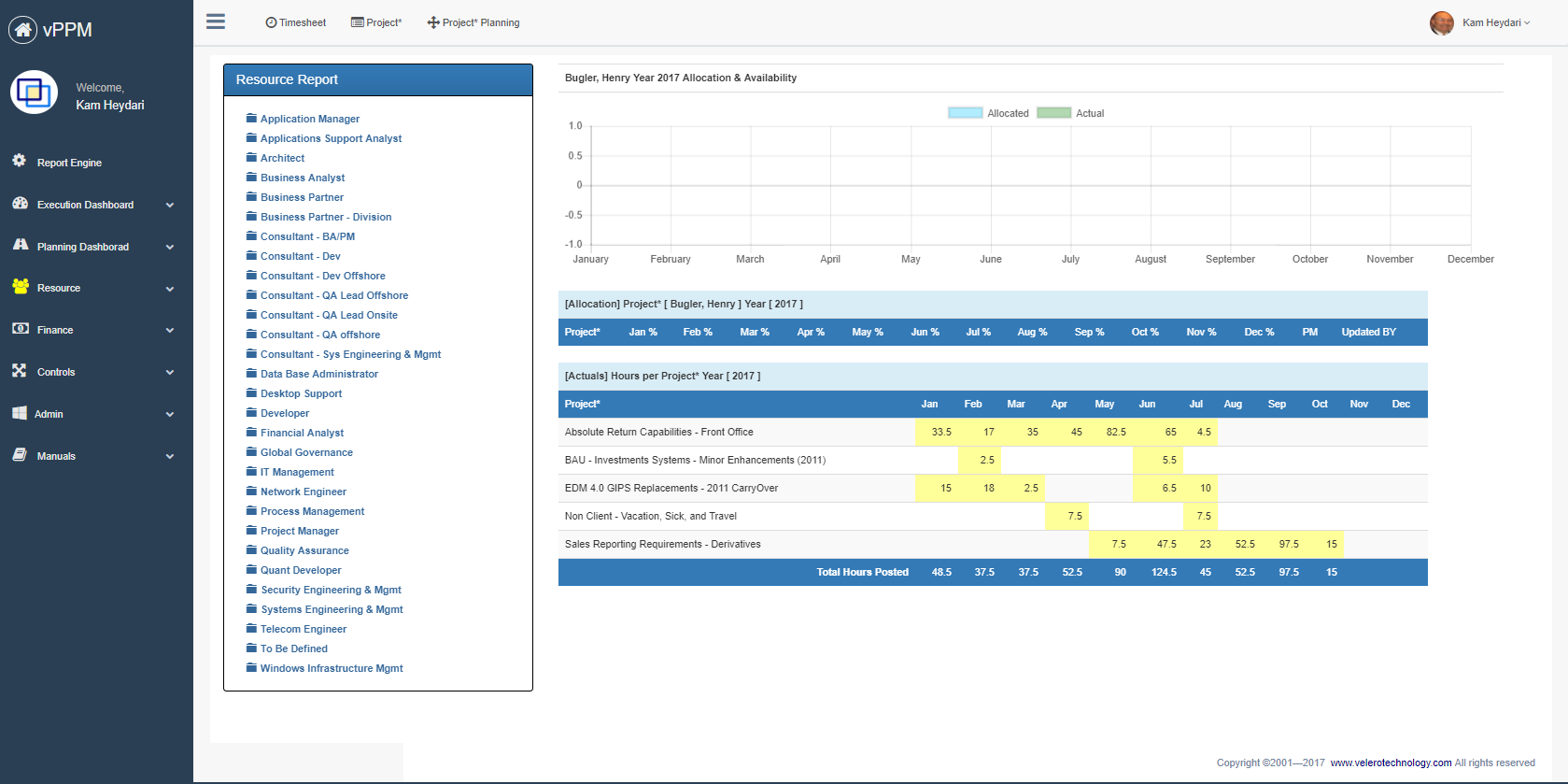
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Planning & Management



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# Company Strategy & Scorecard

## Company Background

Microsoft is an American multinational computer technology corporation, founded by Bill Gates and Paul Allen on 4th April 1975. The corporate is famous for its Windows and Office software (Ovidijus, 2021). Microsoft has now become one of the best-known and most valuable software companies in the world.

