Swinburne University of Technology

ICT10001 - Problem Solving with ICT  
Semester: September 2021

Final Report

Baby Hut by G27

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# Executive Summary

**Overview**

In this report, we present the project of making a website for the Baby Hut company.

**Project background**

Baby Hut is a company focused on baby equipment with options for purchase or rent with extra services.

**The problems**

The project is to solve Baby Hut’s communication problems between each branch of the store and between the customers and the store.

**Important findings**

* The project successfully solved all of the original problems.
* The main platform to build the website is WordPress.
* Because the budget of the project is limited, some of the requirements are only solved to a certain extent.
* Agile methodology was used along with a Gantt chart to help the project progress smoothly and effectively.

**Recommendations**

For a long-term use of the website, the client should:

* Upgrade the plugins to its premium version
* Change the domain name of the website.
* Establish a marketing team for further growth of the company.

**Conclusion**

Through this project, we have built a website that suits the client’s needs. The website operates well on all platforms and can be used immediately. The site also solves all problems that were addressed at the start of the project.

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# Introduction

Baby Hut is a chain store providing baby equipment for sale and rent with further additional services. As the owners have an expansion plan, it’s important to have a system that can comply with the future needs of the company. Baby Hut wants to build a website that can provide customers with the best support and serve as an effective tool for management. The company has hired us to develop this website.

This report presents detailed information about this project of website development. The report will go through the project background, problems and scope in which will provide background information and goals of the project. Furthermore, the report also includes the methodologies employed and the results of the project to give the client a picture of our process and the final result. Finally, change management, recommendations for the future, and a user-guide will be provided for the client to completely handle the website.

# Body

# 1. Project client and team members

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Team members and client details | | | | | | | |
| Clients | | | | | | | |
| **No.** | **Name** | | | **Phone** | | **Mail** | |
| 1 | Peter Hamill | | | 0327064548 | | peter.hamil@gmail.com | |
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| Team members | | | | | | | |
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| 4 | Tran Tuan Nam | CS004 | | Back-end developer | 0342191348 | ttnam@gmail.com | |
| Communication | | | | | | |
| **Channels** | | | **Frequencies** | | | |
| Zoom | | | Every Saturday at 8PM (GMT+7) to update about the project progress. | | | |
| Skype (With provided phone number) | | | For emergency contact | | | |
| Trello | | | Daily (For team members only) | | | |

# 2. Project Background.

Baby Hut is a growing baby equipment sales system founded by Peter Hamill, James George, and Angel White. While Peter and Angel are experts on baby equipment, James is a businessman who learns and seeks opportunities about the market. Baby Hut's main product is providing rental and purchase for baby equipment. So far, they have had successes with five stores located in Melbourne, Australia.

To monitor each store, the founders are currently relying on daily contact with the manager. This method is clearly impractical if the company wishes for further expansion.

At the moment, the 5 stores use MS office applications to manage the sales of the store. These applications provide no means to connect each store to another. Also, sales reports are done individually and require James George to summarize and build up a full report of the company’s performance.

After a thoroughly research, we have concluded that the company has the following problems:

1. Lack of a system to provide connections between stores and from each store to the owners.
2. The company doesn’t have a website for better supervision and as a tool for better known and interacting with customers.
3. The founders will struggle to handle the company after any attempt to expand because of the “personal contact” monitoring method.
4. The staff and managers have difficulty with checking whether another store has the required product.
5. The customers have no way to check for a product or any kind of support without having to go to the store.

(Baby Hut information, 2021)

# 3. Problem and Project scope

## 3.1 Problems definition

After researching, we decided to solve all 5 problems. All of them are solvable since WordPress and WooCommerce offer the required tools to build an online store for free (Nick Schäferhoff 2021). Moreover, it is a great opportunity for us to work with each other and the client. We believe through solving all of the original problems, we will be well-prepared with knowledge and skills for future projects. Further details are discussed in Section 4 and Section 5.

