



Financial Summary Report

Penelope LTD (SwEng Group 2)

School of PET

26th May 2023

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1 Introduction

The first part of this report focuses on reviewing the performance of Penelope LTD during the first 34 weeks of the development period of Fauna Finder. The development period began Week 1 of the Autumn Term of the 2022/23 academic year. The review will reflect upon the company's financial performance by evaluating the significant variances in employee performance and the total cash spent; examining the quality assurance process, including how Penelope LTD utilised the QA manual; and assessing the team's dynamic by analysing how effectively the group worked together, areas of concern and potential improvements. The second part of this report will focus on the future plans of Penelope LTD and how it will continue working on Fauna Finder. These plans will aim to demonstrate the financial viability of launching and maintaining our app throughout its life cycle. Any financial data shown in this report was gathered by the financial department of Penelope LTD and was reviewed by the project manager throughout the development period. [1][2][3].

2 Performance Review

This section of the report covers the financial, quality control and department reviews of Penelope LTD.

2.1 Financial Review

This report section examines the group's financial management performance. Firstly, it analyses any discrepancies between actual worked hours and projected hours estimated before development, and reviews the costs linked to the app's development. Then, it studies the profit and loss account for the development period and the closing balance. Finally, it mentions the changes made to the Financial Business Plan. All the data shown is taken from the "Finance" spreadsheet [4].

2.1.1 Variances

2.1.1.1 Calculation

$$\text{Variance} = \text{Projected Hours} - \text{Worked Hours} \quad (1)$$

The variance in the hours is calculated by subtracting the actual worked hours from the projected ones. This means a positive variance reflects the company is not meeting the planned hours and a negative variance means the team exceeded the planned hours.

2.1.1.2 Hours

This section only reviews the team members or departments that have had the most significant impact on Penelope LTD's finances.

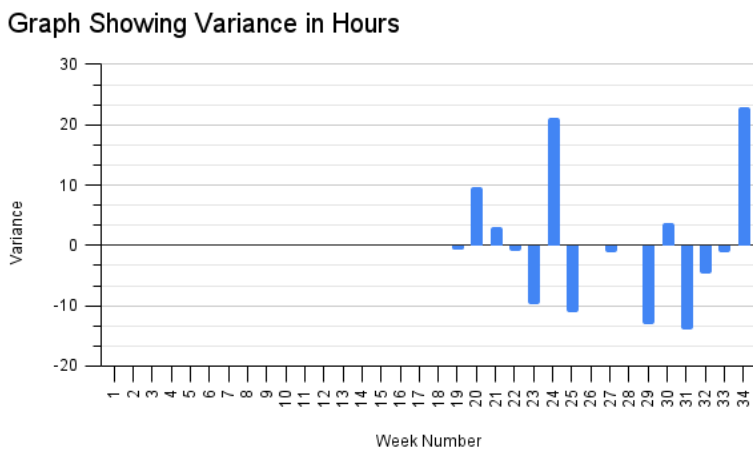


Figure 1: Weekly Variances in Penelope LTD's Hours for the first 34 weeks of the Development Period

The graph shown in Figure 1 demonstrates a relatively balanced distribution of positive and negative variances. The total variance in hours thus far in the project is only 4 hours, indicating that the majority of predicted hours were accurate but may have been assigned to incorrect time frames during the development period.

Graph Showing Variance in Alan's Hours

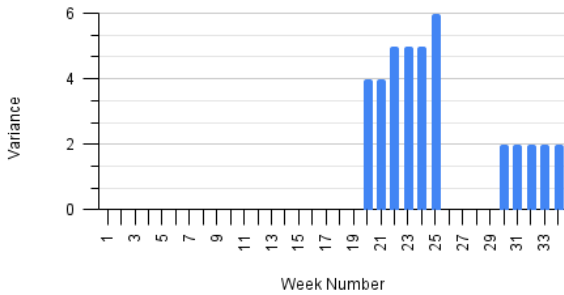


Figure 2: Weekly Variance in Alan's Hours for the first 34 weeks of the Development Period

Alan's variance shown in Figure 2 reflects his lack of communication and contribution to the team. This resulted in no logged hours which explains the steady positive variance. These have accumulated to a significant amount and mean that Penelope LTD has underspent. As mentioned in previous Financial Reports, the Project Manager is aware of this situation and attempts to rectify it have been unsuccessful. These attempts have also been logged for future reference.

Graph Showing Variance in Connall's Hours

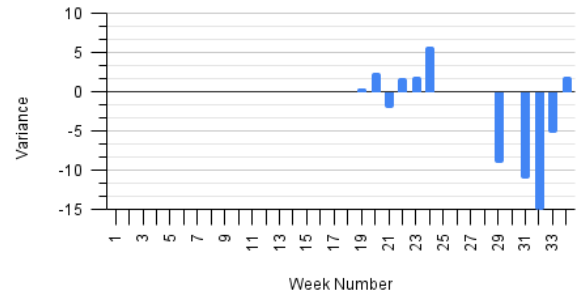


Figure 3: Weekly Variance in Connall's Hours for the first 34 weeks of the Development Period

Connall's variance shown in Figure 3 shows large spikes of negative variances in the most recent weeks, this can be attributed to the integration of the Icarus app and the large amount of testing that has occurred which have taken longer than expected. This variance is the largest negative of all team members.

