Technical Consultant

# Outcome 1: Plan, select and use appropriate IT systems and software to meet needs

## Describing the purpose of IT in modern business

The use of computers has defined the modern business. In economies such as Germany we have seen a rise of computer use in the workforce from 8.5% to 35.2% in the years 1979 to 1993 [1]. In 2020, the use of computers or more commonly known as IT is now ubiquitous. It has streamlined the processes of planning, bookkeeping and communication from long hours of entanglement between pen and paper to relatively instantaneous few presses of some buttons. The change in the backroom has also progressed into the front as well. IT is used in every sector of business from hospitality in booking hotels to groceries where you bill is tallied with little to no effort.

IT is so intrinsically linked to all businesses that its developed its own sector worth £149 billion in 2018 in the UK alone [2] and is expected to continue growing “Tech vacancies account for 24% of total vacancies and over the period 2015 – 2018, they grew by 120%” [3]. The demand in IT specialists seems as though it will never be satiated as technology develops and we are permitted more possibilities than ever before. IT is finding its path to an even more central role of our businesses and by extension our society.

#### References:

[1] - The Impact of Computer Use, Computer Skills and Computer Use Intensity: Evidence from WERS 2004 – Peter Dolton, Panu Pelkonen

[2] - <https://www.gov.uk/government/news/digital-sector-worth-more-than-400-million-a-day-to-uk-economy#:~:text=Digital%20sector%20worth%20more%20than%20%C2%A3400%20million%20a%20day%20to%20UK%20economy,-New%20statistics%20show&text=New%20government%20figures%20show%20the,cent%20of%20the%20UK%20economy>.

[3] - <https://technation.io/bright-tech-future/#executive-summary>

## Describing methods, skills and resources needed to complete digital projects successfully – what do you need to make projects successful? What tools? What skills?

As IT has grown and developed within businesses, resources have been developed and continue to grow to ensure a smoother, more efficient work process. All good projects require careful planning and project management. This is where programs such as Trello come in. They allow the development team a sight into the macro scale of the project to develop an understanding of their final product and a micro scale list of tasks and deadlines in order to keep the ship running smooth and make guided progress. Programs such as Microsoft Teams or Slack allow project members to instantly communicate and share information with each other to solve problems.

These programs allow for wider collaboration with people to split monumental tasks [1] with a pool of talent that branches outside of a traditional office, but to anyone across the world with a computer, internet access and a grasp on the project’s primary language. It breaks down previous potential barriers to allow for more complex and ambitious projects.

#### References:

[1] - <https://www.birmingham.ac.uk/schools/metallurgy-materials/about/cases/group-work/why.aspx>

## Plan and carry out tasks using IT – e.g. making your website. How will you plan it? Include a link to your trello board.

“At its core, IT project management is planning, scheduling, execution, tracking and monitoring…”. [1] This points to the meticulous planning involved in any IT project. The first step required is to establish the task and its scope. This allows us to see what requirements must be met to begin. The budget allocation in terms of finances, personnel and hardware.

A Gannt Chart [2] provides a timeline of tasks required to complete the project with further complex features such as link dependencies, milestones and a critical path. The critical path shows the series of tasks of highest importance to complete the project and provides focus in the project in case of delays or issues. Other tasks can be less prioritised, and resources allocated to the critical path to ensure the deadline is met according the client’s requirements.

A Kanban Board [3] provides a to do list to control the workflow of the project’s execution. It shows the allocation of tasks to personnel and allows team members to create notes such as bug reports or communicate with the team on work they need.

For example, if I had a brief to develop a website, I would first create a brief plan and budget to see how much licences and other web developing fees cost. Using a website such as GoDaddy to create my website link, Trello to make my Kanban board and Slack to communicate with my team. Throughout the project I would need to monitor our progress and allocate our resources to complete the critical path first before working on other lower priority tasks.

#### References:

[1] - <https://www.projectmanager.com/it-project-management>

[2] - <https://www.gantt.com/creating-gantt-charts>

[3] - <https://www.planview.com/resources/articles/manage-projects-online-kanban-board/>

## 1.4 Describe the risks that might impact digital projects – what causes digital projects to fail? Why?

Every task created in the planning stage must have a risk assessment to highlight the problems that may come to surface and how they will affect the wider scope of the project. “A good digital project planning will have “Known/Known” risks-built in.” [1] which means that contingency measures must be constructed for problems you “know” may arise and “know” how to deal with. If one of those is unknown, the time must be dedicated towards solving those issues before beginning a project.