## SWOT Analysis

|  |  |
| --- | --- |
| Strength   * Brand reputation * Brand loyalty * Massive market shares * Intellectual property rights * Robust financial performance * Acquisition of Activision Blizzard * A strong relationship with existing suppliers | Weakness   * Depend on hardware manufacturers * Inefficient inventory management * Customer dissatisfaction * Low return on investments * Slow to innovate * Lack of critical talent * Focus on internal delivery rather than the interests of external stakeholders |
| Opportunity   * Cloud-based services * Lucrative opportunities in international markets * Increasing standardization * Developments in AI, AR/VR * Growing market size and evolving preferences of customers * E-Commerce and social media-oriented business models * Access to International talent | Treats   * Intense competition in the software industry * Increasing bargaining power of customers * Potential infringement or lawsuits * Open-source projects * Government regulations and bureaucracy * Expanding the range of cyberthreats * International geopolitical factors |

## Scorecard

## Reference information

Ovidijus Jurevicius (2021). SWOT Analysis of Microsoft.

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# Project Definition

Project Name: Azure Sphere, an IoT security solution

## Project Business Case

### Project overview

With the ever-increasing level of connectivity globally, the Internet of Things is gaining greater prominence. IoT is the network of physical objects— “things”— that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet, thus achieving higher efficiency compared to a system depending on human intervention. Common types of IoT wireless tech are Wi-Fi, Bluetooth, Cellular (4G, 5G), etc. At present, IoT is one of the main reasons for the revolutionary growth in cloud computing. The use of cloud computing and security concerns have continued to grow as more and more users switch to mobile devices.

Microsoft’s current microcontrollers predate IoT, which cannot guarantee the security required by connected systems. In addition, developing a secure operating system and cloud service is also imperative. Azure Sphere, Microsoft's new secure IoT platform, working to protect users' data and cloud environment, and ensuring that third parties cannot access them, needs to emerge at this time.

### Business issues/opportunities

* The rapid growth of the market for IoT and connected devices
* Increasing IoT security issues
* Microsoft's massive and consistent capital investment in the IoT industry
* The incapability of previous microcontrollers in securing data between connected systems

### Project Business Goals

By designing and launching Azure Sphere, Microsoft will be able to provide services that allow vendors of IoT devices to increase security by combining a specific system on a chip, Azure Sphere OS, and an Azure-based cloud environment for continuous monitoring. Meanwhile, Azure Sphere could provide promising benefits for all the upstream and downstream industries, from chip manufacturers to original equipment manufacturers (OEMs) to system integrators. It will be the industry’s first IoT solution from the ground up.

|  |  |
| --- | --- |
| ID | Objective/Goal |
| O1 | Timely delivery of Azure Sphere to seize the market opportunities |
| O2 | Build a dedicated talent team to develop Azure Sphere |
| O3 | Reduce costs by taking full advantage of the company’s existing resources which contain cloud security, secured MCUs, and a secured OS. |
| O4 | Address security issues at source for new IoT experiences |
| O5 | Create a trustworthy platform for deploying and using IoT devices |
| O6 | Lead to a better Web experience for users |

## Primary Project Objectives

* Gather data which are on the security status of IoT devices
* Identify and address IoT device security threats
* Support authentication, software updates, and error reporting over secured cloud-to-device and device-to-cloud channels
* Ensure that the most up-to-date Azure Sphere OS can be compatible with customers’ products

## Project Benefits

* Add multiple layers of protection to help guard devices against and respond to threats
* Help users secure existing equipment and build protection into new IoT investments
* Make it easy to add new features and improve performance throughout device lifecycles
* Help users take precautions against new and evolving threats with the function of error reporting and automatic security updates.

## Primary Project Deliverables & Dependencies

### Project Deliverables

|  |
| --- |
| Deliverable: Prototype Azure Sphere |
| * Hardware: Generate and secure an unforgeable encryption key that will identify each Azure Sphere MCU * Software: Design Azure Sphere operation system architecture * Cloud: Support authentication, software updates, and fault reporting via secure cloud-to-device and device-to-cloud channels. |
| Deliverable: Deliver Azure Sphere OS |
| * Back end/front end development of main functions of Azure Sphere OS * Implement compatibility with hardware and its cloud |
| * Deliverable: Integration and Unit Testing |
| * Perform OS and its hardware integration testing * Perform OS and its cloud integration testing * Perform product validity testing |

### Project Interdependencies and Inputs

|  |
| --- |
| Project Interdependencies and Inputs |
| * Partnership with Avnet (a global electronic components distributor) – reaching maximum hardware-based security, thereby realizing mutual benefit and win-win progress. |