Graph Showing Variance in Dawid's Hours

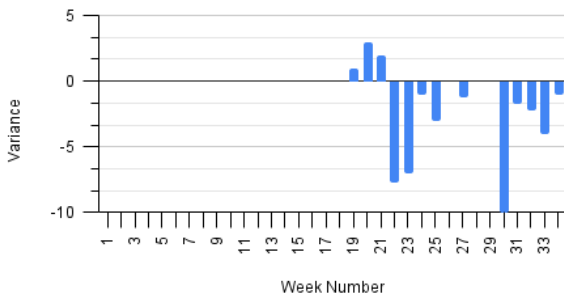


Figure 4: Weekly Variance in Dawid's Hours for the first 34 weeks of the Development Period

Dawid's variance shown in Figure 4 shows a steady negative variance for many of the weeks. This is due to extra responsibilities taken on for the design of the HTML tour and the development of the Fauna Finder app. This shows that the team underestimated the workload needed to complete Dawid's tasks when projected hours were defined in the Financial Business Plan [5].

Graph Showing Variance in Ethan's Hours

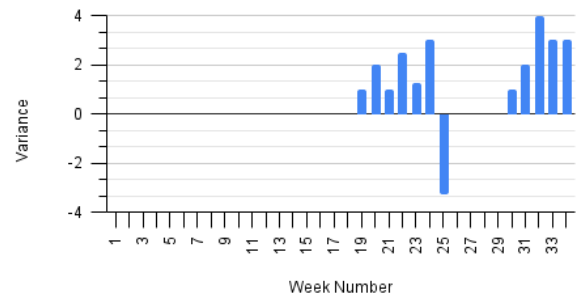


Figure 5: Weekly Variance in Ethan's Hours for the first 34 weeks of the Development Period

Ethan's variance shown in Figure 5 has a steady stream of positive variance. This is due to Ethan not communicating and contributing for a period of time. Attempts to rectify this situation were successful thanks to the Project Manager's reintegration plan.

Graph Showing Variance in Hours of the QA

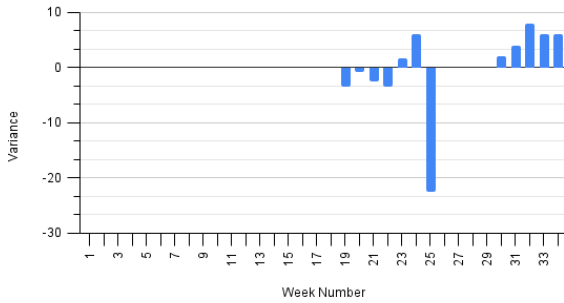


Figure 6: Weekly Variance in the QA Department's Hours for the first 34 weeks of the Development Period

The variance for the QA team shown in Figure 6 shows one of the biggest negative spikes of any department throughout the development period as a consequence of the completion of the QA manual taking more time than expected. Except for this spike, the QA team has had a relatively low variance.

Graph Showing Variance in Hours of the Software Team

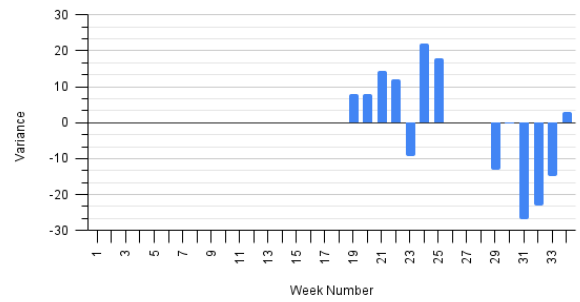


Figure 7: Weekly Variance in the Software Department's Hours for the first 34 weeks of the Development Period

The variance for the software team shown in Figure 7 shows a large proportion of positive variances before the spring break and a large amount of negative ones after the break. This could be the result of an unrealistic timeline set for the company to complete the project.

2.1.1.3 Actual vs. Projected Total Cash Out

Chart Showing the Actual Breakdown of Costs During the First 34 Weeks of the Development Period

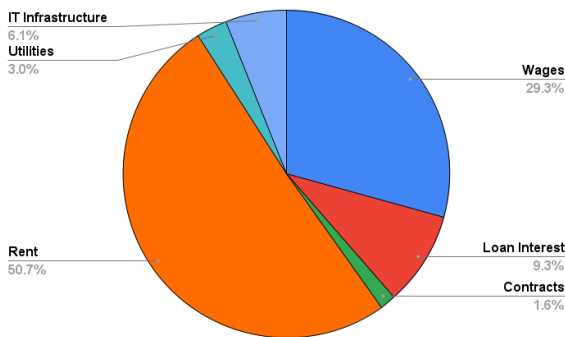


Figure 8: Actual Breakdown of Costs during the first 34 weeks of the Development Period

Chart Showing the Predicted Breakdown of Costs During the First 34 Weeks of the Development Period

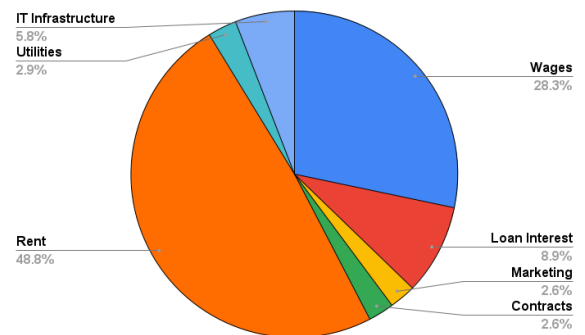


Figure 9: Predicted Breakdown of Costs during the first 34 weeks of the Development Period