## 3.2 Project scope

With those problems in mind, we defined the following project scope.

|  |  |
| --- | --- |
| **Scope description** | **Scope:** Product: Baby equipment  **In scope**: Build a system that has the necessary function of a sales site  **Functional requirements:**  **- Essential elements of company website:**   * Provide store’s background (About us, meet the team)   **-Customer services and contact:**   * A contact form for direct mail contact. * Live chat with supporters. * Provide store’s information for customers (mail, phone number, address). * Social network integration. * Blogas a way to provide customers knowledge on baby products and baby nursing (E.g. Size guide, tips on taking care of babies, etc.). Customers can also comment on each post to interact or ask questions.   **-Customer Registration**: Allow customers to create accounts as a way to prove their membership. **(Caution: 1 account for 1 customer)**  **-Register and Login:**   * Customer provide basic information (Name, email, address, photos of ID to prove their identity) * Guests might still place orders without an account, but they will not have access to renting or viewing orders history or refunding.   **- Account benefits:**   * Have access to renting, viewing transactions history and are able to refund orders. * Changing information details (name, address, company name)   **-Online shopping:**  **-Product:** Provide customers information of a product: description, images, brand, size, color, price.  **-Cart:** Customers can add products to cart and view later.  **-Wishlist:** Customers can add products to their wishlist.  **-Purchase:** Allow customers to pay in multiple methods. (COD, bank transfer, check, etc.)  **-Renting/Loans:** Allow customers to rent certain products for a period.  **-Processing and handling Loans:**  **-Overdue**: A list that has the borrower’s name and contact details. Also, an email will be generated to make an announcement to the customer.  - **Return:** ID, date, and time of return of the baby equipment. Extra fee will be added based on product and return date  **-Database**:   * A system to store and manage customers and staff detail * A system to manage products stocks for multiple locations   -**Services**:   * Customers can check availability of the products. If out of stock, customers can provide emails to Baby Hut. Supporters will then take note of the customer who orders a non-available product, and reach out to them when it is available. * Notice for customer loans detail, product, dates, fee and total price to pay.   **-Delivery Service:**   * Available for domestic and international shipping.   **-Reports generation:**   * The system must be able to generate reports required by the client. (Refer to Appendix #2: Baby Hut information)   **-Non-functional requirements:**   * **Performance**: Fast and compact website * **Security**: All of customers’ information is secured * **Extensibility**: Can add new features and upgrade the system. * **Capacity**: Can handle huge traffic * **Portability**: The website is responsive on desktop, tablet, and mobile devices. * **Compatibility**: The website can operate on different browsers and OS. * **Maintainability**: Easy to maintain * **Usability**: Easy to use   **Out of scope:**  Seek opportunity to cooperate with large Ecommerce levels like Amazon or BestBuy.  Improve and support worldwide customers and shipping system  Learn the customers: Know more about shopping habits, products the user cares about, keep in touch with the guest. |
| **Project deliverables** | A complete online store with full function and no errors.  A system that connects with the website to store all the data of sales and customers. |

## 3.3 Constraints

We have several constraints while doing the project. Because the budget of the project is limited, some of the requirements are only solved to a certain extent. Moreover, due to hosting restrictions, we were not able to access system configuration. This makes tasks like installing the SSL certificate or installing caching service impossible. Further details are discussed in section 7.

# 4. Methodology

## 4.1 Choosing the Content Management Systems

There are several Content Management Systems (CMS) that are suitable for eCommerce, including well-known ones such as Drupal, Joomla, and Sitecore. However, we choose to believe in and use WordPress, the industry's most popular CMS (BigCommerce, 2021). Furthermore, WordPress powers 30% of all websites available and the platform is free to use (Ellice, 2019). Another reason why WordPress is our choice is it does not necessarily require coding knowledge. Although through development, we still add in some additional code to customize the website, the building overall does not require any coding. Building an online store from scratch in a short time is a difficult task for our team since we only have some HTML and JavaScript knowledge. Fortunately, WordPress offers WooCommerce as a free solution to build an online store. Moreover, there are thousands of free plugins and templates that allow us to customize and build the website with desired functions without any coding.

Refer to appendix #3, section 1: Use of theme and plugins

## 4.2 Project methodology

To complete the project, we employed the Agile methodology, which divided our activity into 3 phases, with phase 1 covers from week 1-3, phase 2 from week 4-9, and phase 3 from week 9-12. Once the work began, we started our team cycles, from planning and discussing the method to get in touch with the client to executing step by step on the website. It ended with an evaluation process which is a complete approach for the project.

