li> </ol> </li> <li>3. Google Play store accesses SEGA content from EC2 instance and EC2 displays the SEGA content to game player</li> <li>4. Game player selects item to purchase and adds item to cart</li> <li>5. Game player finalizes purchase</li> <li>6. Google Play store carries out purchase</li> <li>7. Google Play store registers purchase with EC2 and EC2 delivers SEGA content to game player</li> <li>8. Game player receives purchase item</li> </ol>				
<b>SubFlows:</b> <b>S-1: End Purchase</b> <ol style="list-style-type: none"> <li>1. Google Play ends the transaction</li> <li>2. Game player can attempt to reauthenticate</li> </ol>				
<b>Alternate/Exceptional Flows:</b> <b>S-1, 1a1:</b> SEGA mobile game crashes <b>S-1, 1a2:</b> Game player adds item to cart and abandons purchase				

## Appendix D: Sequence Diagrams

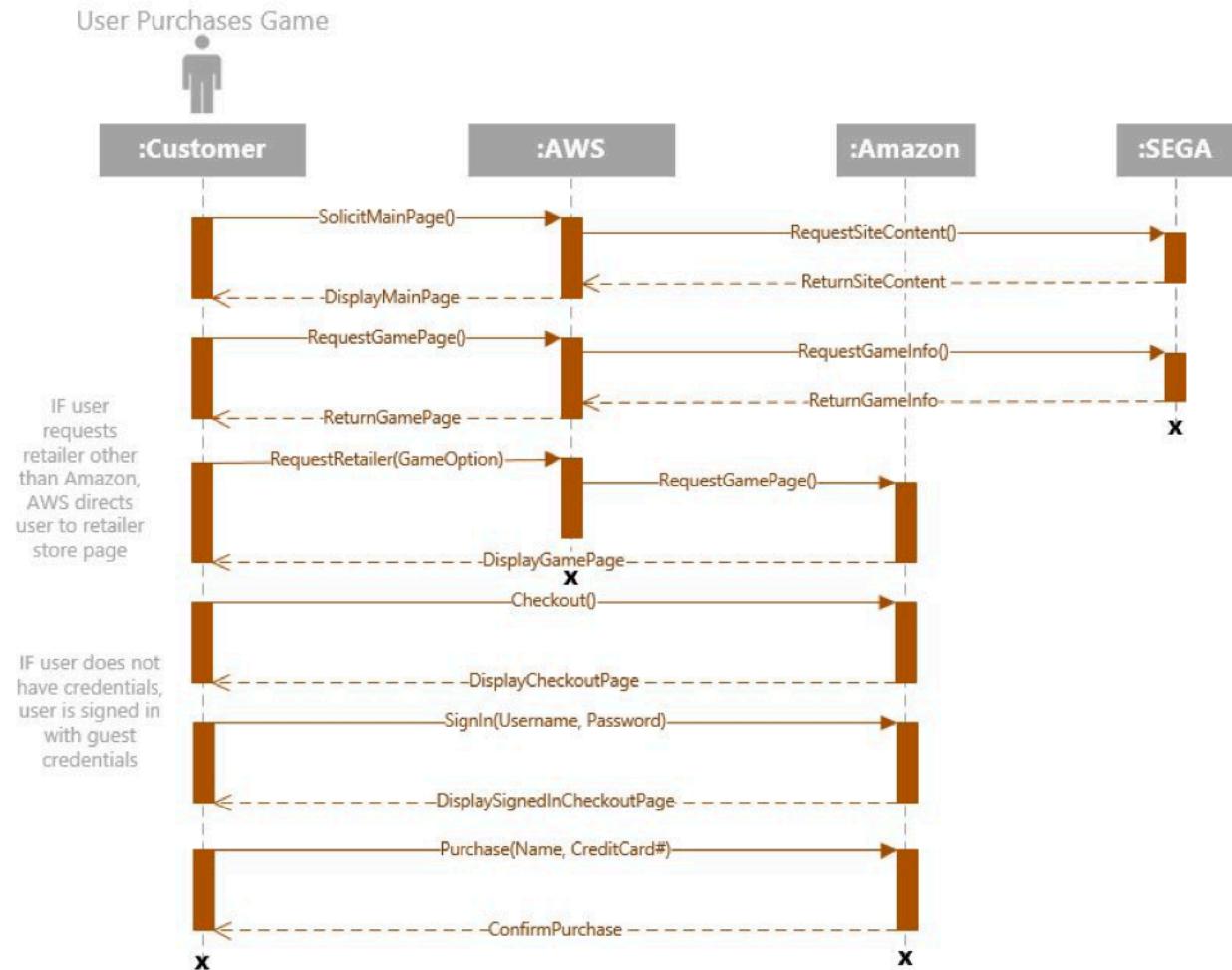


Figure 10: Buy Game Sequence Diagram

## Posting to Forum

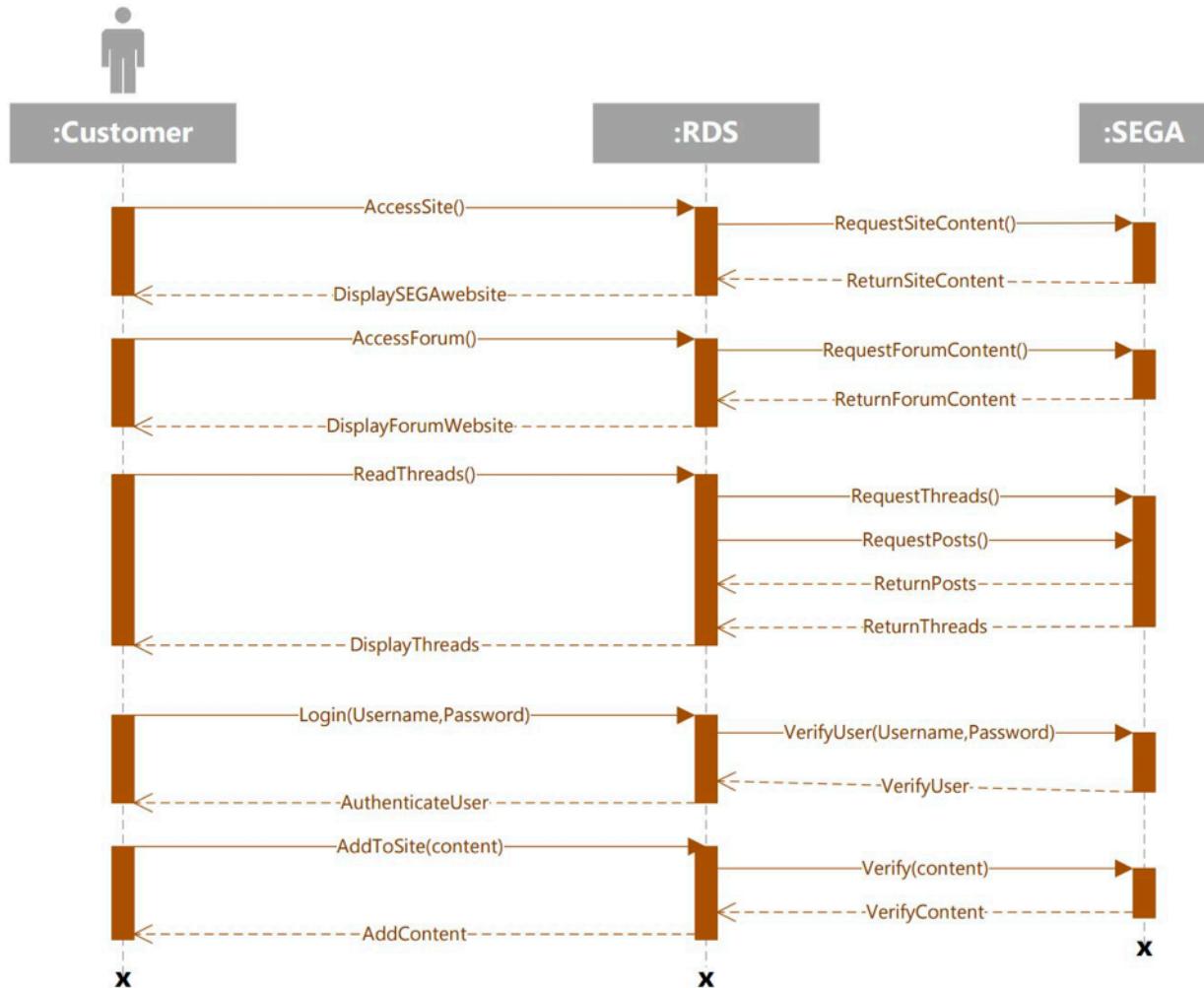
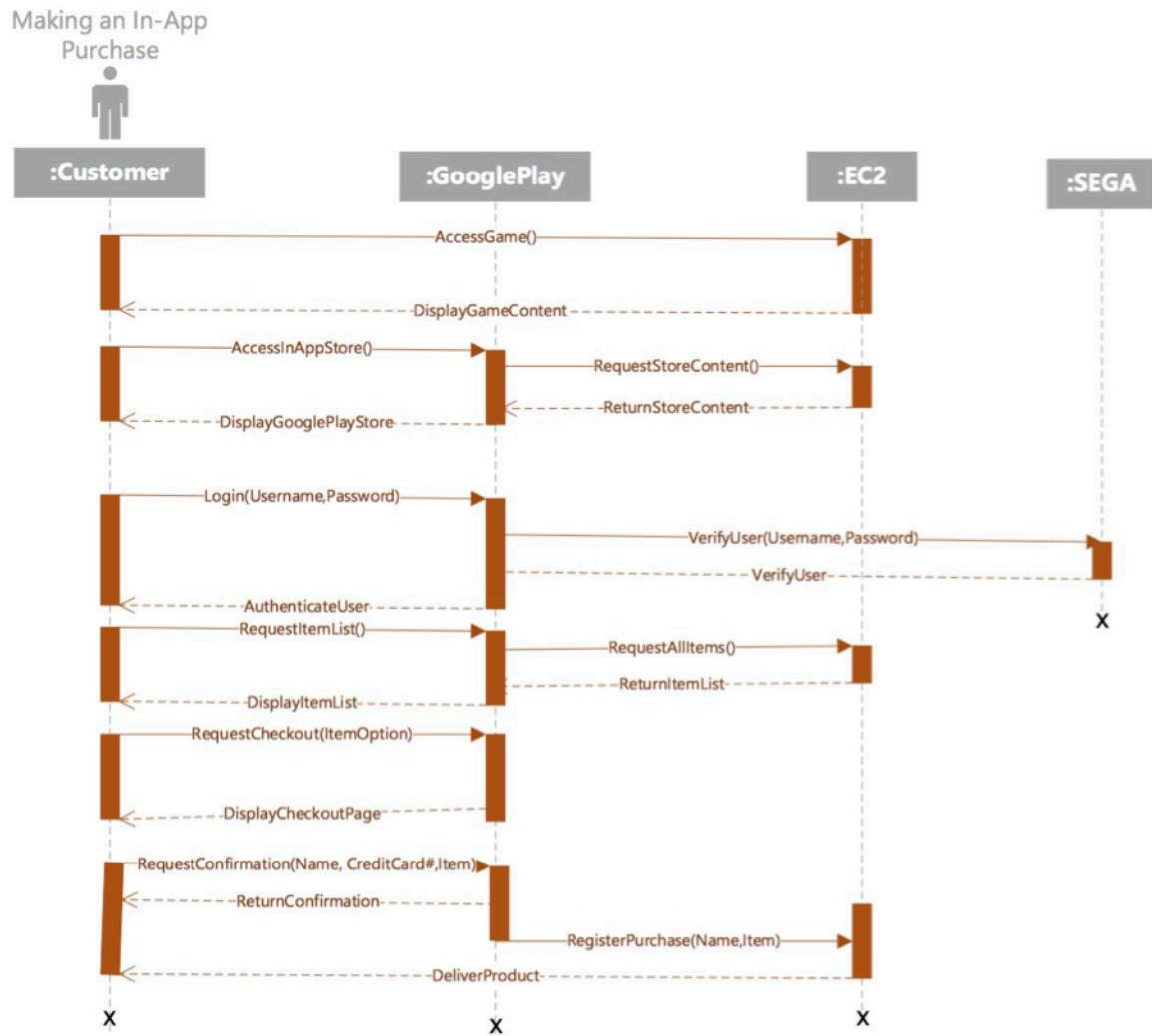


