

COMP3219 Assignment Instructions

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| Module: COMP3219 | Engineering Management and Law | Lecturer: | amg@ecs |
| Deadline: 20/11/19 | Engineering, Technology or Computing (ETC) Proposal | Effort: | Up to 60 hours |
| Feedback: 18/12/19 | and Group Project Management Review | Weight: | 40% |

Learning Outcomes (LOs)

- i. Plan and manage project and manufacturing/service processes, taking into account personnel, budgetary requirements, and potential risks
- ii. Assess market needs and contribute to marketing and pricing strategies addressing business opportunities and the achievement of customer satisfaction through innovation and entrepreneurship
- iii. The commercial context for engineering processes and business models that are socially responsible and environmentally sustainable
- iv. Critically analyse new products and technologies in light of management theory, professional, regulatory, social, ethical and legal obligations
- v. Work under time pressure to produce high quality work of a professional standard suitable for a non-technical (business) audience

Instructions¹

This coursework allows you to propose a new Engineering, Technology or Computing (ETC) initiative for a start-up company or an organisation of your choice. The possible scenarios and deliverables are specified below. The marking schemes is also provided. The assignment is *group work*².

The main deliverable is a report proposing a new ETC initiative for one of the scenarios given below and including an outline business case. You are asked to produce an initial plan for creating your report, to meet two or three times per week to ensure you make good progress, and to construct at the start of each week a detailed plan, including estimates of the effort required for each task, and to review the accuracy of these estimates at the end of the week. Each member of the group should complete a daily timesheet showing the hours spent on each of their current tasks. It is anticipated you will each work up to 10 hours per week on this assignment over a 6 week period.

In your report you are also asked to include a jointly written account of your group's approach to project and team management and to review the effectiveness of your working methods.

Possible Scenarios

You should pick *one* following scenarios and develop an initiative to suit this.

1. Propose a new ETC **start-up business**. In this case your audience would consist of the angel investors or venture capitalists you are trying to persuade to invest.
2. Propose an ETC initiative to the **University of Southampton**, who are planning to invest up to £600M or more over the next 10 years in physical and digital infrastructure, and have already acquired half of this capital via a 30-year bond. Your report should be written as if you were acting as a *consultant* for the University council.

¹ If any student needs these instructions in a larger font, please contact me and I will email you the Microsoft Word document.

² A few students are returning from a study break after week 5 when assignment 1 group-work commences. In this case, please contact me to confirm you have resumed your studies and I will supply you with an equivalent individual assignment.

3. Propose an ETC initiative to create or support a local **social enterprise** or charity. This initiative which works within Southampton or across the South Hampshire region to enhance its quality of life or economic attractiveness. Your report should be written as if you were acting as a *consultant* to the relevant councils (e.g. Southampton, Portsmouth, Winchester, or the Isle of Wight, though the actual list will vary depending on the details of your proposal).

In each scenario, you may assume a confidentiality agreement is in place so that you can safely disclose information which is potentially a trade secret, although it is unnecessary and indeed unwise to give the full technical specifications behind your proposal. As a group, you should weigh up the merits and interest of each of these scenarios and choose one to work on. The assignment is open-ended, so you may wish to consult me concerning your ideas.

ETC Proposal Group Report

Your report should describe the product, service or system you are proposing, why it is novel, and who it will benefit. Is it reasonable to think that your proposal is feasible, and why? What is its sustainability and environmental impact? What approach will you take to protect any intellectual property, and why? What other legal or regulatory issues exist that may need to be addressed?

Consider the potential market segmentation, its potential size and other demographics, and appropriate pricing and marketing strategies. In order to make your proposal sound attractive and convincing you are asked to include a suitable name for the proposed product, service, or system; a slogan or slogans that could be used to promote it; and a vision statement describing how it will change the world for the better.

Include in your report rough but realistic estimates of the cost of developing the product, service, or system you are proposing together with supporting evidence justifying your estimates and costings. Also include a proposed schedule of work, and a formal analysis of associated risks, including mitigations for any significant ones.

If your proposal is a commercial one, include a market analysis, calculations of optimum pricing and potential profits, which should be used to show that the proposed investment is worthwhile using a standard and appropriate investment metric such as Net Present Value or Internal Rate of Return.

If the target of your proposal is a public sector organisation, include an analysis of stakeholders, the benefits they are expected to receive, and calculations of equivalent financial benefit justifying the implementation costs.

You are also asked to include in your report your plans for writing the report itself. Indicate whether these plans were effective, and any measures taken to resolve issues with these, including your estimations of the effort required for each activity, any observed variance, and re-planning activities.

You should also review the effectiveness of the group. Discuss your team style and structure, skills and task allocation, and how any conflicts were resolved. Include in your review a concise critical reflection on relevant management theory relating to team and project management effectiveness.

Your proposal should be written and formatted to a professional standard. As this is a business report, include a variety of images, charts and diagrams taking up around half of each page. Your report should include a title page with your names and the total word count of your report; executive summary (up to 1 page); an automatically generated table of contents; numbered pages, headings, sub-headings, tables and figures; bibliography; and appendix. The main body of your proposal, the part between the contents and bibliography, must be *no more than 5000 words* excluding tables and figures. You should include detailed calculations of costs and benefits in your appendix together with an individual timesheet for each member of the team and supporting explanations of these. You must *cite your sources* using Harvard style referencing. Your bibliography is not expected to be more than 1 page. The report must be *no more than 25 pages* in total including all material from your title page to the bibliography and appendix.

