

Project Planning & Management

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Project Management & Innovation

CM CVC 2

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Introduction:

In this project I have been asked to think of and create a proposal of a project I would like to undertake that is relevant to my area of study I have chosen to conduct vulnerability tests on a network. During this process I need to think of different ways of how a project would normally be handled this includes things such as the technologies required to complete the project and management tools such as timelines/ Gantt charts so I can effectively manage resources and time into different areas of the project.

Project scope:

The project I have chosen to undertake is to conduct vulnerability test on a network to find weaknesses on the network to achieve this goal I have research some techniques and tools I can use to discover any weaknesses present in the network. During the assessment period of vulnerability testing, it had four phases being:

1. Target discovery
2. Scanning
3. Result analysis
4. Reporting

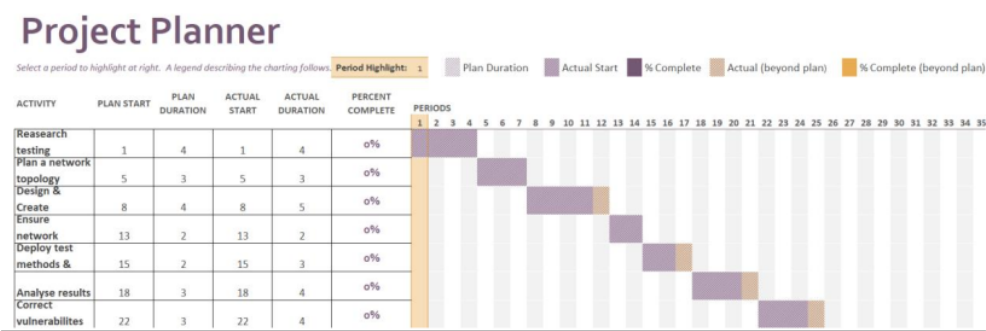
During this phase the testers aim is to get familiar with the target system and identifying the list of vulnerabilities associated with the application and services running on the target system. There are two main forms of testing used when conducting vulnerability testing manual and automatic.

As the name suggests manual testing propagates without the aid of any automated tools meaning in this form the tester has to use their own intellect and expertise to conduct the test. Typically, the target system is subjected to different test cases and then the tester would manually observe the response variation and if the response is not inline with the expected code of conduct the system would be deemed vulnerable.[1,2]

The second for is automatic testing the aim of automatic tools have been to reduce the amount of time to diagnose vulnerabilities within a system and also provide its users with an easy way to diagnose said problems as the user does not entirely have to rely on their own knowledge to use said tools. Automated tools help in overcoming the issues and limitations of manual techniques by reducing the amount of human intervention needed during the execution process. During the execution process the system is subject to test cases and comparisons between the expected and actual outcome. If the expectations and outcomes return as aligned the system is deemed secure but if they do not align it is considered vulnerable.

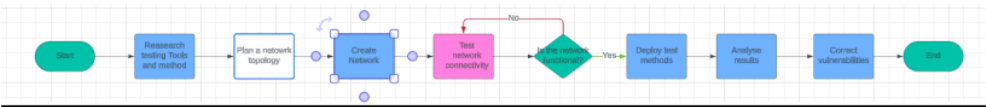
During my project out of the two methods listed above I will most likely be sticking to automatic methods where possible as even though I have knowledge on the topic I am not an expert so applying manual methods in some areas may prove challenging.[1,2]

Gantt chart:

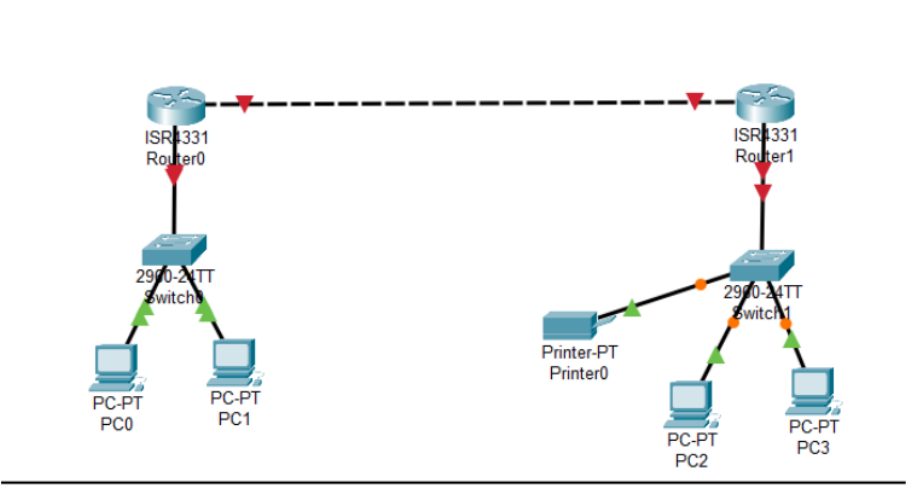


Here I have create a Gantt chart with my projected timeline of my project it should take just under 5 weeks to complete if the tasks are kept on top of and managed correctly this timeline may change as I ama undertaking the project by myself so things may not always go to plan and the time line may change depending on any change in circumstances.

Flow chart:



Network structure diagram:



Development method:

For this project I will be using the waterfall development method as I believe it makes the most sense looking at my project as I will not be able to analyse the data collected from the

testing tools without first using the tools on my network structure to find vulnerabilities due to this fact I believe the waterfall method aligns perfectly with the structure of my project.[7]

Enterprise/ Innovation:

Swot analysis of Microsoft:

Strengths:

1. Microsoft is the undisputed global market leader in software technology especially in cloud computing. They are the worlds largest developer of the windows operating system and cloud services through software like azure and office 365.
2. Microsoft is one of the largest companies in the world ranking at 2nd with a market value of \$2.46 trillion as of oct 2023.
3. Microsoft has a vast reach across the globe as they operate in 190 countries worldwide and after the release of windows 10 it reaches one billion monthly active users.
4. Microsoft has excellent brand reputation as it was ranked 2nd by Interbrand's as the world's most valuable brand in 2022.
5. Microsoft software is incredibly easy to use making it attractive to companies to use as it doesn't require a lot for training to use for employees.[3]

Weaknesses:

1. Microsoft has overexposed to the PC market meaning that PC shipments are often subject to frequent falls due to the rising vendor prices and currency fluctuation.
2. Microsoft is lacking in innovation compared to other companies such as apple, amazon and google are making way in development of new technologies and ideas.
3. Microsoft has been accused of unfair business practises in Europe. And in the US a federal court is hearing an appeal by improved search LLC which could revive a lawsuit against Microsoft for infringing a search engine patent.
4. Microsoft has had fewer acquisitions as of recent resulting in failures and diversities and Isot profits.
5. Increasing cybercrime have left Microsoft in a vulnerable state as they such large company it makes them a target, hackers have repeatedly attacking the windows operating system.

Opportunities:

1. Microsoft has a hug opportunity in many new innovative areas, such as AI and gaming technologies. Exploring these avenues can provide Microsoft with the upper hand in these markets.
2. Microsoft can focus on entering new partnerships with different companies and brands. Also, by focusing on acquisitions an partnerships will be profitable for Microsoft as new technologies continue to be developed.
3. Microsoft has the opportunity to capitalize on the expanding of the smartphone industry applying their technologies to create a smartphone to compete with big brands such apple and Samsung.
4. Recent event such as the covid-19 pandemic have increased the demand for remote working solutions to allow people to work from home or anywhere in the

world Microsoft teams is already a leader in the sector being available in 181 and languages and projected for further growth.

5. Microsoft has a huge opportunity to make way into the video games industry as they have recently acquired three massive production studios Bethesda, Activision and blizzard, these companies are giants in the games industry and can be used to gain huge revenue for Microsoft through game development.