Figure 11: Post to Forum Sequence Diagram



*Figure 12: Make in-app Purchase Sequence Diagram*

## Appendix E: E-R Diagram

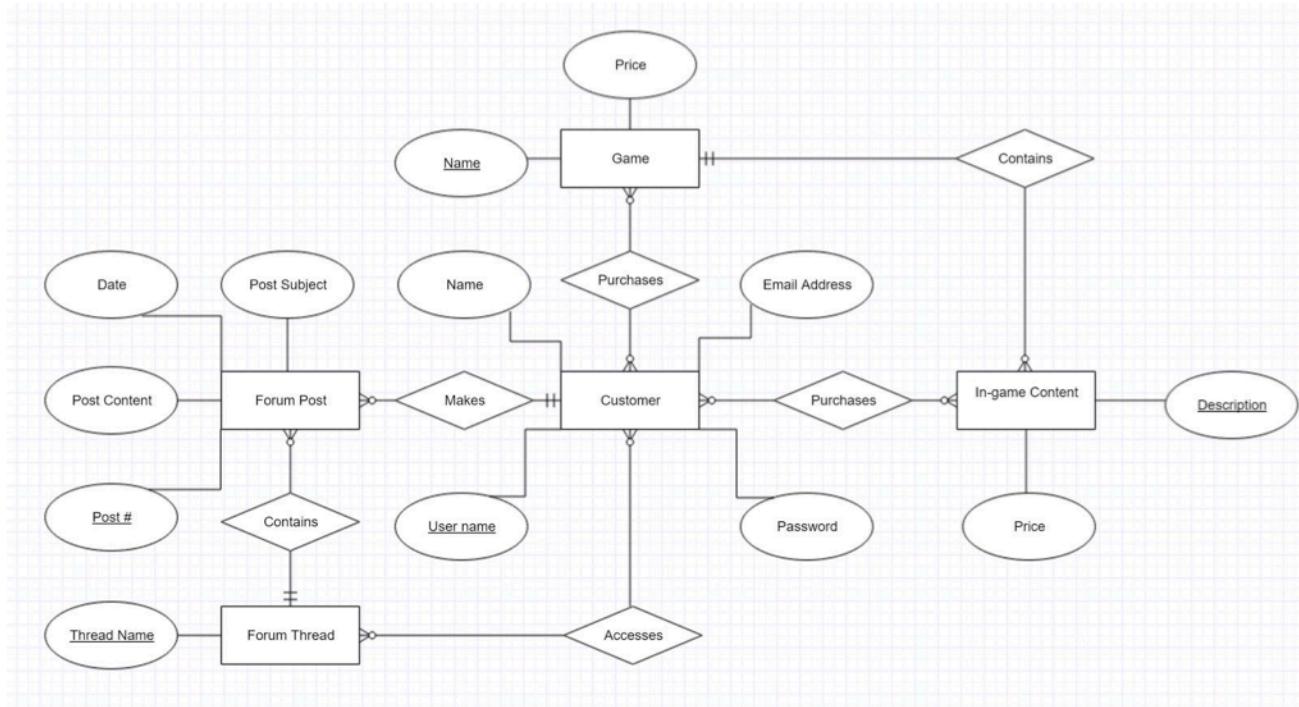


Figure 13: SEGA ER Diagram

## Appendix F: Team MOU

**Project Title:** AWS Case Study: SEGA

**Project Sponsor:**

**Project Team:** Team 1

**Date:** 18 September 2016

**Team Members:**

Name	Phone Number	Email	Role
<input type="text"/>			Team Scribe
<input type="text"/>			Submission Leader
<input type="text"/>			Project Leader

	Team Facilitator
--	------------------

**Meeting schedule:** Meetings will last approximately one hour and take place on Thursdays at 5 pm, and at other times if absolutely necessary. Meetings will take place at the Au Bon Pain Cafe in IST, or elsewhere as determined in the team GroupMe.

**Meeting guidelines and expectations:** All members should attend meetings prepared for discussion. Each meeting will have a set agenda that will serve as a guideline for the meeting. Goals are expected to be set and met per meeting. All members are expected to attend each meeting unless excused; If a member is excused, all other members must catch them up on what they missed, in order for everyone to be on the same page.

**Commitments Section:** The purpose of the project is to gain an understanding of the “holistic approach towards the development and integration of an enterprise system” through the completion of five milestones. The team assumes that the project will be completed in 10 weeks.

**Participation:** All members are expected to contribute an equal amount of effort and participation. Members must contribute to the project milestones as well as discussions in meetings.

**Communication:** Outside of the classroom, members will communicate via GroupMe and must respond within 24 hours. Members must brief with one another at least once a week to have a general understanding of the goals for the upcoming milestones.

**Decision Making :** All members are encouraged to give input to any decision that affects the course of the study, no matter how small. The majority of the group holds the final word on any decision. Split decisions will be handled by the winner of a Mario Kart race.

**Conflicts:** In the case of extreme conflict within the group, a discussion with the project sponsor will be held to help resolve the conflict. Should a breach of contract occur from an individual, a meeting will be held with the project sponsor to decide the appropriate course of action.



## Appendix G: Project Plan

### Work Breakdown Structure

Milestone	Deliverable	Team member	Due Date
Milestone 1	Executive Overview		9/18/2016
	Organization Background (summary/vision/mission)		9/18/2016
	Organizational Chart/Culture Summary		9/18/2016
	Policies and Procedures		9/18/2016
	Team MOU		9/18/2016
	Project Plan		9/18/2016
	Table of Contents		9/18/2016
Milestone 2	Stakeholder Analysis		10/2/2016
	Research		10/2/2016
	Use Case Diagrams		10/2/2016
Milestone 3	Research		10/16/2016
	3 Activity Diagrams		10/16/2016
Milestone 4	3 Use Case descriptions		10/30/2016
Milestone 5	Sequence Diagram 1		11/20/2016
	Sequence Diagram 2		11/20/2016
	Sequence Diagram 3		11/20/2016
	E-R Diagram		11/20/2016
	Milestone Summary		11/20/2016
	Suggestions for improvement		11/20/2016

This is our potential outline of who will be completing each deliverable. If need be, changes will be made depending on the circumstances, and all group members will review the entire document before it is submitted.