Rainbow Records Website Redesign

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Executive Summary

Main problem

Currently, Rainbow Records has two key issues: an outdated website which has poor search functions and a lack of mobile accessibility, and a lack of communication between the website and the warehouse database, which is leading to order backlogs; both of which are incurring a large loss of profit. In order for Rainbow Records to remain profitable and expand in the future, both issues must be resolved.

Final solution

Firstly, we will be doing a full website redesign to enable responsive design for mobile devices, which will be done using Node.js and Express as the framework, and AWS (Amazon Web Services) as the host.

Secondly, we will use the SQL (Structured Query Language) database in your warehouse and connect it with the website hosted by AWS and integrate the two together, which will enable products to be processed more efficiently, without the need to print out each orders shipping details, which will in turn reduce the product backlog.

Schedule

The whole project will take 18 weeks from start to finish. This is enough time for us to ensure that you get a simple, robust, and modern website that solves all the issues that the users have been having with your current website. It gives us time to thoroughly plan around all the problems, get enough feedback from the company and test the solution for anything that is lacking.

Moreover, this time period is also competitive and short enough that your company will have a functioning website for future growth.

Results

After this project is completed, we expect users that visit the website to have a much better overall experience, due to the revamped UI/UX and responsive design, and for users to also have a much quicker turnaround for their orders due to the added connection between the warehouse database and the main website. All these factors combined, will lead to a substantial increase in profits, and will provide growth for the company in the ecommerce space.

Introduction

This proposal presents our plan to redesign and launch a website for your business that lets you streamline your warehouse ordering workflow and allows your customers to use any devices to access your website to place orders.

History of current website

The existing website for the shopping portal was designed in 2008. The focus at that time was to increase the presence of the growing retail store. During recent years, due to the COVID-19 pandemic, the website traffic has rocketed, making it one of the major sources of revenue for Rainbow Records with customers accessing it from throughout the world.

Current key issues:

Lack of accessibility from modern devices

Due to newer devices being created and continuous upgrades to technology in general, older technologies are losing support- such as Rainbow Records current website. Since the website was originally designed back in 2007, it is currently out of date, and not up to par with other competitors' websites. New devices which have different screen sizes have trouble accessing the website, due to the websites non-dynamic and unresponsive design. Some examples of the issues that current customers are facing include, but are not limited to:

- Poor search function
- Too many categories
- Terrible mobile compatibility
- Lack of responsive design

Poor volume design

The older website was not designed for a higher volume of customers accessing the website with a wide variety of devices, as explained above. From our conversation with the Online Sales Director, we have gathered that the website and the corresponding flow of the orders from the website to the warehouse has been causing problems with the increase in the customer base. This is because the website is currently not connected to the SQL (Structured Query Language) database that keeps track of all the inventory, which leads to inefficient processing of orders. All the orders arrive through email; they need to be printed and passed on to the warehouse. The increase in volume and the lack of a connection between the database and the website has led to backlogs in the warehouse.

Solution

For our solution, we plan to have a full redesign of the website using current technologies (primarily SQL, AWS (Amazon Web Services), Node.js, and Express) to resolve the issues that have risen with the skyrocketing online orders and modernize the website. We will first use Node.js and Express to build the website application / server, and then connect it to the SQL database, hosted on AWS. Then, we will fix the websites overall look and design by removing the extra unneeded categories, fixing the search bar, and adding proper responsive design for mobile devices.

After the redesign is completed and the connection between the warehouse and the website is set up, we will be able to efficiently process orders, and have a website with a fully responsive design. By resolving the issues with the website's overall functionality and the slow order processing, we will be able to achieve massive gains in profit and customer retention, as well as future stability in the eCommerce space.

Project Details

Goals for this project

The primary goals we have for this project are as follows:

Firstly, to redesign the website with responsive design so that mobile users can access the website properly, as well as revamping the search bar and removing unnecessary clutter from the website.