The most notable difference between the actual cost breakdown illustrated in Figure 8 and the predicted cost breakdown depicted in Figure 9 is the absence of the marketing campaign's budget in the actual costs. This is attributed to an unrealistic timeline that was established for project completion, leading to the initial projection of the marketing campaign starting at the beginning of the summer term. However, the revised plan involves allocating the marketing department's budget once the project is ready, which is anticipated to occur in week 9 of the summer term. Given the remarkably low total variance in the company's hours, the contracts section stands out as the next largest change in the cost breakdown. The financial business plan lacked clarity regarding the required amount needed for the contracted work as well as the expected return from any contracts taken on by the company. The

initial plan aimed to ensure that the expenditures matched the anticipated income. However, in the end, Penelope LTD spent slightly more on contracts than what was received, although the total amount remained significantly lower than anticipated. Consequently, the contracts share in the breakdown has reduced.

2.1.2 Profit and Loss

Sales Revenue	
Contracts In	£600.00
Costs of Sales	
Contracts Labour	£418.75
Gross Profit	£181.25
Indirect Costs	
Rent	£20878.85
Utilities	£1250.00
IT Infrastructure	£2500.00
Contracts Out	£654.00
Labour	£11625.00
Net Profit	£(36726.60)
Interest	£3825.98
Profit before Taxation	£(40552.58)

Table 1: A Profit and Loss Account for Penelope LTD for the first 34 weeks of the Development Period

The profit and loss account table shown in Table 1, indicates that the company has expended £40,552.58 in developing Fauna Finder thus far. The Gross Profit line is an indicator for the profit made from the contracted work to the other company. As seen on the table, this amounted to only £181.25. In retrospect, this value does not justify the time and effort invested in the discussions with the other company. Therefore, in the future, any contracted work will have a revised rate to properly reflect the amount of work undertaken.

2.1.3 Closing Balance as of Week 34

In the cash flow forecast, the closing bank balance predicted for week 34 was £10,231.42 and the actual closing bank balance for week 34 is £11,447.42. This difference is due to the marketing team postponement, the discrepancies in predicted contract rates and actual ones, and the total variance in hours the team has accumulated.

2.1.4 Changes to the Financial Business Plan

Reflecting on the feedback from the financial backer (Prof. Tony Ward), the primary changes made to the financial business plan involved improving the risk register:

- Splitting the risk register into the development and post-development phases.
- Increasing the risk of falling behind on the software development from an amber to a red risk.
- Adding potential causes and solutions to the risks outlined in the register.

These changes can be seen in the Revised Financial Business Plan [6].

2.2 Quality Control Review

2.2.1 The QA Manual

Maintaining quality in a company environment such as Penelope requires an intricate approach involving both the management and the employees. A clear understanding and commitment to quality standards were achieved and communicated throughout the company by facilitating a well-defined QA manual outlining standard operating procedures, expected performance and other quality standards [7]. As well as this, it is important to implement an efficient system for monitoring and measuring performance against the laid out standards. This was made possible through regular audits and team meetings. Additionally, Penelope LTD strives towards continuous improvement,

encouraging employees to look for innovative solutions and suggestions for further quality improvement, as well as regularly reviewing and updating the QA manual, ensuring that the company's quality practices are appropriate and effective.

2.2.1.1 How it Worked

As outlined in the QA Manual, throughout the majority of the project, the team followed the scrum framework, which meant breaking down the project into 2-week sprints. This combined with weekly meetings meant that the team was able to stay on top of current tasks, communicate effectively within the team, and tackle upcoming tasks in following sprints. This was the cornerstone of ensuring the product was of good quality. During development, version control using Git helped maintain the quality of the code being produced by separating tasks between developers into branches, thus keeping consistency and avoiding errors.

One of the main reasons why incorporating a QA manual was a success is due to the overall standardization. This allows the QA manual to provide clear instructions and standards on how tasks should be performed, ensuring that all operations are conducted as planned and as consistently as possible. This is explored in detail in Section 8 (Product Realization) of our manual, which describes all the necessary phases and how we plan to achieve consistency in product quality and other services.

Another reason why the QA manual performed well is that it acts as a great training tool and enhances efficiency and productivity. It can serve as a comprehensive guide for training new employees, ensuring they understand Penelope's quality expectations and procedures. This is explained in more detail in Section 4 (Objectives of Major Functional Groups) of the manual, describing each main group's responsibilities and the objectives they should aim for to succeed in their field.

A big part of the QA plan is managing the accountability and traceability of the employees, as well as delving into possible risk management strategies associated with each role. This allows for a clear understanding of the roles and responsibilities of each key member of the team, such as the Software Manager and QA Manager. This is discussed in detail within Section 5 (Management Responsibilities) of the QA manual, explaining the role of each major key member and providing a mechanism for tracing back any issues or errors to the steps involved in the process of implementing the product. Additionally, by identifying potential areas of risk and providing solutions or preventative measures, the QA manual assists in mitigating the outlined risks, thus making the process safe and easy in the long run.