Threats:

1. Microsoft work force diversity in 2022 showed an imbalance in the recruited workforces for that year. The number of woman and minorities was low causing criticism to Microsoft HR policy.
2. The increase of cyber crime thefts and piracy issues have immensely effected Microsoft's network security system.
3. Other software like Linux OS and open source office have been entered into the marketing offering similar services like Microsoft but for free making it an appealing alternative to Microsoft expensive pricing model.
4. Microsoft has an aggressive competition with companies such as google and apple. These companies much like Microsoft are giants in industry and can pose a threat to Microsoft position.
5. Politicized contracts are quite common in the tech industry which can be both a positive and negative as if a politician doesn't like one company, they may award contracts to one they favour more other than based on how qualified they are.[3]

PEST analysis:

Political factors:

During the history of the company Microsoft has had to do aggressive lobbying with governments around the world so that there is a positive image of the company. Microsoft has paid over \$10 million in two years towards lobbying to further the image of the company in political circles. Microsoft also gained the attention of governments due to the anti-trust related issues governments put blame on Microsoft for creating a monopoly as Microsoft offers bundles of software which was alleged to make it difficult for users to uninstall the software keeping it on their systems.

Economic factors:

The GDP of a country, the disposable income of its people, inflation are the most important factors which can provide both the opportunity and thret to the company. Microsoft is known worldwide for the windows 10 operating system being the most used OS in the world. In the 2008 recession Microsoft business was effected so much it had to lay off 5000 of its employees. The increasing income of people in developing countries provides a huge opportunity for Microsoft as more and more people are buying laptops computers which most devices run on the windows OS.[4,5]

Social factors:

The massive increase in adoption of laptops and computers has seen every part of the world. Microsoft needs to adapt itself according to factors such as customer preferences, trends, cultures etc. when ever there is a huge increase of laptop and computer sales it benefits Microsoft massively as their OS becomes a favourite due to its simplicity. However

more recently mobile phones are being used more than anything. Unfortunately Microsoft major products are compatible to computers exclusively so it is important for Microsoft to focus on mobile phone users to increase sales further.

Technological factors:

Microsoft is a world leader in technological innovation. It is the first company in the world that introduces an operating system that revolutionized computing. It launched with a huge array of features such as the start button which was hugely popular with users as it allowed for quick access to software, setting and files on the system and also launched with the once most used web browser 'internet explorer' with its release opened a new door to the world. With its features it allowed users to find any information they needed in seconds and could also communicate with people all over the world. Microsoft is always improving its operating system with new iterations the most recent being 'Windows 11'. [4,5]

Legal & Ethical considerations:

To prevent any legal or ethical problems from arising Microsoft upholds their own program focused on prevention, detection and remediation of any issues that may arise.

To prevent any compliance issues from arising Microsoft focuses on promoting a culture of ethics and integrity. They do this by creating a culture of compliance through the company and through their standards of business conduct policies and training. They also use data analytics and risk assessments and other compliance effort to minimise potential risks.

They can detect potential legal compliance issues in several different ways including an internal auditing group and monitoring through their compliance analytics program control and compliance teams, and investigating any concerns reported by employees and other groups or individuals and analysing trends through their ethics team.

Finally Microsoft remediates the problem by assessing the root cause of the problem and enhance their controls and processes to minimize the risk of reoccurrence. Further they take disciplinary action with any individuals that violated their policies and standards regardless of their level. [6]

Business documentation:

Potential startup name: Secure State Systems (SSS)

Logo:



Business type:

Since the project I am undertaking is a solo project I can only assume that my business type would be a sole trader although this could change if theoretically the business were to expand being a sole trader this means that the business would be managed by myself alone however this also means that all debts and taxation are mine personally this could be a risk if the business were to not do well as it could result in debt. However I have chosen to go with this model as sole businesses are easy to establish and discontinue. By using this model under UK law there is no distinction between the owner and the business so any financial issues such as debts fall onto me to pay off which is a risk trade off for the low administration cost and set up involved in the process.