Secondly, we plan to connect the website with the database using SQL and AWS (as they are already setup on your warehouse database and main website respectively), which will streamline the ordering process and remove the need for copy and pasting ordering information onto shipping labels.

As for secondary goals, we plan to add small features, such as improving the user experience by changing the color scheme and website icons, dark mode, and a feature to subscribe to the website for any announcements the website might have, such as a Black Friday sale.

Main project methods

For the methods that we'll be using to create the project, we plan to approach the project using the agile methodology, with the scrum framework. The agile methodology is all about approaching the project in small, incremental steps through multiple "sprints" (time-boxed periods of development), while fixing any issues that pop up in the project backlog. Each sprint will begin with meetings between our Project Manager and the Online Sales Director to make sure that the project vision remains current and up to date. Since we review so often with this methodology, stakeholders will be able to provide their input at every step of the project. With this methodology, we will be able to create a high-quality project with minimal risk of issues such as scope creep that commonly occur during other projects.

Equipment / Technology / Software used

To reiterate what was mentioned earlier in the introduction, we plan to redesign the entire website, using Node.js and Express, as well as setting up a connection between the warehouse and the main website using SQL, and AWS. Some other tools that we will be using will include (but not limited to):

- **AWS Database** (Amazon RDS) [1]: will be used for the
- **AWS ES2** server for backup
- **Express with Node.js** for creating the backend of the website and connecting it to the SQL database.
- **Passport.js** for authentication of users
- **Mocha.js** - for automated workflows and testing

- **HTML** and **CSS** bootstrap framework for UI and website structure
- Work-provided PC's

This list is not final and is subject to change as the project progresses. A more detailed list will be outlined in the budget section of this proposal.

Staffing requirements

The project will require multiple developers to complete the project efficiently. Our team will be made of members that have the following roles [3]:

- ***Project Manager***: will ensure that all the components of this project are on time, up to standards, and distribute work. They will also act as a bridge between the organization and our development team.
- ***UI Designer:*** will handle creating wonderful user interface. User interface, combined with the user experience, is one of the major reasons that cause customers to move to different companies for their solutions.
- ***UX Expert:*** will handle the user's experience while they interact with our website.
- ***Web Developer:*** will be responsible for writing the code for the website in the chosen framework, in this case, Node.js and Express.
- ***Copywriter:*** is the person that knows how to write persuasive content to nurture your site and deliver accurate information that guides your users to what you want them to achieve.
- ***SEO Expert:* i**s the person that will optimize your site to make it rank high on search engines like Google and make you more visible to potential clients.
- ***QA Engineer***: will be responsible for ensuring that the everything works as intended through testing each iteration of the website.

You can reference the budget section for the exact number of staff members and the associated costs in the budget section of the proposal.

Facilities

As mentioned earlier in the Equipment/Technology/Software used subsection and the Staffing requirements subsection, we will need facilities for our staff to work at. Although we can have a WFH (work from home) solution, we believe that it's best to have a location close to the site where we can directly work with your technical support personnel if needed to properly execute the goals for the project. We noticed that Lucy mentioned that there was plenty of space in the warehouse, so we'd like to schedule a few workers there when we get started on the integration between the website and the warehouse database.

Expectations for the project

We expect for the project to be done within 4 - 5 months. For a more descriptive timeline, please refer to the schedule section in the proposal. We also expect progress to be incremental with the scrum framework, which will lead to a better finished product. The scrum framework allows for a great deal of client input as each sprint is marked with client feedback.

After the project is completed, it will have solved the two key issues your company, Rainbow Records had with the old website; poor mobile accessibility which led to loss in sales, and poor volume design, which led to product backlogs and loss in productivity.

Initial deployment of solution

For the initial deployment, we plan to get a small test pilot group from both companies to test out various features that we will add to the website, as well as the integration between the website and the warehouse database. Some of the features that we plan to have in the initial deployment will be the responsive design for mobile devices, and the revamped search bar. This pilot group will be one way we will be able to fix any issues or bugs with the initial deployment.