Submission

One of your group (and only one) should submit your report using the ECS electronic hand-in system by 4pm on the due date given above. These *must* be in .PDF format. Failure to follow these instructions, handing in late, or exceeding the word or page counts given above will result in a penalty.

If one of your group is unable to participate for some unexpected reason, you are expected to re-plan and submit your group reports on time. If as an individual or group you need additional time, then submit a Special Considerations Form to request an extension, ideally before the deadline has passed and certainly as soon as practically possible. The ECS Special Considerations Board will then decide whether or not to grant your request.

If two or more of your group are unable to participate for some unexpected reason, then please contact me in advance of the deadline to ask for advice about adjustments that can reasonably be made.

Marks Breakdown

Please refer to the detailed *marking criteria* and *grading descriptors* given below. There are 8 criteria, each marked out of 5, giving a maximum mark of 40.

Each group member will be awarded the same mark, unless a specific request is made otherwise with a strong supporting case. As usual, late submissions will be penalised at 10% per working day. No work can be accepted more than five working days after its published or agreed deadline. Finally, note the University regulations regarding academic integrity and special considerations.

Marking Scheme

| | D (Marginal) | C (Satisfactory) | B (Good) | A (Very Good) | A+ (Excellent) | |
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| ETC proposal | Limited description, lacking clarity or depth. | Reasonable description of the idea. Some discussion of relevant issues. Acceptable work albeit with some errors. | Clear description of the idea. Some detailed discussion of relevant issues such as risk, feasibility, sustainability, and IP. | Very clear description of the idea. Some detailed & convincing discussion of relevant issues such as risk, feasibility, sustainability, IP and other legal / regulatory aspects. | Excellent description and discussion. Precise analysis of relevant issues such as risk, feasibility, sustainability, IP and other legal / regulatory aspects. | ? / 5 |
| Innovation, Novelty and Creativity | Your proposal is standard and you have not added significant ideas of your own. | A standard proposal to which you have added some interesting ideas. | You have taken some standard ideas and developed / varied these in novel ways. | Significant innovation has led to a novel and interesting proposal which will attract investment attention and interest. | A truly novel proposal with original elements that will impress investors and other stakeholders and gain serious attention. | ? / 5 |
| Market / Stakeholder Analysis, Pricing and Marketing Strategy | Interesting discussion, but limited analysis of the market potential. A clearer vision is needed. | Some discussion and analysis of pricing, market segments or stakeholders. Though you have a vision and sales pitch, this could be more inspiring. | Good market / stakeholder analysis. Credible pricing strategy. Clear vision and interesting sales pitch. They could be used to develop an effective marketing strategy. | Very good market / stakeholder analysis. A convincing vision statement and motivating slogans. Well justified pricing strategy. You have the basis for an effective marketing strategy. | Convincing and systematic market / stakeholder analysis. Powerful vision statement and motivating slogans. Clearly optimal pricing. An effective marketing strategy. | ? / 5 |
| Cost / Benefit Analysis | Some consideration of likely costs, benefits and return on investment. | Consideration of likely costs, benefits and return on investment with some supporting calculations. | Good consideration of likely costs, benefits and return on investment. Clear & accurate supporting calculations. | Detailed analysis of likely costs, benefits and return on investment. Clear, credible & accurate supporting calculations. | Convincing analysis of likely costs, benefits and return on investment with professional quality calculations. | ? / 5 |

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| Review of Project Management | You discuss some time and workload management techniques, but with low clarity and some errors. | Time and workload management techniques are addressed in a reasonable way, but with limited analysis. | Time and workload management techniques are addressed well, with good accuracy and some analysis. | Time and workload management techniques are discussed very clearly, and analysis is backed up by suitable evidence. | Time and workload management techniques are defined exceptionally clearly, with excellent depth of analysis and use of evidence. | ? / 5 |
| Review of Teamwork | You have limited understanding of your own strengths and weaknesses, and that of your team, and how these could be addressed. | You have some understanding of your own strengths and weaknesses, and that of your team, and are aware of ways you could have addressed these. | You have good understanding of your own strengths and weaknesses, and that of your team, although these have affected your progress. | You have very good understanding of your own strengths and weaknesses, and that of your team, which you have attempted to allow for in your work. | You have excellent understanding of your own strengths and weaknesses, and that of your team, which you have allowed for in your work. | ? / 5 |
| Writing, Structure and Presentation | This work is of marginal quality. Your writing, explanations and visuals are adequate, but not convincing. | Satisfactory work. Clear writing, explanations and visuals. Structure, argument and flow could be improved. | Good work. Clear writing, good structure and explanations and rich visuals. Some flaws in argument and flow. | Very good work. The report is professionally written, structured and presented. Your arguments are quite convincing. | Excellent work. The report is well- argued and convincing. The report is professionally written, structured and presented. | ? / 5 |
| Evidence and Referencing | A few interesting facts and figures, but not all are directly relevant to your review. Stronger evidence, and better citation is needed. | Some relevant supporting evidence from business sources. Some academic / independent sources would have added more weight. | Good contextual and quantitative evidence from some relevant business sources. More academic / independent sources would have added more weight. | Very good evidence from a good number of relevant business and academic sources, with detailed contextual information, metrics and case studies. These add weight to your work. | Excellent evidence from a wide range of relevant business and academic sources, with strong contextual facts, metrics and case studies. These give your work extra weight and authority. | ? / 5 |