2. Problem Statement

The Case of Chronologic

Chronologic Ltd is a Plymouth-based company that has been manufacturing luxury watches for 25 years. Recent marketing research indicated their customers are prone to switching to wearable smart technology. To ensure the future profitability growth of the company, the Board of Directors has recently decided to open a new manufacturing facility capable of assembling a new luxury Android-operated smart watch. Nottingham has been selected as the best place to locate the manufacturing facility. The company wishes to initiate and plan a project to open the new manufacturing facility in Nottingham.

Some aspects of this new facility development project have already been decided:

• The site of the facility has been selected and a temporary lease agreement signed for the site. The site is a detached unit in a newly built industrial park and has necessary office space and a suitable building for the production and warehousing processes, as well as spaces for parking. The building has the necessary utilities but lacks basic support IT infrastructure (e.g., office computers, Wi-Fi routers, printers, telephone devices). The facility will be ready and available to Chronologic on the 2nd of September 2024.

• All necessary machinery and equipment for manufacturing the watches will be provided by Chronologic in Plymouth. Assume that two containers of machinery and equipment need to be transferred from the Plymouth site.

• The IT infrastructure will be purchased from a company in Birmingham. No order has been placed. The company from Birmingham has said that once the order is placed the equipment will be ready for shipping in 1 week and it is the responsibility of Chronologic to arrange shipping.

• Staff from Plymouth will prepare the facility by installing all machinery and necessary IT equipment.

• 24 local workers are to be hired and trained in readiness to operate the facility. At this stage, a training plan has been prepared which specifies 1 week of training in Plymouth and 2 weeks at the new facility. The time estimates assume 5 Plymouth staff are to deliver the training in both locations.

All the above aspects have been integrated in some preliminary planning work that has taken place in the company, leading to the development of an initial Work Breakdown Structure (WBS) (Appendix A), and the identification of activity dependencies and time estimates (Appendix B).

The goal of the project you have been asked to analyse is to make the new facility operational. You may assume that other related projects have been completed or are also ongoing (e.g., in relation to legal issues), and are therefore out of the scope of your project.

The proposed date for the kick-off of the facility project is the 2nd of September, 2024 (i.e. no work for this project can be carried out before this date). The Board of Directors want to have a plan for how to get from where they are today to having the new facility operational (actually running), and have asked you to propose a schedule addressing the following concerns:

Question 1:

By utilising the information provided in the Appendices and the additional activities you have integrated, and without considering resources at this stage, what is the duration of the project using the most likely durations and what is the duration of the project incorporating the three points of estimates (Appendix B)? Justify your approach and comment on the outcomes. [*Suggested maximum word count*: 300]

(20%)

Question 2:

At this stage, based on the information provided and any assumptions you consider appropriate, develop resource histograms for the most likely duration of the activities (utilise the information provided in the brief, and make assumptions, i.e., your own recommendations to the company for resources required to perform the activities). When do you estimate the project will be complete? Justify your approach and comment on your estimate.

[*Suggested maximum word count*: 300]

(20%)

Question 3:

Critically compare and discuss (i) PERT and (ii) Monte Carlo simulation analysis, and their relevance for this project.

[*Suggested maximum word count*: 400]

(20%)

Question 4:

The company has limited knowledge of monitoring the progress of projects. Critically explain and compare the method(s) and scheduling options available that may be relevant to this project.

[*Suggested maximum word count*: 1,000]

(40%)

3. Preparation & Submission

The assignment comprises 4 questions (Question 1 to Question 4) and you should answer all parts. Please answer each part and sub-part in separate sections (each section should have a title relevant to the question, including the question code, i.e., Question 1, Question 2, etc.). The proportion of marks available for each part is indicated in the brackets below each question.

In addressing the questions of this coursework, clearly justify your approaches followed in the answers and highlight any assumptions made.

For Questions 1 & 2 you are asked to cover the more technical side of Project Management, i.e., to produce an operational plan which will include the schedule, and addresses resource requirements. When

answering these questions, it is not necessary for you to describe the Project Management techniques or refer to papers or textbooks about the methods.

For Questions 3 & 4 you are asked to respond in an essay format. In these answers references to background reading will add value (including the module core text and other sources).

The maximum length for the coursework is 2,000 words (excluding the cover page, table of contents, lists of figures and tables tables/figures, references, and appendices). There is no penalty for using fewer words. Appendices are optional and can be used to provide background analysis and/or additional information or diagrams; i.e. they can be used to justify points made in the main text. You do not need to provide an executive summary, an introduction section, or overall conclusions at the end of the report.

The submission should be entirely your own work. Scanned handwritten drawing(s) can also be accepted for electronic submission, but please note that they should be embedded in the document (i.e., not as a separate file); it is the student's responsibility to ensure any such part is legible and appropriately structured and presented. The recommended font styles are Arial or Verdana, size 12, and you should use single line spacing. Paragraphs should be separated by an empty line. Normal referencing rules apply (please use the Harvard System). All contents of the report should be legible when printed on A4 paper size.

