

## Emma, Inc. MECOP Report

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## Emma

Emma, Inc. specializes in providing services and tools for email marketing. Our clients range from small to moderate sized companies and organizations across the world. Some of our features include custom email templates, email tracking, agency and sub account functionality for large customers, and data organization and analytics on sent emails.

Emma was launched in Nashville, Tennessee in 2003 and has since opened satellite offices in Portland, New York City, and Melbourne. Emma is very well known for their quirkiness and excellent customer service. The name Emma is a creative incorporation of the acronym for email marketing and is represented by a smart and eccentric woman named Emma. The company feels startup-ish and is a fun place to work. Emma hosts events in Nashville and Portland, gets involved with the community and gives back throughout the year.

The Portland office has fluctuated between having five employees to eight employees while I've been here. Half of our office is made up of customer support staff and the other half is made up of developers and an on boarding specialist. It is definitely the smallest company that participated in MECOP. Our office is in East Portland, overlooking the Burnside Bridge. The office is open, dog friendly, and has a kegerator. Frequently, employees from the Nashville office will visit Portland and work in the office around some vacation days or will come fully for business. This summer and fall I met seven employees from Nashville!

My role at Emma is a software engineering intern. I attend the same meetings and work out of the same ticket pool as other engineers. The team structures at Emma feel very peer-to-peer, we report and ask questions to a product owner on our team, but we don't necessarily operate in a reporting structure. My mentor, Chad, is another developer who has mostly worked in different teams than me. He started at Emma as a MECOP intern. The heads of Engineering are the Director of Engineering, Scot Clausen, and the VP of Engineering, Jason Bynum.

When I initially started at Emma, we practiced scrum methodology but we have moved away from that process during my internship. We now work more independently to manage ourselves. I was on a team that had a standup meeting every morning where we talked about what we did the day before and what we planned to do that day. On that same team we reduced our stand up meetings to be weekly after moving away from scrum practices. On my most recent team, we don't do standup meetings because I'm in a group of 3 and we have so much communication that it isn't necessary. I also have learned to use different services such as Jira, Bamboo, and Confluence to manage work.

I attend two regular meetings that alternate every week. One shares the state of the company and project information from all of the different departments of Emma. The other meeting is engineering specific and sheds light on the status of our projects and sometimes showcases demos of new work. We also discuss our tech radar, tools, and other engineering information.

## All of the Projects

### On boarding

- Environment set up
- Play a game of pong
- Python review
- Bug: eda-scheduler replay dead letter queue
- Git Review
- Introduction email
- On boarding lessons
- Technology review

### EmmAdmin

- Kill old links
- Learn Hapi
- Build agency toolbar using hapi that connects to eda services

### Support Dev

- Bug: html content editor bug
- Test: updated the original content test to test strings that look like HTML code
- Bug: changing billing plans
- Bug: deleting content blocks in code view will delete all of the content
- Bug: update CodeMirror
- Bug: sending a campaign from a sub account will default sender information to the agency instead of the current sub account
- Test: created a mock campaign with fake data for all of its attributes; test if the function returned the correct campaign data after going through the function I updated
- Possible bug discovery: sign up forms function was never getting called
- Bug: social sharing posts aren't posting to Twitter

### MECOP Assignments

- Presentation
- Mid-term Appraisal
- Report
- Final Appraisal

## Executive Project Summary

I worked on two major projects as an Emma intern; I was on the EmmAdmin team and Support Dev team. I contributed to a new admin site for the EmmAdmin team and fixed several bugs while on the Support Dev team.

The project for a new EmmAdmin application came out of wanting our support and sales teams to use an application that is as advanced as the application that our customers

use. The old EmmAdmin is outdated, unintuitive, and could use more functionality and give information to clients that are confused or having an issue with the application. Having a more updated EmmAdmin would also help sales and customer support do their jobs with more ease!

Because this project was newly conceived, there weren't a lot of existing plans before the team was created. After researching and going to meetings about what support and sales would need in a new application, my team did some back end planning about what we should build.

My first task on this team was to trash all of the unused elements from the current admin site. I also made copy changes by rewording some links and dropdown menu items to clear up the language and make the old site more usable.

Next, I worked with my team on developing a new toolbar for admin privileges using Hapi. One of our goals for the toolbar was to indicate an informative status on the toolbar if mailings are behind or working slower than expected.

The process this team worked in was interesting because it was very iterative and very developer led. This project, unlike most teams, didn't have a plan from a designer at the beginning of the project. This project was very hands on in regards to planning and developing a new feature. I learned a lot early in my internship going to daily planning meetings and doing a lot of paired programming right off the bat.

Halfway through my internship, Engineering at Emma refocused to revisit and improve existing features. From what I have seen in highly iterative development, projects often are called finished, even if they are missing functionality or are deployed to production unpolished. Many teams during the second half of my internship implemented better functionality for things like importing contacts and uploading images.

I was recruited to work on support dev bugs, which gave me experience touching a lot of the Emma app code. I worked on bugs mostly within the drag and drop editor.

Most of the bugs reported came from customer reports. These bugs felt good to fix because they directly impacted the customers that had complaints or confusion over these issues and I was able to resolve them to make their experience using Emma better.

On the support dev team, I was able to consult senior developers who worked within the same part of the application as I was. Talking to other developers is really helpful to quickly resolve issues and for me to learn more about why someone might have wrote code the way they did. I learned a lot on this team because I got information from several different engineers and touched a lot of the code base. Some of the bugs I fixed on this team included:

If a customer wrote an email that contained special characters such as a right angle bracket, ">", the web view of a mailing would break and the text inside of a description tag would display at the top of the web view.