Business initiatives for funding:

There are many different ways I could raise funds for the business model and the project whether be through my own funds or donation or fund-raising methods/events.

Crowd funding has been an incredibly helpful methods for small causes and businesses to raise money to fund projects/services I could take advantage of this method to raise money for the business however this is not a 100% reliable methods as it relies on the generosity of the public another more reliable method I could use although it carries out some risk I could take loans to fund equipment and services, tools etc, I would need to start up the business this however would increase the initial startup cost as it would add interest on top of the money I would have borrowed and if the business were to fail I would incur the debt of the loan myself .

Comparing these two methods I think It would be best to stick to more crowd funding methods as the business is only small so will not require much startup capital, as I can save on costs by using open source software where possible and only pay for tools which are absolutely necessary.

Reflection:

I intend to use this project opportunity to further my skills in networking as I believe it provides and ample opportunity to experiment with different industry standard tools and will allow me to familiarize myself with said tools. Furthermore, it will allow me to broaden my knowledge and overall skills by developing my own networks structures, diagnosing problems and how to use tools to resolve them.

My project can have a positive impact on society as since the tools and software I will be using are readily available and simple to understand once the project is complete I can document the steps taken to use and ensure that a system is secure so I can also use my project as an educational opportunity as well if the networks structure is modelled after a small private network such as a household network or of a small business this would provide helpful knowledge to individuals who may not realise the importance of vulnerability testing their networks to ensure their own safety I could also outsource my knowledge and ability to said individuals and provide a service for them providing security and peace of mind that their information is safe and secure.

A challenge I may run into include access to specific software some helpful tools and software sometimes can be quite pricey which means I may not be able to access them however there are free alternatives but this would mean I may not have access to a full array of features and tools so I may potentially be limited to what I can achieve in my project.

Conclusion:

To conclude this assignment, I will be undertaking a project of testing networks for vulnerabilities with the pretence of creating a business model around it and providing an educational opportunity and service to small businesses. To achieve this goal, I have made project planning material clearly expressed my goals and some material related to my business.

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GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

70/100

Total:		70
1. Engagement with Literature Skills:		
+ Good use of citations & a quality formatted reference list. - could be extended to gain additional marks in this category. - Be careful to paraphrase all section to avoid plagiarism.	20	13
2. Knowledge and Understanding Skills: 10, 10		
* Project Man. & Planning: + Evidence of knowledge and skills covering project scope inc. proposed solution, required Technologies/resources to be used, a project timeline schedule & Gantt chart documented. Good. - Project schedule could be documented. + Tech Start-up name, Logo, Business type (Legal classification) and a are documented. And Funding options considered and documented. - Business Strategy (Mission, Objectives, Values) not documented.	20	16
3. Cognitive and Intellectual Skills: 5e		
+ Development methodology and Project scope assessed and clearly documented.	20	13

– Scope analysis could be enhanced by documenting a schedule with dates. + PEST & SWOT analysis includes some key considerations and documents some relevant professional legal & ethical considerations. – some additional specific legal considerations such as Privacy & the Data Protection Act could be documented. + Project's positive impact on society is clearly described. – Risk analysis table could be documented. + Conclusion.		
4. Practical Application Skills: 10, 10		
* Gantt chart: + Gantt chart is well structured, easy to read and well presented. – Schedule could also include Project report chapters such as Literature review, Research Methodology and Evaluation chapters. * Project Design: + 2 pieces of design work related to the practical element of the project have been documented. – could be described.	20	13
5. Transferable Skills for Life and Professional Practice:		
New skills: + Potential to develop new skills documented. – Additional non-technical professional/soft skills could also be documented. Report: Good structure, format and presentation. + Title page.	20	15

+ Toc. + Introduction. + Conclusion. - Try to use third person sense and to avoid using 'I' when writing reports. - Each report section could be numbered. - Some spelling/grammar errors in places. - On-time and plagiarism check: /		
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