Technological infrastructures may also change. It is key when working in IT to know that your product will be reaching people with highly differing machines. Compatibility testing of browsers, operating systems and hardware are key to provide the intended and uniform experience to all users [2]. Furthermore, the software you use now may become outdated in a few years and struggle to work on future hardware so it’s imperative to include the future and a maintenance package as part of your plan. Allowing room to manoeuvre in the future in terms of code and budget will mitigate the unforeseen risks of a project.

#### References:

[1] - <https://www.interruptdelivers.com/themash/what-is-risk-in-a-digital-project-and-why-should-i-care>

[2] - <https://www.cigniti.com/blog/compatibility-testing-core-digital-transformation/>

## 1.5 Describe how you would go about selecting and using IT systems and software – how do you select the right kind of technology for the job?

In the vibrant economy of IT, there is a healthy competition of software used for IT projects and the choices range from OS to communication. Depending on the project, you will be able to identify which type of software you should use by aligning its strengths to your needs.

Choosing a video game engine is one of those choices. [1] There are a range of highly sophisticated engines to use and they all have highlights and optimisations for different types of games despite all offering the ability to create the same type of game. Engines such as Unity are free for new game developers earning below a threshold of $100K and have a long history of use for smaller 2D games, whereas Unreal Engine is capable of a lot more powerful things and is a top choice for VR, but require a more powerful computer to use.

As a user of these systems you will also need support from those developers in forms of contact and regular updates. Android phones update roughly every 60 days [2] and sometimes they cause software for previous firmware to now act defunct. If the software isn’t kept up to date with the firmware, then all your hard work linked to that software will have all gone to waste when it doesn’t work on newer phones.

#### References:

[1] - <https://gamedevacademy.org/best-game-engines/>

[2] - https://www.gizchina.com/2019/01/21/how-often-android-smartphones-are-updated/#:~:text=As%20for%20Android%209.0%20system,can%20do%20it%20every%20month.

## 1.6 Describe and provide analysis on how your chosen technologies have helped you achieve your outcomes. – How has trello helped you plan and how can git and GitHub help with your code’s version control.

My chosen technologies not only allow me to complete my tasks set, but I have chosen technologies that allow me to streamline my work process. Starting from the conception and planning stage, Trello has allowed me to set a list of tasks to complete and review my progress alongside deadlines. Uploading related work to the task also helps me keep track of the different parts of my project for when I combine the work together.

Github has a feature that shows the timeline of your code and work. Allowing me to access earlier versions of my work in case of an unintended bug or to restart my work at a simpler point of my code if the scope of my project changes.[1]

Visual Studio Code which I am using to write my code is highly sophisticated and offers help with syntax to lessen my workload and pinpoint my problems. I can also download extensions which provide better colour formatting and AI suggested improvements to my code.

#### References:

[1] - <https://github.com/features/project-management/>

## 1.7 Describe legal guidelines and constraints that impact digital projects – How does GDPR impact digital projects?

The GDPR provides data protection for citizens in the EU [1]. It provides an additional cost to implement the code required for allowing cookies and ensuring your practices match the extensive guidelines checklist [2]. The practices around data privacy has become a contentious issue as companies have seen the benefit to harvesting their user’s data to sell off to advertising companies. The monetary benefit scales considerably if your website or app can generate a lot of traffic and it will be difficult to reject this additional revenue income.

Key guidelines include that the consumer can see all the data that you have collected from them and they be notified it is being tracked or shared to third parties. Collecting data also opens the requirement for a data protection position to keep them secure and not easily acquirable for nefarious means.

For my project, seeing as it is made for educational purposes with no route to profit, I will be exempt from any legal obligations if I clearly state my intent in the page.

#### References:

[1] - <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/>

[2] - <https://gdpr.eu/checklist/>

# Outcome 2: Review and adapt the ongoing use of IT tools and systems to make sure that activities are successful

## 2.1 Review the ongoing use of IT tools and change approach as needed – in making your own website, are you happy with the tools you used?

Seeing as I was working on a small project alone, I didn’t need to upload multiple versions of my work to Github and track my progress as I initially intended. However, I found myself using other tools such as Google or Chrome’s inspect feature to gather more information in creating my website. Chrome was integral to my completion as it allowed an insight into how similar websites to mine are created, I was able to instantly test small changes in my CSS styling using Chrome to ensure the best presentation I could. Trello’s deadline features were also important to keep me on track with my work.

Overall, I am happy with the tools I used and next time I would aim to use the multiple tabs of Visual Studio Code more and work on my HTML and CSS side by side.

## 2.2 Describe whether the IT tools selected were appropriate

I believe that the tools I used were appropriate for a small solo project. Visual Studio Code was lightweight and highlighted any syntax errors I made. The others were also appropriate and the key similarity among all of them were that they were free. This low entry cost allowed me to create a website without any prohibitions.