Last but not least, incorporating the QA manual like this indicates a commitment to quality, which can improve customer confidence and satisfaction. Furthermore, most industries are subject to regulations that require businesses to maintain certain standards of quality, and the QA manual helps ensure compliance with such regulations.

2.2.1.2 How it Failed

Reasons as to how the QA manual didn't positively impact the team could include the fact that creating, implementing, and maintaining the QA manual is an important commitment that requires both time and resources which can be exhaustive for a relatively short development period. This is because it involves the initial development, requiring a thorough understanding of company processes, but also new employee training to ensure efficient implementation. Additionally, the QA manual must be regularly updated to follow evolving processes and regulations, leading to continuous revisions that further add to the required investment of time and costs.

Another reason why the QA manual didn't work so well could be that it can sometimes exhibit a level of rigidity that hinders the project's ability to quickly adapt to new changes. The QA manual consists of fixed procedures and protocols that might not be flexible enough to accommodate rapid shifts in technology, new industry standards, or changing market demands. As a result, the QA manual poses the risk of becoming a barrier to innovation and responsiveness, preventing the company from making changes promptly.

While the QA Manual contained risk assessments for individual team managers, it failed to include a risk assessment for general employees. This meant that there was a lack of documentation on how to deal with certain situations that did not pertain to particular roles or jobs. The absence of guidelines on how to handle these situations could have had an effect on the time and quality of certain tasks being completed.

Furthermore, the QA Manual also failed to include a section on a standard procedure for training employees for particular tasks. This resulted in each employee having differing levels of confidence and knowledge when it came to certain tasks, as well as receiving varying styles and levels of training from different teams. The lack of a standardized training procedure contributed to inconsistencies and potential gaps in employee skills and knowledge.

2.2.1.3 Improvements

To further improve Penelope LTD's QA manual, the following practices could also be incorporated:

- The QA manual should be made clearer, more concise, and overall easier to understand. Utilizing more diagrams and flowcharts where applicable could help simplify complex concepts and enhance comprehension.
- Investing in additional training is essential to ensure that all employees understand and can effectively follow the QA manual. This training should be ongoing to account for any updates or changes that may arise. This would involve setting a meeting date and time, specifying which employees need training, and defining the contents of the training. The delivery and contents of the training should be shared beforehand with the QA team to ensure its effectiveness, accessibility, and adherence to pre-established quality standards. Additionally, a risk assessment should be implemented to accommodate employees who are unable to attend or require further training, allowing for additional meetings to be scheduled.
- Risk assessments for employees should be added. These assessments should outline what to do in the event of personal circumstances, health issues, and other unforeseen events, ensuring that employees have guidance on how to handle such situations.
- Organizing regular feedback from employees who frequently use the manual can provide valuable insights into areas that may be confusing or in need of improvement. Incorporating employee perspectives can help refine the manual and make it more user-friendly.
- Benchmarking Penelope's QA manual against those of other successful companies can provide inspiration and identify potential areas for improvement. Analyzing industry-leading manuals can help identify best practices and innovative approaches that can be applied to enhance Penelope's QA processes.

By incorporating these practices, Penelope LTD can enhance the effectiveness and usability of its QA manual, leading to improved quality management and better alignment with industry standards.

2.3 Department Review

2.3.1 Revised Team Structure

Team	Members (Managers in Bold)
Project Manager	Connall Shurey
Documentation	Ana Monteiro Ophelia Korontinis
Software	Giuseppe Barillari Harry Harrison Alan Brookes
Quality Assurance	Roman Kulev Ethan Cude
Finance	Thomas Richardson Ophelia Korontinis
Marketing	Oscar Goeffron Thomas Richardson
Design & Media	Dawid Zaboroski Oscar Goeffron

As seen on the table above, a notable change has taken place within Penelope LTD, with Roman assuming the role of QA Manager instead of Ethan. This transition represents a strategic shift aimed at maximizing the efficiency and effectiveness of our QA processes. Roman's implication in quality control coupled with his experience and knowledge, make him the ideal fit for this position. This change also reflects Penelope LTD's commitment to ensure a dynamic and adaptable workforce.

2.3.2 Effectiveness of Team Structure

The company structure worked well, particularly following the transition in the QA manager role. Task allocation was carefully planned, taking into account each individual's skill level and aptitude. The workload was thoughtfully distributed, ensuring a balanced distribution within teams and throughout the project timeline, thereby guaranteeing that each team member had an appropriate workload on a weekly basis.

Collaboration and communication among team members were notable, with most individuals actively engaging in regular exchanges of information. Interactions between different teams were particularly noteworthy, as they readily helped one another, particularly in the creation of big documents. To ensure project progress, all team members had unrestricted access to documents from every department.

While roles were generally well-defined, there were instances where certain team members deviated from their assigned tasks and assumed responsibilities outside their designated areas, resulting in minor challenges at certain points.

The diverse range of skills brought by each team member helped bring the project together successfully. For instance, the software leader's extensive knowledge greatly contributed to a comprehensive and well-rounded approach to coding, effectively averting potential issues.

Cross-functional support allowed for better results as it encouraged an exchange of perspectives and opinions that ultimately enhanced the final product. For example, the design and media team supported marketing efforts, while the documentation team ensured all submitted documents were thoroughly reviewed.