I paired with my mentor Chad to resolve the problem where a customer didn't have the ability to change their billing plan. Making selecting different plans viewable as a customer and making the effective change happen in Salesforce resolved this.

While creating an email in the drag and drop editor, you have the option to code your own mailing which allows you to code HTML that we render for your mailing. If you choose a default template and switched from the drag and drop editor to the HTML editor, you will see the HTML that made up that default template. If a user decided to partially delete blocks of HTML and JSON code, the campaign would render the HTML by stripping incomplete blocks. This caused customers to lose email content unintentionally. I solved this problem so that a partial block would stay in its entirety unless fully deleted in the HTML or the drag and drop editor.

We use the library CodeMirror in our campaign editor. The version we were using was causing problems when you clicked in certain parts of the editor. On some lines, you could not highlight, edit, or delete text. Updating to a newer version resolved those issues.

Emma has two major types of customers: Pro and Agency accounts. Pro accounts are standard and typically have one or few users that share an account for a smaller company. Agency accounts are parent accounts that have several sub accounts. Some of our agency customers include universities, which have sub accounts for their different departments such as athletics, their different colleges, student housing, etc. An agency account can make campaigns and share them with their sub accounts to send. An agency would want to do this if they wanted to create a specific template or content that they wanted to be the same across all of their sub accounts. When an agency created a shared campaign, there was a problem where when they created and shared a campaign, it was setting the default sender information to the agency and passed that to the sub account. Customers working from a sub account would then have to change the default sender information for all shared campaigns they sent. I fixed this bug by not setting default parent information when a shared account was being created so that information didn't get passed to any sub accounts.

This bug was challenging for me to test because I had little experience writing tests, especially in a web development setting with many libraries and data that needed to be included or mocked out. After finding where I should write tests for the change I made in the above bug, I found that no tests had been written to test the function I had updated. I ended up asking my mentor for help because I wasn't quite understanding the steps I needed to take in order to create a session, mock data, and set return values. I learned a lot from writing this test and am really glad I ended up writing the test with the help I got. I now have a lot more of an understanding about how to write a similar test and how to test the editor with data in general.

I really enjoyed being on the support dev team because it gave me a lot of experience. I was originally apprehensive about being on a team with only one other developer who was also new to Emma. This team also gave me the opportunity to reach out to the Nashville developers more than ever since no one on my team was in the Portland office.

## Thanks Emma

I learned a lot from Emma during my internship. I gained experience with web development, more than I could have from school. I learned how to use several different frameworks and how to sandbox with a major web service locally. I learned how to set up the local environments and machines I used. I learned my way around new languages and IDEs. I also gained a lot of experience with git and source control in general.

Learning how professional processes work was extremely helpful because I gained a lot of real world development knowledge. It has been very challenging to contribute to a large and complicated code base, but after learning the process it came more naturally. I learned how to do code reviews, how tickets work, and other various processes that are necessary to develop in the real world. I also earned more about how companies use cloud servers to manage their code base. I feel like I learned so many things that weren't about writing code, but all of those things have made me a much better engineer and problem solver.

I also learned how to work "remotely". Although I was in the Portland office, my team members weren't local for the most part. There was also only one other developer in the office for most of my internship. All of my official meetings were through apps like GoToMeeting or Google Hangout. I also used ScreenHero a couple of times when I was getting my computer set up and for troubleshooting local issues. Working remotely is a lot more independent work but has made me reach out to ask questions and think about the problem more before asking my neighbor if they could weigh in on an issue.

Emma benefited from my work because I was able to fix and test several issues in their code base. I also brought a new perspective to my teams. I fixed several bugs that got left behind when new teams were created and refined features that didn't quite function correctly. By working in two different areas of Emma with preexisting code, I learned a lot about the applications themselves and saw a lot of examples, which made jumping into development much easier. I also got a lot of experience talking with other developers by asking about how their code worked or asking where a particular functionality was in the code base. I was able to work in many different areas of the code and better understood the organization of the code. I also posted a ton of awesome music in our #jamz channel on Slack.

Working at Emma was a great experience and I gained knowledge and skills that I will carry with me for the rest of my career as a software engineer!

## Buzz Words

AC – Acceptable Criteria

API – Application Programming Interface

AWS/S3 – Amazon Web Services, a cloud storage service

Bamboo – a continuous integration system that runs tests for each branch of Emma before deployment.

CR – Code Review, the process of reviewing your code by another developer who is familiar with the code base

Django – Python Framework for web development

EDA – Event Driven Architecture, a framework where events cause the system to react with changes

Emmaricans – Emma employees

Fabric – a Python tool for deployment

Grunt – a JavaScript task runner (similar to Make but for JavaScript)

Hapi – JavaScript framework for creating servers

Jira – Issue tracking software by Atlassian – we used it for managing tickets and it connects to Github!

Node – Platform for building scalable network applications

PO – Product Owner

PR – Pull Request, a request to merge the development branch with your commits for a ticket into the sprint branch or into master.

Prod – the actual code on production that our customers use

Scrum – a development process that incorporates agile practices

Trello – Similar to Jira but does not sync with tickets on github

QA – Quality Assurance, testing the code works and that it didn't break other parts of the application

VM – Virtual machine, a machine that runs different code than prod on your machine