To manage our planning ideas and deadlines, we used the Gantt chart managed by our team’s leader. Through this chart, members could keep track of the working time, task, and deadline to follow up with each other's processes.



Here is a brief summary of completed work after each phase:

* **Phase 1 (Week 1-3):** The project proposal got approved with defined project scope, schedule and risk management.
* **Phase 2 (Week 4-8):** Developed a high-fidelity prototype of Baby Hut website with most desired functions working.
* **Phase 3 (Week 9-12):** Finalized the solution based on feedback from the client. Also developed a final report and presentation for the final meeting with the client.

When we finished phase 2, we tested out the prototype on some features such as performance, portability, links, orders placement, security. When the results met the requirements, we presented our solution to the client to gather feedback. The client was happy with the prototype overall, but they still wanted some improvements on navigation bar, footer, and account registration. Our team immediately addressed the problems and managed to solve all of them in the final solution.

## 4.3 Testing results

We tested our website one more time before handing it to the client.

Below is the summary of the testing results.

* **Performance:** The website scored 99/100 for desktop and 74/100 for mobile on PageSpeed Insights. These numbers mean the page satisfied the requirement of performance speed.
* **Portability:** The page can be accessed on all types of devices, from mobile to desktop.
* **Links:** All the links work. There were no dead links (a.k.a 404 error page)
* **Orders placement:** Both customers and guests can place orders. However, only customers have the ability to refund their orders.
* **Security:** We were not able to install the SSL certificate due to hosting restrictions. However, we successfully deployed a backup service for the website as well as a security service.

Refer to Appendix #3, section 2: Testing results

# 5. Results

## 5.1 Main features and design

The final version of the website meets all the requirements addressed in section 3. Below is the summary of features and design of the site.

### 5.1.1 Main features

* **Account**: Customers can sign up for membership of Baby Hut. An account allows customers to keep track of their orders, wish list, refund, and change their personal information. Moreover, rental products are only accessible for registered customers.
* **Social media:** Links to social media of Baby Hut have been integrated as icons in the footer of the website. Customers can click on those icons to directly get to the social media page of Baby Hut.
* **Orders and payments:** Both registered and non-registered can place orders for products. However, only registered customers can rent baby products. They both have a variety of payment options such as COD, bank transfer, or check payment.
* **Reports generation:** Most of the required reports by the client are achievable. (Please refer to Appendix #1: User-guide for further understanding on how to generate reports.)
* **Essential company elements:** About us, Meet the team, Contact us are all integrated into the website for customers to get to know about Baby Hut.
* **Communication features**: We also added a blog system to allow owners to post tips on baby nursing or size guides. A live-chat function is also integrated into the website to provide real-time support for customers.
* **Products monitor:** Owners can easily add, remove, change, and monitor product attributes and stock across branches. (Please refer to Appendix #1: User-guide for further understanding.)

### 5.1.2 Design and Layout

About design, we have added:

* **Logo:** A custom Baby Hut website logo.
* **Theme:** Zigcy Lite theme as requested by the client (Simple and lightweight).
* **Portability and compatibility:** Cross-platform compatibility (The website is viewable on any platform).

Refer to Appendix #3, section 3: Features and design for details

## 5.2. Summary

We managed to fully solve the 5 original problems of Baby Hut. The company now has a better way to monitor products for multiple locations and contacts. Connections between stores are also greatly enhanced. Furthermore, customers can view product descriptions and interact with the store online.

# 6. Change management

Before the project, Baby Hut was just an offline store chain with lack of connection between each branch. The store also managed customers’ details and products stock on separated Microsoft applications instead of a general database. Customers of Baby Hut also need to come to the store in order to know if a product is available.

Now, Baby Hut has a whole new system to manage their store chain. Owners can manage stocks across multiple branches. All contact information and product information are now stored on a general database. Customers can view descriptions and availability of products on the website and get supported online.