## 2.3 Assess the strengths and weaknesses of your final project

Assessing my website, I can draw strengths from my html layout which was clear and as concise as possible. Each of the divisions were discrete from another and relayed a visible flow in my website from the header down to the footer. Editing my tables for each seasonal statistic was incredibly easy and allowed a consistent layout between my different links.

However, there were weaknesses in my styling. I had trouble figuring out the CSS and there are parts of my code where the same code was overlapped from the initial division down to specific points. I was able to show use of class and id selectors which I’m happy about, but I could have used more id selectors. I also had issues with my box sizing, and it resulted in a container overlaying my header and making a button unusable during the main pages, but it worked in the about.html which is where it was necessary.

## 2.4 Describe further improvements you can make to your project

Provided with more time, I could improve my styling with background images and boxes for my lists and tables. I also failed to test the website on a mobile which is critical in the modern era for a website.

Much to my chagrin, I was disappointed to learn that many of the original features I wanted to include such as displaying new tables on clicks were reliant on JavaScript. All the websites I modelled used JavaScript for an additional flare and effects which greatly improved the presentation by adding animations and working buttons, but I was able to simply add more html links to achieve my desired response.

## 2.5 Review outcomes to make sure they match requirements and are fit for purpose

I was able to create a website that showcased my HTML and CSS knowledge. The HTML and linking to other HTMLs work as intended and I created a consistent styling sheet that works on all the links. Furthermore, I showed off my project management skills using trello extensively through the project and uploaded the relevant files to each of my tasks. I was also able to use deadlines in my trello board and leave comments relating to the work.

# Outcome 3: Develop and test solutions to improve ongoing use of IT tools and systems

## 3.1 Review the benefits and drawbacks of IT tools and systems used in terms of productivity and efficiency

Firstly, GitHub is useful as a repository for coding. I can upload work and view a retroactive timeline of my what I did and uploaded, but it provided a complex URL link to my website and wouldn’t be appropriate for commercial use. Trello is great in creating tasks, but I found that the calendar view for timelines weren’t well connected as you had to configure for each view separately. Drawio provided stock wire frames for a website, but I found it’s captioning and text feature for boxes to be lacking. I would have preferred to name each box independently and clearly so I can easily track my HTML divisions.

Visual Studio Code and Chrome used concurrently were very effective and efficient. To test and run my website. I was able to make instant changes on chrome to see results and translate them into Visual Studio Code easily.

## 3.2 Describe ways to improve productivity and efficiency

With greater knowledge of HTML and CSS, I believe I would create a better plan for my work. I had to change my wireframe several times to get it working within my ability and it led to a lot of slow debugging to see what would make my website work. I also will work with my HTML and CSS as I write my code. Defining my look as I write more content would have saved me from a lot of compatibility issues with my CSS instead of writing them all in one go.

## 3.3 Develop solutions to improve own productivity using IT in digital projects

If I were to work on a bigger project with more people, I would write more detailed cards on Trello and GitHub. I also failed to use comments in my work judging it as simple. When working with people or looking back at my work in a bigger and longer project, notes will be essential to debugging and changing my work.

## 3.4 Describe how you would go about testing digital solutions

Coming out of this project with a greater understanding of web development, I now know what features I need more than others. A proper and cleaner drawing tool would be necessary to create plans to make a website and I would investigate simpler web hosting sites than GitHub which required a lot of finnicky management to work such as naming all my files lowercase.

# Outcome 4 – Unit 2 and Website description

## 4.1 Describing the content and layout for each page

My website produces the statistics for professional footballers, Lionel Messi and Cristiano Ronaldo over the past 5 seasons. The Index page shows a comparison for the last full calendar season in the main container. Included within is a list of seasons which are hyperlinks to different calendar seasons and their corresponding stats.

In the footer is a disclosure to copyright and a link to the About page. The header remains consistent among all pages.

## 4.2 Describing copyright and other constraints affecting websites

I used an image from sky sports in my header which is copyrighted, but I clearly explain in my footer that it is solely used for educational purposes and no profit will be made from it. I also don’t take any cookies or information from the user which circumvents me from fulfilling the GDPR rules. Copyright has a big affect on websites as they become more marketable and a greater source of income. Companies are on the lookout for abuses of copyright to claim and it is important to use work you have pay for or are free to the public.

## 4.3 Describing access issues that need considering

Access on Chromium browsers work as intended, but I haven’t tested it on older browsers such as internet explorer or mobiles. Flexbox is great for formatting of different sized screens as it wraps the items in depending on the screen and browser size so all relevant information is available to the viewer.

## 4.4 Describe which are the appropriate filetypes for websites

.html, .css, . jpg, .png, .ico files were used in my website for layout and image grabbing purposes. In the future I can include .js files into my website and their related files.