**Executive Summary:**

The designed document is a project initial documentation about developing E-commerce web application for smart home applications. The business was initiated with small scale providing door to door service and now has been reached to a large scale where it needs the support of huge workforce. To address this, USB stick called Proton Stick was developed to remotely access the changing requirements. Now with increasing demand and to effectively grow the organization, the owner of the business is planning to develop marketing website so that it can increase the number of clients and address their queries in an efficient way. The scope of the project is limited to remotely changing the automations made on home settings by using the Proton Stick. Additionally, the users are also being guided if they need to update the settings or make new changes.

**Introduction**:

The given context is based on the business of resetting the systems of smart homes. The issue which the business is trying to address is resetting the smart systems of the homeowners once they shift their houses. New owners feel it difficult to understand the automation system used by previous owners and want to reprogram it according to their requirements. The business started with physically attending each house and changing the setting done on the systems manually. As the business grew, the process was changed to giving out the USB stick to the house owners and changing the required settings remotely. Now for further expansion Xavier Hardy, the owner of the business wants to promote his business through website and grow his business. The project is focusing on building an e-commerce web application for selling the USB stick with a 5G modem called Proton Stick for changing the settings of smart home applications. Xavier Hardy wants to make additional profit targeting for next one year time frame time and has received two quotations for the same based on whether the website should be static or dynamic. The static website would display the details of the business whereas the dynamic website would be able to show the updates made by the business on day-to-day basis.

**Communication Management**:

Communication plays an important role in all the stages of project management. For any project to be executed successfully there should be a good communication among the people.

The main sections of communication management are as follows:

* Documenting the information: All the communications made with the managers and stakeholders should be well documented so that all people will be in the same track and avoid confusion.
* Approval: There can be improvements made over the existing system and all people may not be aware of it. Hence approvals are required so that there is no misunderstanding among the people.
* Approach: All the plans made to execute the task should be well documented so that it is known which steps to be followed and how to complete the given task.

In the given scenario of resetting the smart systems of the homeowner’s, communication plays an important factor. All the requirements of the customers should be well documented so that there would be no misunderstanding after the completion of the task. After resetting the automation system, the clients are being advised to document the new process so that it can be referred if any need arises. At the inception of the business when all the activities were being taken care physically there were no issues in communication as the clients were present with them and the required information were collected directly. When the business grew and Proton Stick was developed, managing the communication became important as everything was taken care remotely. In remote access, the customers would provide the requirements and necessary changes be made to the system based on their needs. At this point, the requirements were gathered from the customer by asking questions with them and seeking the feedback.

Now at a point when the business is growing Xavier Hardy, the owner of the business wants to introduce a web-based application for his business so that he may attract new clients and expand his business effectively. To achieve this there must be proper communication made with the development team as how the web application should look, the different issues it should address and the way of updating the system. The development team must be closely tracked, and proper feedbacks be provided on initial versions so that there won’t be any repeated errors and all the issues be taken care. There can be regular meetings conducted to check the progress of web application and evaluation be done so that it would be aligned with the provided specification. The status of the project can also be communicated over the mails so that all the people are aware of the progress made to the system. After the development of the system suitable tests should be made to check whether the developed project is according to the specifications. Also at the end, a well written document be maintained so that if any new employee joins the organization there won’t be any difficulty in understanding the process followed in the system.

**Business Case**:

The business case helps in understanding whether the given home automation project is achievable and can attract the investors to invest in the given proposal. The main issue addressed in this project is resetting the smart settings of the house. The main business remains unchanged and with the evolution new and simplified processes are introduced for the benefits of both clients and organization. The clients can easily change the automation system of their house and the developers can get it done remotely and can address a greater number of clients. For organizational growth and increasing the revenue the owner of the business wants to develop a web-based application so that many people are aware of the business and the task can be completed at a faster rate.

The development of business case is done during the initiation of the project and is updated during the lifecycle. It is created in 4 steps as follows:

Develop: This is the first step in the business case and is the main part of the project. In our case, addressing the people’s needs for resetting the automation system by developing the web-based application forms this stage.

Verify: In this step we check whether the developed product is good or not. In this case, we check whether the developed application is working as per the requirements.

Maintain: In this step we keep the system updated with latest tools and techniques. In our case, we provide the required changes to the application and keep the system updated.

Confirm: In this step we affirm whether the outcome matches the expectation or not. In our case, we check whether the developed application is meeting the client requirements

The different components of the business case are as follows:

* Desirable: The developed proton stick is helpful in changing the settings of the smart systems of the house easily.
* Viable: By developing the web application for the given system it can be possible to attract new customers.
* Achievable: The system can deliver the requirements to the client in an easy and simplified way.

**Risk Log:**

Risk is defined as an uncertainty in the outcome. It is an important task to control and mitigate the risk factors in any project. Risk can be occurred in any phase in entire project lifecycle.