Contingency plans

If the project fails due to some issue with the technology we decide to use, or for whatever other reason(s), we have backup plans in place for some different situations that may occur. If the connection between the warehouse database and the website hosted by AWS cannot be created, we will switch either the website host or the warehouse host to some other host, such as MongoDB or DigitalOcean for the database, and Google or Hostinger [4] for the main website.

If we can't use Express or Node.js, we can use other frameworks for the frontend and backend, such as Vue.js for the frontend, and Heroku for the backend.

If the project is in jeopardy of failing due to lack of personnel on our side, we have contact with multiple independent contractors (developers) in the industry that we can hire to temporarily fill spots within our team to finish the project on time.

Future ongoing plans

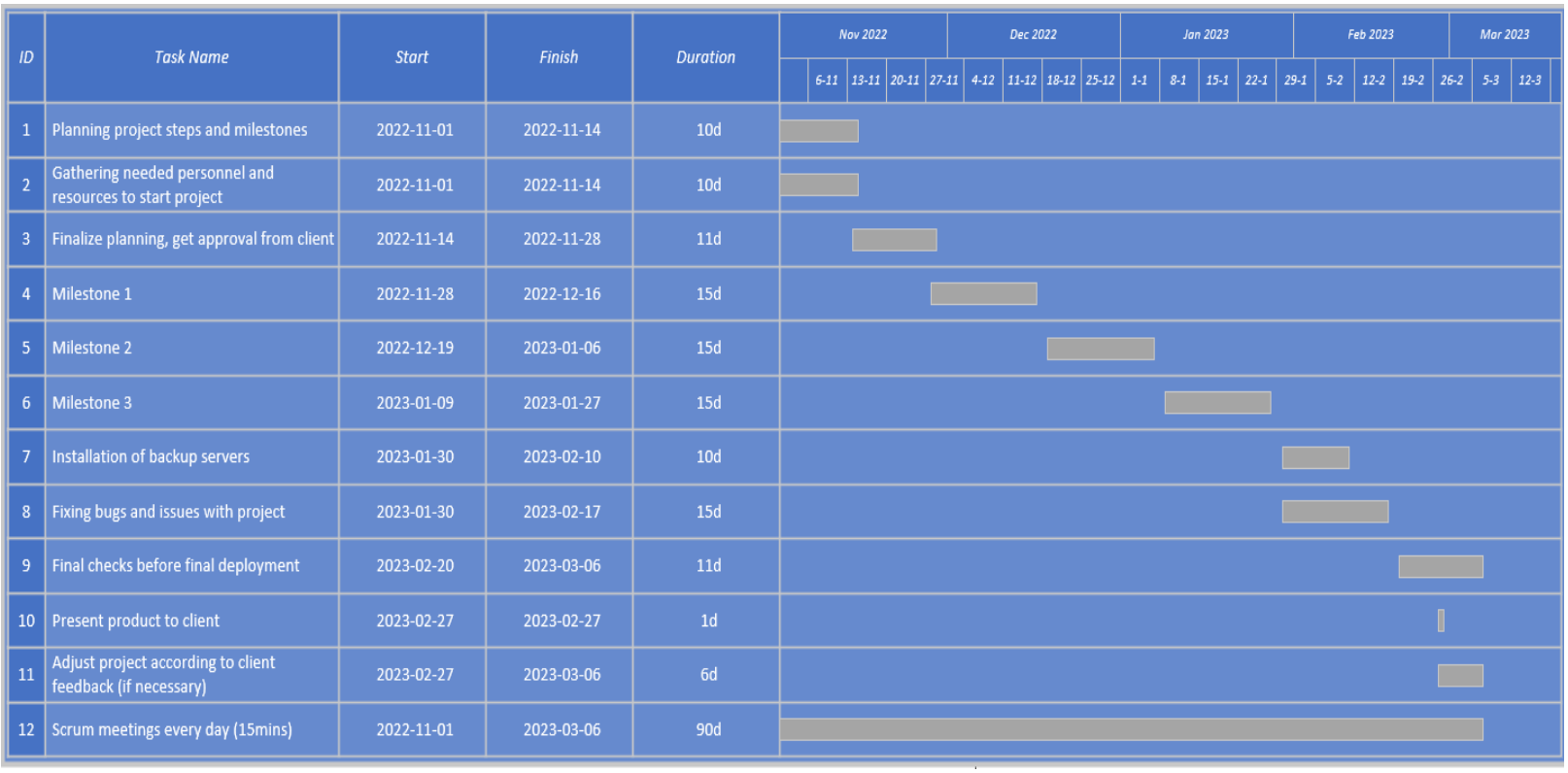
Once the project has ended, we will continue to maintain the website and fix any bugs that arise as soon as possible. The website will be kept up to date with the latest necessary fixes to create the best user experience possible for your customers. A bug reporting system will be added to the admin dashboard of the website, where you will be able to report bugs, give us feedback and offer improvements.