2.3.3 Areas of Concern of Team Structure

Insufficient accountability and ownership of tasks proved to be the most challenging area within the company structure, leading to the necessary change in the QA manager role. The lack of clear ownership resulted in issues that directly impacted the project outcomes and created an uneven workload distribution among team members to cover the work. It also resulted in last-minute rushes and increases pressure to complete tasks for the deadlines. To address this, implementing stronger mechanisms for task ownership and accountability would be crucial to ensure timely and efficient project execution.

2.3.4 Potential improvements

To enhance the company structure, it is important to consider further definition of roles and responsibilities, particularly in terms of specifying specific tasks. This will help ensure that there are no overlapping efforts and minimize any potential discontentment among employees. Clear role definitions provide clarity and focus within teams, resulting in improved efficiency and increased satisfaction.

To ensure effective communication at all times, it is recommended to strengthen Penelope LTD communication channels. This can be achieved by implementing regular weekly company wide meetings which would allow for cross-functional alignment and would encourage knowledge exchange. Additionally, fortnight team meetings should be scheduled to share key information, promote collaborations and enhance the team cohesion.

Optimizing task allocation is another key aspect to improve the company structure. Regular workload assessments should be conducted to ensure a balanced distribution of tasks at every point in time. Furthermore, it is essential to implement regular progress check-ins and individual performance assessments to ensure each team member is contributing effectively and working on their assigned responsibilities.

3 Future Plans

3.1 Plan Breakdown

As the app nears the completion of its development phase, it is crucial for Penelope LTD to shift its focus towards the future of the app's life cycle. This section of the report outlines a strategic plan for the app's next three-year life cycle, aligning with apps similar to Fauna Finder. The plan encompasses maintenance of the app, exploring potential avenues for further development, and establishing a comprehensive framework for sales and marketing strategies. Moreover, this section delves into the future of the company itself, evaluating the necessity of maintaining the current structure with 11 employees going forward.

3.2 Marketing Strategy

One of the other aspects of the financial business plan that the financial backer commented on was the fact it contained marketing information that was not relevant at the time. Now that it is relevant, the strategy has largely stayed the same.

The Fauna Finder app is a unique and innovative solution for bird-watching, wildlife interest and nature education on university campuses. The company's goal is to pitch the idea of the app to many universities up and down the country, the universities can then purchase a subscription to introduce their campus into the app and distribute it among their students and local community. This is an alteration to the typical target market for mobile applications as instead of targeting the user, Penelope LTD will be targeting the universities. By implementing this strategy, Penelope LTD can achieve continuous, large subscription purchases by fewer customers rather than one off small purchases by many.

Starting with the University of York, Penelope LTD aims to increase awareness and usage of the app among students and faculty, with the goal of expanding to other universities in the future. In this strategy, the company will outline the key tactics that will be used to achieve these goals, including identifying the product's unique selling points, developing a strong brand, creating engaging content, and leveraging partnerships and collaborations. By implementing these strategies, Penelope LTD aim to increase app usage, as well as generate revenue for the company.

3.2.1 Unique Selling Point

The Unique Selling Proposition (USP) is threefold: user-generated content, campus-specific information, and educational resources.

First, the user-generated content feature of the app sets it apart from others in the market. By allowing universities to upload their own images of birds and wildlife for identification by other users, we create a localised community of users that can help each other with identification. This not only makes the app more interactive and engaging for users, but also helps to improve the accuracy and completeness of the identification information available within the app.

Second, although there are many bird and wildlife guides available for the application user to download, Fauna Finder will be sold directly to the universities and so, will, in essence, be a bird and wildlife guide for that university. This means Penelope LTD will be presenting the universities with a totally customisable app where they can add different animals specific to their area. By providing detailed information on the species that can be found there, the company makes the app a valuable resource for students and faculties at that university. This campus-specific information is not available in other bird identification apps and gives Fauna Finder a competitive advantage.

Finally, the product provides educational resources, such as information on different birds and wildlife species, their habitat and behaviour. This makes it a valuable resource for students studying biology or environmental sciences, or anyone else interested in learning more about their local community of fauna. The app can also be used as a tool for research and study, as it provides detailed information on species found on the university campus which is different from other apps available in the market.

Overall, the app's USP is that the app is a unique and valuable resource for identification, conservation and education. It offers a unique combination of user-generated content, campus-specific information and educational resources that sets it apart from other bird identification apps available on the market.

3.2.2 Target Market

Penelope LTD proposes a targeted marketing strategy for Fauna Finder, specifically designed for campus universities in the UK. These institutions are often characterized by their rich biodiversity, featuring green spaces, gardens, and bodies of water, making them the perfect candidates for the unique capabilities of Fauna Finder.

The company's strategy involves a sequential approach to the various relevant stakeholders within each university, allowing for a tailored presentation to each department, addressing their specific interests and needs.

Penelope LTD will initially approach academic departments such as Environmental Sciences and Biology. For them, Fauna Finder can serve as an interactive educational tool, reinforcing classroom learning and encouraging field study exploration.

Following this, the company will engage with the Sustainability Offices. Penelope LTD will emphasize how the app can contribute to their environmental initiatives, providing an engaging way to raise awareness about local biodiversity.

Subsequently, Penelope LTD will connect with Campus Life or Student Affairs, demonstrating how Fauna Finder can enrich student life and engagement with the campus environment.

Outdoor/Adventure Clubs or Societies would be the next target, presenting the app as a valuable companion for nature exploration and outdoor activities.