The different areas of risk log are as follows:

* Risk Strategy: The approach followed for managing the risk. There can be many steps for risk tolerance, and it be selected based on the requirement.
* Organization: Any role or institution associated with controlling the risk. The managers will play a main role and additional advice can be taken from specialist or consultants.
* Risk Budgets: There should always be some amount and resources set aside to address and control the risk. The risks should be anticipated well in advance and suitable measures be kept ready.
* Tools and Techniques: Latest tools and techniques should be followed to address the risk. The methods followed should help in both identifying and reducing the risk factors.
* Risk Management Templates: There must be a register to log all the risk cases so that it can be referred to solve the future cases.

In the given scenario of changing the settings of home automation there can be a scenario where there will be less budgets or lack of funds due to any reason. At that point, the delivery should not be affected and there should be no delays in providing services to the client. Even if the system is hacked or malfunctions there should be proper backups provided and privacy be protected. While having organizational discussion there should be some budget kept aside for managing the risk log so that the system is well prepared to face any unanticipated issues. New techniques should be adapted to minimize the risks and keep the system updated with the latest technologies. Also, all the identified risks must be documented so that it can be referred and used in solving the issues.

**Project Controls and Tolerances:**

Project control defines the flow in the way the project will get executed and project tolerances define the deviation from the estimation. During the initiation of the project, plans are made for quality, risk, and scope of the product. The way each component will interact with other, its workflow and process are also determined. But when the product gets completed for the release there are chances that it might be slightly deviated from the actual expectation and the quality might be compromised. These deviations are documented in the Project Document.

In the above scenario of resetting the automation of house, while the business owner gives the quotations for the developing the web application the requirements are given to the developers stating the needs of the users. The developers build the application based on the given requirements and the flow of the project designed accordingly. Now there can be a scenario where the user requirement changes or the number of users using the application crosses the expectation. At such cases the tolerances of the project should be increased accordingly to meet the new requirements.

**Project Quality Management:**

The quality of the product is managed by focusing on obtaining good quality and ensuring that the deliverables are done on time meeting the customer requirements. If the end users are happy with service provided then it would build the trust with the organization. Some of the scenarios of quality management are checking whether all the procedures mentioned in the document are followed, following the rules and protocols of the governing body, Monitoring, and ensuring that the project is built according to the user needs and so on.

Each deliverable product specifies the following areas:

* Deliverable: The title and ID of the deliverable item.
* Quality Standard: The standard against which the deliverable item will be checked.
* Quality Assurance: The assurance that the deliverable is meeting the required standard.
* Quality Checking: The checks that are made on the final product to ensure that the deliverables are meeting the expected standard.

In the given scenario, we can observe that there has been increase in the business of Proton Stick for home automation resetting. The main reason for this is the quality of service provided to the customer and the rate of customer satisfaction. At the beginning Xavier Hardy himself was attending every house and building the relationship with the users which prospered the business and made him to develop the Proton Stick. Even after doing the home automation resetting done through remotely there was no disruption in the services offered. There was no compromise made with the quality of service and it developed good connection with users. After achieving this, the owner of the business wanted to grow the organization and planned to build the web-based application. By doing so the customers can easily log into the web application, provide the required details, and get their work done easily. Also, there was a separate customer support service provided to address the changing needs of the users. This resulted good bonding with the users and the effective growth of the organization.

**Privacy Issues:**

The protection of the personal data of any individual is an important factor to be considered in any organization. All the personal data must be suitably handled and stored in a secured way. Once the purpose of the data is completed it must be deleted completely and no traces must be left out. Suppose in the developed web application if a family enters all the details like the time their widows will be opening and the time their gates will be closing then it becomes the responsibility of the organization to protect these data and avoid it from getting accessed by any other unauthorized person. The data must be stored in a protective way and must be handled by only required people.

**Security Issues:**

Securing the data of all the customers is a prime task of all the organization. The data present in the system must be stored in an encrypted way and must be avoided from getting leaked to any third-party organization. It must be safeguarded from any of the attacks from hackers and stored in a protected way. The application must be supported by trusted sources and hosted with dedicated IP addresses. The personal data of any individual is a very sensitive information and should be handled in a secured way. It is the responsibility of the organization to store it in protected ways and allow access to only authorized people.

The web application developed for home automation setting can be secured by providing options like password protection and allowing the access to only authorized people. It can also add an additional layer of security by providing Two-factor Authorization and screening out whether the person is required to get access to the system or not.

**Criminal Issues:**

There are many number of ways in which a hacker tries to get access to personal information stored in the system. Some of the very common ways are phishing scams, Internet fraud, Identity theft, Scamming mails and so on. Every individual must be careful while providing their sensitive information and must authenticate it before providing any data.

In the developed web application for home automation, the access is controlled only for the authorized user and is protected by providing required security systems. In case if any security breach occurs then it can be immediately brought to the notice of the customer service team and account be blocked from getting accessed from any hacker.

**Intellectual Property considerations:**

The contribution of every individual must be considered and can be supported by different Intellectual property structuring like patents, utility models, Industrial design, brand, quality certificate and Copyright. The IP structuring adds value to the product and reduces the risk of claims by disagreements among the other institutions.

In the given web application development all the aspects of product development, their uses, impacts and their scope are protected by confidentiality agreements. The personal data that is being used as inputs is authorized to only core set of developers with special access. The value of the application gets increased with adequate protection through intellectual property structuring.