Schedule

We plan to break up this project up into distinct phases, or milestones in an 18-week (4~ month) timeline as shown below:

Week	Description of work
1 - 2	**Project Planning and Website Design** • **Review the current website and warehouse operations, plan to connect the warehouse to the website** • **Prepare any necessary tools or software to complete the job** • **Figure out multiple solutions / approaches to the problem(s)**
2 - 4	**Finalizing Planning and Website design** • **Finalize changes to the main project plans** • **Set up a clear goal for what needs to be carried out every phase / milestone**
4 - 7	**Milestone 1** • **Establish the primary framework for the website using Node.js and Express** • **Ensure warehouse SQL server is running optimally, start to setup connection with warehouse and website** • **UI frontend design of the website through wireframes and sitemaps**
7 - 10	**Milestone 2** • **Content writing for the website** • **Coding the website with technologies listed**
10 - 13	**Milestone 3** • **Establish connection to main website using SQL to connect with AWS database** • **Ensure the connection from website to warehouse is secure**
13 - 16	**Installation and Bug Fixes** • **Fixing any bugs in the system** • **Installing any needed added servers or equipment**
16 - 18	**Final check / Deployment** • **Final rechecks of the system for any issues before deployment** • **Final deployment of the website and database(s)**

ID	Task Name	Start	Finish	Duration
1	Planning project steps and milestones	2022-11-01	2022-11-14	10d
2	Gathering needed personnel and resources to start project	2022-11-01	2022-11-14	10d
3	Finalize planning, get approval from client	2022-11-14	2022-11-28	11d
4	Milestone 1	2022-11-28	2022-12-16	15d
5	Milestone 2	2022-12-19	2023-01-06	15d
6	Milestone 3	2023-01-09	2023-01-27	15d
7	Installation of backup servers	2023-01-30	2023-02-10	10d
8	Fixing bugs and issues with project	2023-01-30	2023-02-17	15d
9	Final checks before final deployment	2023-02-20	2023-03-06	11d
10	Present product to client	2023-02-27	2023-02-27	1d
11	Adjust project according to client feedback (if necessary)	2023-02-27	2023-03-06	6d
12	Scrum meetings every day (15mins)	2022-11-01	2023-03-06	90d



Project Planning and Website Design

This is the first step of the project. We will be planning out various plans on how to redesign the website, and on connecting the warehouse database to the main website. We'll also be planning on the schedule, or timeline for the project, using the schedule above in this proposal as a framework.

Finalizing Planning and Website Design

After the first planning step, we will finalize our plans with the client and prepare the necessary resources (hardware, software, human personnel, etc.) in order to begin work on the project. We'll also finish what needs to be done by each milestone.

Milestone 1

In milestone 1, we will set up the backend of the website. This will be done with the Express and Node.js frameworks for web development. This phase will also include the creation of design elements for the website. Our designers will create wireframes of the website along with the sitemap. These will be presented to the client and adjusted according to the feedback received. This phase will also include the creation of content that is provided by the client for their website.