University Marketing Departments can use Fauna Finder as a unique selling point for their campuses, attracting prospective students who value nature and biodiversity.

Finally, Penelope LTD will reach out to the Students' Unions, highlighting how Fauna Finder can contribute to student welfare, education, and engagement with the natural surroundings.

Penelope LTD's approach recognizes the varying needs and structures of each university. The company would conduct detailed research on each institution to better understand its unique environment, allowing the marketing team to fine-tune the pitch for each potential partner. Through this step-by-step strategy, Penelope LTD aims to foster strong partnerships and ensure a widespread adoption of Fauna Finder across UK campus universities.

3.2.3 Competition Review

The primary takeaway from exploring Fauna Finder's competitors is that all the apps sell directly to the end user and have massive amounts of information about birds that are not local. This emphasises the importance of Fauna Finder's USP and how, by selling to the universities and focusing on the local wildlife, the app will be successful.

3.2.3.1 Merlin Bird ID



Figure 10: Merlin Bird ID Logo

Company /Creator	Price	Google Play Store Rating	Number of Downloads	Extra Features
Cornell Lab of Ornithology	Free	4.5	1M+	Suggested group of birds based on location. Includes the rarity of the bird. When in the explore mode, the birds are sorted by category (waterfowl, gulls, owls, etc)

3.2.3.2 BirdNET



Figure 11: BirdNET Logo

Company /Creator	Price	Google Play Store Rating	Number of Downloads	Extra Features
Stefan Kahl	Free	4.3	1M+	Specifically identifies a bird from its song, not a bird guide itself.

3.2.3.3 Birds of Europe Field Guide



Figure 12: Birds Of Europe Field Guide Logo

Company /Creator	Price	Google Play Store Rating	Number of Downloads	Extra Features
Ecosystema	Free	N/A	10K+	Identification by filtering through options. Recognising a bird by its call and image quiz.

3.2.3.4 BirdWatching



Figure 13: BirdWatching Logo

Company /Creator	Price	Google Play Store Rating	Number of Downloads	Extra Features
Madavor Media	Free	N/A	1k+	Just an app to purchase a magazine of the same name which includes a bird guide but different functionality to the rest.

3.2.3.5 GoBird



Figure 14: GoBird Logo

Company /Creator	Price	Google Play Store Rating	Number of Downloads	Extra Features
Tony Gentilcore	Free	3.8	50K+	Map of nearby hotspots. Recent rare finds and their general location. The birds sounds, location and the link to its wikipedia,

3.2.3.6 UK Birds



Figure 15: UK Birds Logo

Company /Creator	Price	Google Play Store Rating	Number of Downloads	Extra Features
Thom Shutt	£0.99	4.3	10K+	Logs the users sightings. Plays the call/song. Has a list of birds the user hasn't seen.

3.2.4 Content Creation

As Penelope LTD continues to develop and refine the app, it is important to consider the strategy to effectively reach the targeted audience. Here are several suggestions to help universities attract a larger user base:

- Leverage social media platforms, such as Instagram and Twitter, to showcase the content added by the universities and highlight the locality aspect of the app.
- Create campus-specific promotions, such as bird-watching events and educational resources for students.
- Create educational content, such as blog posts and infographics, that highlight the app's features and the valuable information it provides on different bird species, their habitat, and behaviour.
- Utilise online and offline advertising, such as Google AdWords and print ads in local newspapers, to increase brand awareness and reach a wider audience.
- Develop a referral program that rewards current users for introducing new users to the app.
- Create a viral marketing campaign where users can share their bird sightings and identification successes on social media to increase visibility and interest in the app.

3.2.5 Distribution Plan

Developing a robust distribution plan is essential for Penelope LTD to generate revenue from the app. Initially, Fauna Finder's focus lies on creating a tailored app for the University of York campus, providing detailed information on the bird species found there, making it a valuable resource for students and faculties at the university. To ensure a successful launch, Penelope LTD plans to start small, dedicating all efforts to perfecting the app and assisting the University of York in adopting it. Subsequently, the company will gradually expand its reach, employing a realistic growth strategy while targeting additional universities through effective marketing tactics.

The distribution plan includes a variety of different tactics to ensure the app maximizes exposure to potential users. Firstly, Penelope LTD proposes leveraging popular social media platforms like Twitter and Instagram to increase awareness among the target audience. Additionally, the company suggests employing online advertising channels such as Google AdWords to reach individuals who are most likely to have an interest in Fauna Finder. Engaging with influencers in the bird and wildlife-watching community is another avenue that can be explored to promote the app and enhance its visibility.

Traditional marketing techniques, including distributing flyers and displaying posters, will also be recommended to increase campus-wide awareness. Penelope LTD would specifically target student societies, such as those focusing on biology and environmental science, to ensure the app reaches the intended audience.

Furthermore, Penelope LTD will emphasize the importance of forging partnerships and collaborations with bird and wildlife-watching clubs and organisations. This strategic move would help increase the app's visibility by leveraging their existing networks.

Overall, Penelope LTD's distribution plan aims to maximize the app's user base by effectively reaching potential users while targeting the individuals who stand to benefit the most from its features.