## Project Conditions

### Assumptions

| **ID** | **Item** |
| --- | --- |
| A1 | All members of the project would have access to the overall development process of Azure Sphere when it is needed to help reasonably schedule their time and ensure on-time delivery. |
| A2 | The cost of new secure MCUs might be exceeded as the market price could fluctuate. However, an adequate supply of secure MCUs needs to be ensured under any circumstances. |
| A3 | If the budget exceeds due to uncontrollable factors, however, the exceeding part is within a reasonable range. Under this circumstance, the stakeholders should not intervene or terminate this project just for this reason. |
| A4 | The resources project members needed are sufficient and in good condition to be used throughout the project life cycle |
| A5 | All staff members and project managers possess the necessary skills to cope with tough issues and ensure the project runs smoothly |
| A6 | There will be effective communication in all the departments where the project is conducted to ensure high connectivity and low error rate of all steps of the project. |
| A7 | Meeting rooms will be available to timely solve urgent problems |

### Risks and Issues

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **Prob** | **Impact** | **Mitigation** |
| Staff don’t have the required skill set in developing new secure OS and cloud. | 30% | moderate | Hire experienced industry experts to train team members, conduct regular seminars to exchange experience |
| **The new MCUs do not come up to the expected standards in safety performance.** | 15% | minor | **The contract signed by both parties should indicate specific chip safety issues and relevant remedial measures** |
| The product cannot be delivered on time because of some uncontrollable factors, such as team members being infected with a pandemic and causing a delay | 15% | minor | Team staff will be urged to wear masks and do tests at least once a week. The HR department needs to provide a pool of talent for a rainy day. |
| The stakeholders could object to some specific steps when advancing this project. | 5% | minor | After all the stakeholders signed the project consent form, no one could interrupt the project process for reasons like the excess budget or redundant functions except for encountering uncontrollable factors. |

### Project Constrains

* Scope: From the function perspective, this project just contains development and delivery. The sales of Azure Sphere are not involved in this project.
* Schedule: The current schedule is based on team members who can be available every weekday and resources can be provided on time. However, if something unexpected happens, such as members being infected with covid, this could be a constraint on the timely delivery of the project.
* Budget: The current budget is strictly based on resources provided by the limited departments. However, if additional resources that are not provided by these departments are needed, this could be a constraint on the contemporary project budget.
* Quality: The current deliverable can only defend against known cyber-attacks in the world. If a new and unexpected virus or cyber-attack which is far beyond the scope of Azure Sphere emerges in the future, this could be a constraint on the quality of the current product.

## Scope

### In scope

| **ID** | **Type** | **Definition** |
| --- | --- | --- |
| S1 | Customer | Achieve timely delivery to provide a secure system for customers to guarantee their data security |
| S2 | Vendor | The project team needs to check whether the MCUs supplied are qualified |
| S3 | Research and Development (R&D) | Do sufficient research which contains gathering data and feedback from customers and hardware suppliers, as well as industry research before developing Azure Sphere |
| S4 | Training | Training team members to ensure they are equipped with the necessary skill set |
| S5 | Professional guidance | Hiring experts to provide technical guidance for this project is necessary. |
| S6 | Access Rights | Azure Sphere will grant limited access to certain users. During the development phase, only authorized staff can have access to it. |

### Out of Scope

| **ID** | **Item** |
| --- | --- |
| OS1 | Sales – the sales target of Azure Sphere is not involved in this project and cannot be a KPI of project members. |
| OS2 | Expenses – the cost increase due to uncontrollable factors such as urgent recruitment of new team members or a rise in hardware prices are not included in this project. These issues should be solved by HR or Purchasing department. |
| OS3 | Accountability and confidentiality – the departure of core members is not a reason for the project manager to be held accountable. Relevant confidentiality issues should be solved by Administration & HR department. |

## Strategy Matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Project Objectives | Strategies | | | |
| **Reduce Delivery time** | **Reach the expected goals of product** | **Manage risks to increase agility** | **Train employee** |
| Early delivery to seize market share | Yes | Yes | Yes | Yes |
| Solve security issues of IoT industry | Yes | Yes | Yes | Yes |
| Reduce the cost of development | Yes | Yes | Yes | No |
| Lead to a better Web experience for users | Yes | Yes | No | No |

## Work Breakdown Structure

## Resource and Cost Estimate

Using the following format define your resource (Excluding FTE Cost) cost estimates.