The deliverable for the assessment component is a report that should contain:

- Cover page;

- Table of contents;

- List of figures

- List of tables

- Relevant sections that present your work (analysis/discussion);

- References (for any additional data you may use in the analysis);

- Appendices (optional).

The assessment will be based on the submitted report only and will consider:

- The logic and balance of your interpretation and analysis of the assignment;

- How you have applied project management concepts, processes and techniques;

- Quality and style of the report, including structure, readability, and completeness. The quality of the report will not be measured on word count.

4. Appendices

4.1 Appendix A - Project WBS

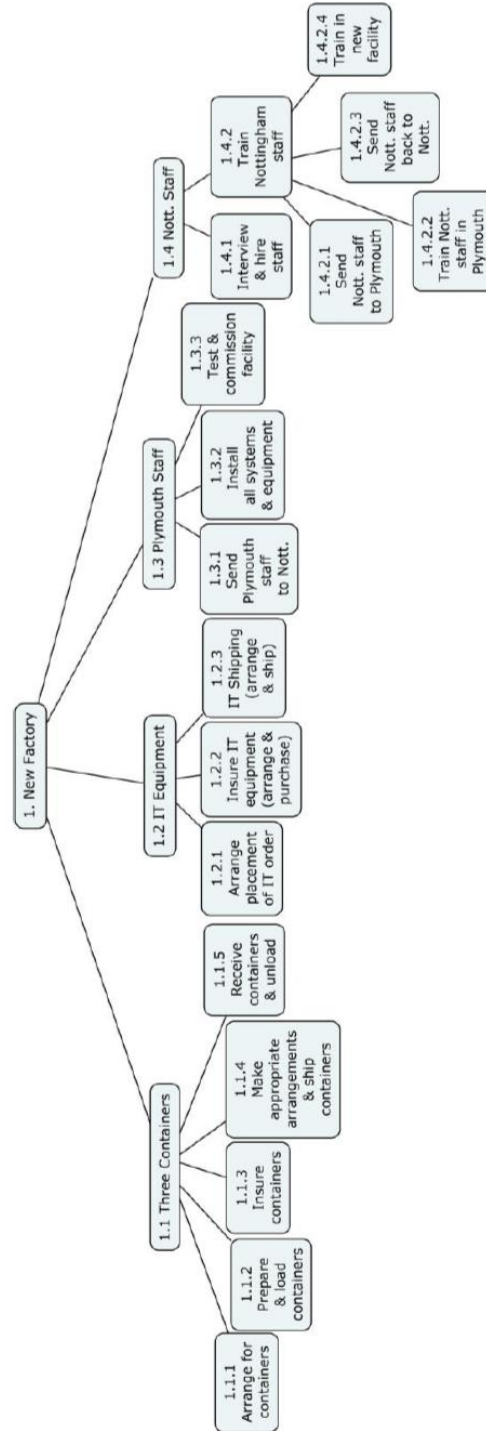Figure 4.1 below provides the initial WBS drafted by Chronologic.

Figure 4.1: The Initial WBS

Make arrangements = Includes, where appropriate: collect quotes, select the best offer, prepare internal documents and arrange for their approval and subsequent payment, etc.

4.2 Appendix B - Project Information

Table 4.2 below provides the project time estimates.

Table 4.2: Activity Precedence & Duration

Activities		Predecessor	Durations (days)		
Code	Name		Minimum	Most Likely	Maximum
1.1.1	Arrange for containers	-	3	5	10
1.1.2	Prepare & load containers	1.1.1	4	10	15
1.1.3	Insure containers	1.1.2	3	4	8
1.1.4	Make appropriate arrangements & ship containers	1.1.3	8	11	15
1.1.5	Receive containers & unload	1.1.4, 1.3.1	4	8	12
1.2.1	Arrange placement of IT order	-	5	8	10
1.2.2	Insure IT equipment (arrange & purchase)	1.2.1	3	5	8
1.2.3	IT Shipping (arrange & ship)	1.2.2	4	5	8
1.3.1	Send Plymouth staff to Nottingham	1.4.2.2	1	1	2
1.3.2	Install all systems & equipment	1.1.5, 1.2.3	20	30	40
1.3.3	Test & commission facility	1.4.2.4	5	10	19
1.4.1	Interview & hire staff	-	15	20	30
1.4.2.1	Send Nott. staff to Plymouth	1.4.1	1	1	2
1.4.2.2	Train Nott. staff in Plymouth	1.4.2.1	5	5	5
1.4.2.3	Send Nott. staff back to Nott.	1.4.2.2	1	1	2
1.4.2.4	Train in new facility	1.3.2, 1.4.2.3	10	10	10