Milestone 2

In milestone 2, we will finally begin coding for the website. This will involve incorporating all the content provided by the client into the wireframes by using HTML, CSS and JavaScript (Node.js) languages. The coding and compiling of code will be carried out through milestone 3 as well.

Milestone 3

In milestone 3, we will start connecting the completed sections of the website with the SQL database hosted in AWS. This will also involve writing code and working with the Express and Node.js frameworks. We will be adding the backend code to create queries for updating inventory for the products offered by the client on their website.

Installation (of backup servers) and bug fixes

For this step, we will be installing physical servers on site (or at a location that you can specify otherwise) for backups if something goes wrong with the warehouse database or website. This will be done using the FreeNAS software.

Final Check / Deployment

In this step of the schedule, we will be testing and deploying the website to private domain names at first, and eventually release the website to the public. The testing process will be rigorous, and our QA Engineers will work with your in-house team to make sure that all the components of the website work as intended.

Evaluations

Success criteria at deployment

To measure the success of the website, we will take three things into consideration:

1. Website load times
2. Responsive design
3. Connection to SQL database

The primary consideration being the ability of the website to handle the web traffic without long loading times. Specifically, the website should load in under 3 seconds. Research has shown that 90% of the people tend to leave a website if it takes longer than an average of 3 seconds to load up. To minimize the risk of potential customers leaving the website before they've had a chance to look at the products in the shop, we need to keep an average load time of less than 3 seconds.

After that, our second consideration is the responsiveness of the website to its environment. We need to make sure that all the customers, whether they visit the website from a computer browser, a mobile phone browser, or a tablet browser, receive the same experience.

Finally, the last consideration is to make sure that the website and the SQL database are connected to each other. This would be carried out by making sure that:

- the website displays correct inventory counts for all the products listed, and
- each order is sent directly to the warehouse where shipping labels can be printed.

Success criteria in 6 months

For the long-term success of the website, we need to evaluate 3 things:

1. Conversion rate.
2. Uptime.

3. Average load times

First, we plan to launch non-obtrusive customer surveys with a choice for users to opt into them. These surveys will allow us to judge how the website experience has changed for the users. They will also allow us to understand what the conversion rate for the website is.

The conversion rate is the ratio of the number of customers that visit an eCommerce website to the number of customers that place orders. According to research, the average conversion rate of eCommerce websites is anywhere between 1-2%. Based on the user surveys and website metric collections, we can customize the design of the website to improve the customer experience and so, the conversion rate.

Along with the conversion rate, we need to make sure that the uptime for our website stays as close to 100% as possible and the average load times of the website stay under the 3 second mark.

Personnel Qualifications

Our company, Vancity Tech has done many projects in the tech field, including multiple website redesigns, and software development. Our most recent work has been to redesign the website for Relic Entertainment which is a gaming studio based in Vancouver. We completely overhauled the website to be more dynamic, responsive, and modern.

We are a well-known company in the local area, and we even get various jobs outsourced to us from international locations. Most of our employees have industry standard certifications, such as “AWS Certified Security – Specialty", “Google Cloud – Cloud Digital Leader”, and “AWS Certified Solutions Architect Professional” [5].

We believe in making modern and aesthetic websites that are easy to maintain and provide a simple and beautiful experience to the suers without any hiccups. Because of our connections and wealth of human resources, we believe that we are more than qualified to take on this project and will deliver an outstanding finished product within a reasonable timeframe.

Budget

Labour

Title	Time for Project	Rate per hour	Total
Project Manager	18 weeks	$62	$44,640
UI Designer	3 weeks	$43	$5,160
UX Expert	3 weeks	$47	$5,640
Web Developer 1	18 weeks	$33	$23,760
Web Developer 2	18 weeks	$33	$23,760
Web Developer 3	18 weeks	$33	$23,760
Copywriter	3 weeks	$25	$3,000
SEO Expert	2 weeks	$28	$2,240
QA Engineer	2 weeks	$43	$3,440