3.2.5.1 The first three months after development is complete

Initially, Penelope LTD's strategy revolves around only targeting the University of York, a mid-size campus, with a reduced rate in exchange for valuable feedback on the app. This would serve as a trial period, allowing the company to gather essential insights to refine the app. By doing so, relevant information would be provided to the software developers which would give them additional time to address any bugs and incorporate minor extra features needed. Moreover, this step would offer invaluable experience for key departments within the company such as the sales team and customer/tech support, preparing them for future pitches to larger universities.

3.2.5.2 The next three months

Following the completion of the trial period, the next phase spans three months, during which four universities will be targeted each month. This aims to provide the sales team with ample opportunities to refine their product presentation and sales techniques. The plan also includes using the University of York's good word of mouth and conducting meetings with administrators from the institution to showcase the value of the app. Penelope LTD foresees selling to every one out of four universities approached in this period.

3.2.5.3 The subsequent six months

Once the first six months of sales have been completed, the team will then start targeting eight universities a month, repeating techniques developed previously but convincing and selling much quicker. Again, the company foresees selling to every one in four universities in this period.

3.2.5.4 Remaining Life Cycle

In the subsequent years, the number of new universities that the company approaches will be reduced to focus more on renewing the current subscriptions and maintaining the app. This means the company will be able to develop new products while the current application is maintained with just a skeleton crew of support staff and maintenance programmers.

3.3 Sales

The sales data in this section correlates to the "Sales" sheet in the "Finance" spreadsheet.

3.3.1 Selling Price

Given that the targeted market consists of universities, it would be inequitable to impose a flat rate on each institution, as smaller universities may be discouraged from purchasing the product due to their lower student population. Hence, it has been decided to adopt a pricing model that factors in the number of students per university, allowing Penelope LTD to scale the price accordingly and ensure fairness. Using the suggested sales price, this results in a price per student of approximately £0.25.

3.3.1.1 Formula

$$\text{Selling Price} = \text{Number of Students} \times \text{Price per Student} \quad (2)$$

3.3.2 Sales Strategy

Once the initial trial with the University of York is completed, it becomes essential to expand to other campuses. To ensure the app reaches a wider audience effectively, a well-defined strategy must be in place. It would be prudent to prioritize universities with larger student enrollments, as they are more likely to recognize the benefits of the app on a larger scale. Additionally, campus-based universities should be the primary targets due to their spacious environments, which are likely to host a greater variety of bird species and other wildlife.

3.3.3 Sales Forecast for the First Year

The sales price and forecast have been carefully determined to ensure that the company can successfully repay its loan and potentially generate a modest profit within the first year. It is worth noting that the target universities are not fixed and can be adjusted if necessary. Up until now, the average weekly labour has been approximately, 33 hours per week. While this figure is expected to exceed the distribution period, a conservative approach was taken to estimate the total labour hours dedicated to the first year of distribution. This estimate allows for a buffer and accounts for any unforeseen circumstances or additional workload that may arise.

3.3.3.1 Suggested Sales Forecast

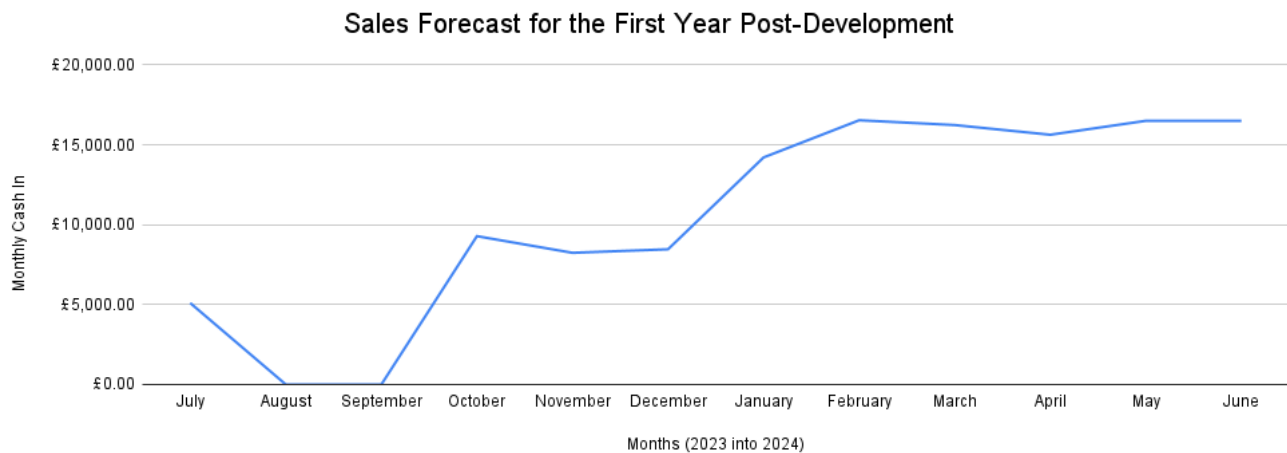


Figure 16: Monthly Sales Revenue for the first year Post-Development (first year of the Distribution Period).