Through meetings with the client, it is clear that they possess basic IT skills and they demand for a website that is easily maintained and upgraded. With that in mind, there are several requirements for the client before we let them handle the website:

* An understanding of the plugins is required, since this solution mainly revolves around plugins, so a good understanding of plugins is vital.
* Ensure the website is backed-up regularly.
* Install localhost. We recommend making changes to the website on localhost before applying them to the live server. This will avoid the website crashing if there are any conflicts within the changes.
* Finally, the client will have a trial usage of the website. If there are no further requirements or clarifications, the website will be handed to the client completely.

Maintenance is very important for the health of the website, as well as user experience and interface. Maintenance and updates must be rolled out regularly to ensure optimal performance (SteckInsights, 2021). If the site is under high incoming traffic load, it is recommended to get the website under maintenance every three or four months. If the site is under low traffic load, maintenance every six months is advised (Editorial Staff, 2020). Maintenance can consist of:

* WordPress admin account password should be changed once monthly to prevent illegal access to the site.
* Make sure all plugins are up to date, especially plugins that manage user information and security plugins. (**WooCommerce** and **Wordfence**)
* Check WordPress security logs to identify any illegal access or exploitation.
* Backup the site regularly.
* Consider premium plans of plugins to access advanced features.

Since the website is a tool to bring customers to Baby Hut, it is crucial to pay extra attention to its security and performance.

# 7. Recommendations for future

Through the development process, we had encountered limitations of different kinds. Although the website is very much functional, in the future, things can change as further developments are set to be rolled out.

## 7.1. Plugin limitations

**Limitation:** Most of the plugins implemented are free versions, meaning that they cannot provide the full capabilities of website management and user experience.

**Recommendation:** Purchase premium versions of plugins or subscribe to the business plan of WordPress to save development time.

## 7.2. Domain limitation

**Limitation:** Domain name is an important element to consider as it gives business credibility and recognition (Web.com Team, 2020). Our team was unable to customize the domain name of the website with just a free-plan subscription of WordPress. Currently it is ict15.swin.edu.vn, which is irrelevant to Baby Hut and hard to memorize.

**Recommendation:** Consider some of WordPress premium plans to customize the domain name and also system configuration. Domain name is extremely important since it will allow customers to easily memorize the link to the website. Here are some of the recommended domain names:

* babyhut.com
* thebabyhut.com
* bbhut.com

## 7.3. Security limitation

**Limitation:** The SSL certificate is extremely crucial for companies and organizations since it secure online transactions and protect customers’ private information (Kaspersky, 2021). Our team was unable to install the SSL certificate due to hosting restrictions, but we managed to add extra layer of security in another way. However, it is still recommended to have a SSL certificate for your website.

**Recommendation:** Consider changing hosting service to premium plans of ones that are popular in the market such as DreamHost or Bluehost. The premium plans will allow you to configure the system of your website, allowing the installation of the SSL certificate.

## 7.4. SEO limitation:

**Limitation:** Although the free version of plugin solves the SEO problem to a certain extent, our team are not experts in Digital Marketing. The SEO score could be much higher and bring Baby Hut to everyone’s attention.

**Recommendation:** Besides upgrading the SEO plugin (All-in-one SEO) to the premium version, we recommend Baby Hut to have a marketing department. Having the experts to optimize the search engine will definitely drive more traffic to the website.

# IV. Conclusion

Baby Hut is a young company full of ambition. While the current information system can still manage and run the stores to an extent, it will not be enough for the years to come when the owners make plans for expansion. For the company to grow, a website that can effectively work as a tool for connection to customers and a management platform is a must. Through this report, we have provided in-depth analysis and discussion about the project of making a website able to satisfy the client’s needs. Using WordPress, the website we develop can be used and maintained by people with basic IT skills. We also include a user guide to support any further problems regarding the website, and recommendations on elements such as plugins, domain, security, and SEO. We believe that when the clients fully understand how to operate the website, Baby Hut will have one of the necessities needed for future success.

To conclude, this report is for presenting and describing the project of making a website to solve the client’s (Baby Hut’s owners) problem. The project has developed a fully functional web page that deals with the client’s requirements and also provides additional recommendations for the future.

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# Appendices

[Appendix #1: User-guide](G27-UserGuide.docx)

[Appendix #2: Baby Hut case study information](Baby%20Hut%20information.pdf)

[Appendix #3: Deeper details of the project](G27-Deeper%20details%20of%20the%20project.docx)