### Cost

|  |  |  |
| --- | --- | --- |
| Cost Description | Amount | Note |
| Hardware | $5,000,000 | Purchase MCUs |
| Software | $1,000,000 | Develop Azure Sphere OS, programming to establish communication with hardware and its cloud |
| Logistics | $5,000 | Shipment fee of MCUs |
| Training | $30,000 | Conduct seminars to train team staff |
|  |  |  |
| Total | $6,035,000 |  |

### Resource Needed

|  |  |
| --- | --- |
| Resource Type | Note |
| Project Manager | Ensure the successful execution and deliverables of the entire project |
| Business Analyst | Gather business requirements and collaborate across teams |
| Systems Engineer | Design operation system architecture, oversee all aspects of this system to ensure system's highest performance and security. |
| Network Engineer | Create the prototype of Azure Sphere, manage the overall system infrastructure |
| Software Engineers | Develop Azure Sphere OS, establish communications between hardware and software |
| Data Engineer | Manage data, create data pipeline, extraction, and ensure data are safely uploaded and stored in the cloud |
| Data Analyst | Analyze data and provide business insights |
| Test Engineer | Test and resolve bugs |

## Roles & Responsibility Matrix

Define roles and the responsibilities using RACI model for all participating resources.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Team**  **|**  **Area of Responsibilities** | | **Project stakeholders** | **Project manager** | | **Business analyst** | **Systems engineer** | **Network engineer** | **Software engineers** | | **Data Engineer** | **Data analyst** | **Test engineer** |
| Design project plan |  | C/I | R/A | |  |  |  |  | |  |  |  |
| Manage project execution |  | C/I | R/A | | I |  |  |  | |  |  |  |
| Gather requirements |  | C/I | C/I | | R/A | C | C |  | |  |  |  |
| Create prototype of Azure Sphere |  |  | I | |  | C | R/A | R | |  |  |  |
| Design Azure Sphere OS architecture |  |  | I | |  | R/A | C | I | |  |  |  |
| Program to identify each MCU with an unforgeable encryption key |  |  | I | |  |  |  | R/A | | I |  | I |
| Develop OS and algorithm |  |  | I | |  | C | I | R/A | | C |  | I |
| Create data pipeline, extract & manage |  |  | I | |  | I | I |  | | R/A |  | I |
| Analyze data |  |  | I | |  |  |  |  | | I | R/A |  |
| Conduct unit testing |  |  | I | |  | I | I |  | | I |  | R/A |
|  |  | R | A | | C | I |  |  |  | |  |  |
|  |  |  |  | |  |  |  |  |  | |  |  |
| **Responsible** | |  |  | People or stakeholders who are the "doers" of the work. They must complete the task or objective or make the decision. Several people can be jointly *Responsible*. | | | | | | | | |
| **Accountable** | |  |  | Person or stakeholder who is the "owner" of the work. He or she must sign off or approve when the task, objective or decision is complete. This person must make sure that responsibilities are assigned in the matrix for all related activities. ***Success requires that there is only one person Accountable.*** | | | | | | | | |
| **Consulted** | |  |  | People or stakeholders who need to give input before the work can be done and signed-off on. These people are "in the loop" and active participants. | | | | | | | | |
| **Informed** | |  |  | People or stakeholders who need to be kept "in the picture." They need updates on progress or decisions, but do not need to be formally consulted, nor do they contribute directly to the task or decision. | | | | | | | | |

## Project Structure

Define your project structure considering the information provided in the project mandate.

## Resource requirement Matrix

Define the resource requirement matrix per work page using the format that was provided to you in the class and for your group assignment.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Resource/Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Project Manager |  |  |  |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Business Analyst |  |  |  |  | 2 | 2 |  |  |  |  |  |  |
| Network Engineer |  |  |  |  |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Systems Engineer |  |  |  |  |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Software Engineer |  |  |  |  |  |  | 5 | 5 | 5 | 5 | 5 | 4 |
| Data Engineer |  |  |  |  |  |  | 1 | 1 | 1 | 1 |  |  |
| Data Analyst |  |  |  |  |  |  |  |  | 2 | 2 | 2 | 2 |
| Test Engineer |  |  |  |  |  |  |  |  | 2 | 2 | 3 | 3 |

Using Velero product include the estimated cost (Screenshot)

A picture containing graphical user interface

Description automatically generated

## Project Schedule

A picture containing graphical user interface

Description automatically generated

Chart

Description automatically generated