3.3.4 Profit and Loss

3.3.4.1 A Profit and Loss Account for Penelope LTD for the First Year of the Distribution Period

Sales Revenue	
Sales Revenue	£126,706.97
Costs of Sales	
Sales Pitch Labour	£1,000.00
Gross Profit	£125,706.97
Indirect Costs	
Rent	£32,900.00
Utilities	£2,600.00
IT Infrastructure	£5,200.00
App Hosting Cost	£3,518.64
Labour	£21,450.00
Net Profit	£60,038.33
Interest	£5,461.40
Profit before Taxation	£54,576.93

3.3.4.2 Notes

Penelope LTD's only long term liability is the start up loan received from the financial backer, which came to £52,000. It is clear that the profit made in the first year can be used to pay off the loan and free the company from debt. However, it is possible that the company may need further funding which is explored in Section 3.3.6. This would result in another loan, reducing profits made in the first year (from interest payments) and reducing the chance of paying off the £52,000 loan in one go. This should be explored further in the future as there are many ways to avoid the need for any additional loans.

3.3.5 Hosting

Using the AWS Pricing Calculator [8] and finding a Heroku Pricing Estimate [9] the lead developer was able to estimate that the app hosting costs will be approximately \$362 (\approx £293.22 at this time) per month. However, it was made clear that this price could be drastically reduced by using AWS rather than Heroku. Nevertheless, AWS has its drawbacks as it would require many more labour hours to set it up.

3.3.6 Further Funding

The largest issue the company faces is becoming insolvent in the first three months of distribution. This is because, by focusing on one university, the company will only get one payment in this time. There may be some cash left in the bank from the development period, but the company cannot rely on it as it may not be there. In order to avoid this issue, cost saving measures will be introduced, including reducing staff numbers. This measure on its own might not be sufficient and the company would then need to borrow more cash. However, more borrowing results in more liabilities and should therefore be avoided. Alternatively, an overdraft arrangement could be made with the bank as evidence can be brought forward of the company's sales forecast. Another option could include requesting deferred payments on some of the expenditures, but this is unlikely to be successful.

3.4 Restructuring

It is not feasible for Penelope LTD to maintain its current size of 11 team members after the development phase. Restructuring will therefore be necessary, and can be implemented gradually to facilitate a smooth transition from development to maintenance and eventually, to the end of the product's life cycle. Having a dedicated software team of three members may be excessive, and it could be reduced to only the lead developer, who would be responsible for adding new features and maintaining the application.

Furthermore, as the application ages, the need for a dedicated marketing department and media department will become unnecessary, allowing for their phased elimination. These departments could also possibly be outsourced, having a dedicated marketing and media teams in a small tech firm seems redundant. Additionally, the QA, finance, and documentation departments could be consolidated to have just one person per department, or possibly even

two individuals if they can handle multiple responsibilities effectively. This essentially reduces the company to a skeleton crew of four to five individuals, including the project manager, who will guide the application until the end of its life cycle.

While a significant staff reduction may contribute to cost reduction for the application, it is important to consider the potential negative impacts on remaining staff morale and even the overall company revenue. A notable example is the case of Twitter, where Elon Musk's takeover led to such consequences [10].

3.5 Post-Development Risks

Risk	Issue and Possible Solution	RAG Impact
Little interest in a bird/wildlife guide.	If market research indicates that there is a lack of interest in the current product and there is a preference for alternative content, Penelope LTD has the ability to adapt and adjust its strategy accordingly. The app's content can be updated with relative ease, such as a train guide for instance. However, it should be noted that there will be additional costs associated with re-branding the product and the company to align with this new direction.	Amber
Universities are not buying.	This will have a significant impact on finances as if the up-take is slow, the sales progression will be pushed back, resulting in less revenue and possible issues. To combat this, the sales team should be sourced from outside the company and have a proven record selling similar products to similar buyers.	Red
The University of York is unwilling to be the test user	This will have a small impact on finances and the plan as Penelope LTD would have to suggest a different campus based university (added travel cost) or increase the incentive for York.	Green

4 Summary

In conclusion, this financial summary report covered various aspects of both the development period and future plans. Including a financial review, quality control review, and department review, this document also outlined the future plans for the company, focusing on the marketing strategy, sales, costs, restructuring, and post-development risks.

In the financial review, the report highlighted significant variances in employee and departmental performance as well as total cash spent. While the majority of predicted hours were accurate, there were instances of both positive and negative variances among team members and the different departments. The breakdown of costs associated with app development revealed some differences between the actual and predicted cost allocations. The most notable are the absence of the marketing campaign budget and a slight overspending on contracts.

The profit and loss account showed that the company incurred a total expenditure of £40,552.58 during the development period. However, the gross profit from contracted work with the other group amounted to £181.25. This created a need for revised rates for future contracts the company may take on. The closing bank balance as of Week 34 was more than the predicted amount, due to postponing the marketing campaign, the variance in contract rates, and the overall variance in hours worked.

The report also discussed the changes made to the financial business plan based on feedback from the financial backer.

The future plans for Penelope LTD ensure the financial viability of launching and maintaining the Fauna Finder app. The marketing strategy aims to establish a unique selling point, identify the target market, assess any competition, create content, and a distribution plan. Sales strategy, including pricing and forecasting, are also outlined. The cost section addresses maintenance, hosting, and any need for further funding. The report also acknowledges the importance of restructuring the team in order to optimize the dynamics and efficiency of future work. Finally, post-development risks are highlighted to prepare for potential challenges beyond the development phase.

In summary, this financial summary report provides a comprehensive assessment of Penelope LTD's performance and future plans for the app. The findings and recommendations presented will help guide the company in making informed decisions to ensure financial success throughout the app's life cycle.

References

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