Equipment

Equipment	Time	Rate	Total
Backup server	Indefinite	One time purchase	$3,019.80
Storage	Indefinite	$66 per 1 TB	As needed.
Workstation x4	18 weeks	$79 per week	$1,422
Workstation x3	3 weeks	$79 per week	$237
Workstation x2	2 weeks	$79 per week	$158

Space

Area	Time	Rate	Total
Office Space - Vancouver Downtown	18 weeks	$40/sf/yr for 1,000 sq. ft.	$13,846

Miscellaneous

Item	Time	Rate	Total
Maintenance	Yearly	$2,500 per year	As needed.
Support and Help: Priority	Yearly	$3,000	First year free. On a need basis after.
Total			$150,942.8

Budget Explained

Staffing and Space

As mentioned in the staffing requirements section, all the staff members play a vital role in developing the website. From the project manager, who will manage all the employees, to the SEO Expert who will make sure that your website appears in top results when a potential client searches for your website on a search engine like Google. The team will work at an office rented near the warehouse so that we are always available in person for questions and concerns from the employees at your company.

Equipment

We will need backup servers and corresponding storage for the growing user data as the website grows. The server chosen for the backup of the website is very configurable and allows you to increase the storage and speed as needed. It will be useful as a backup server in case AWS happens to have a decrease in their uptime or any other problems cause the website to crash.

The staff will be using workstation grade laptops that give us adequate power to automate scripts to rigorously test the website which results in a website with less bugs for your company. Each of these laptops will cost $79 per week to rent, which turns out to be cheaper than outright buying them.

Support

After the project has ended, our company will provide a year's worth of priority support for the website. If there are any questions, concerns, or technical help needed, one of our technologists will be at site to solve them. After one year, this will cost $3,000 per year.

For the regular maintenance of the website, we charge a yearly rate, and you can always be assured that we will keep the website running smoothly without any hiccups.

Conclusion and Recommendations

A website can be said to be the representation of a company and something that clients interact with daily. The experience a user receives on the website can very well set the tone for a long business relationship between a customer and the company. The current website for Rainbow Records requires changes to fix some key issues that affect the experience of the user. This proposal provides a solution for the issues with a complete overhaul with a redesign from the ground up to solve all the problems at a fundamental level. The website will be completed within 5 months with the final product solving the major problems with the current website; the unresponsive design and lack of search functionality along with the connection with the warehouse SQL database. All these changes will provide a modern and fluid user experience for the customer and ensure that they feel welcome to convert to a loyal customer.

References

[1] https://aws.amazon.com/free/database/?trk=b54801f4-057b-4340-b0a5-1ee26130ff8f&sc_channel=ps&s_kwcid=AL!4422!3!548725068628!b!!g!!aws%20sql%20database&ef_id=Cj0KCQiAm5ycBhCXARIsAPldzoU0IVoBryZ8AK5JV0Y4hbpTc7gIp4agMnCFYpEFsD5dhKPWYSSZBPEaAsp2EALw_wcB:G:s&s_kwcid=AL!4422!3!548725068628!b!!g!!aws%20sql%20database

[2] https://www.turing.com/kb/10-best-nodejs-development-tools

[3] https://swapps.com/blog/hire-developers-how-many-people-are-needed-to-create-a-website/

[4] https://radixweb.com/blog/guide-to-build-web-development-team-structure

[5] https://www.tomsguide.com/buying-guide/best-web-hosting-services

[6] https://www.skillsoft.com/blog/15-top-paying-it-certifications-of-2022

[7] https://www.sellerapp.com/blog/amazon-conversion-rate/#what-is-a-good-conversion-rate-for-amazon

[8] https://www.hobo-web.co.uk/your-website-design-should-load-in-4-seconds/

[9] https://ca.indeed.com/career/salaries

[10] https://www.spacelist.ca/listings/bc/vancouver/office/for-lease#512172

[11] https://www.lenovo.com/ca/en/p/servers-storage/servers/towers/thinksystem-st650-v2/len21ts0001

[12] https://hartfordrents.com/blog/laptop-rental-pricing/

[13] https://diskprices.com/?locale=ca