**ASSIGNMENT/COURSEWORK PROFORMA**

**Assessment title:**

Managing Technology & Innovation (MTI)

**Main objectives of the assessment:**

* To enable students to exhibit their appreciation of the module material concerning innovation management relevant to global engineering enterprises.

**Brief Description of the assessment:**

Quantitative and qualitative evaluation based largely around a high technology product development covering most aspects of the taught module and inviting discussion and speculation to show awareness.

**Assessment criteria:**

**The students will be required to:**

* The report is in four parts worth 25% each.
* Prepare an individual assignment
* State assumptions.
* Full references and sources of all materials must be stated.
* Required content for formal report Parts 1 - 4 are given on the following pages

**Learning outcomes for the assessment:**

* Students will be able to demonstrate the following:
* Assess competences and product innovation in global manufacturing enterprises
* Utilize market research to understand consumers
* Prepare forecasts and market projections
* Apply planning tools for product innovation

**Assessment method by which a student can demonstrate the learning outcomes:**

Product innovation planning including customer and market assessment in a single report that is marked by module tutor.

**Format of the assessment/coursework: (Guidelines on the expected format and length of submission):**

**\****Note: full reports may not exceed 20 pages (including appendices)*

Format is a formal written report including charts/diagrams; calculations (with data; formula; workings and assumptions) and discussion/ comments.

* Report to be typed using Word in a 12 point font (any Excel based calculations should be copied into tables in the Word file using a minimum 9 point font).
* Typical length of report c18pages\* comprising Title Page; Abstract; Parts 1-4 and References. Additional information is to be placed in Appendices.

Note: include all completed Market Research forms (at the back).

**Indicative reading list:**

• ‘Global Innovation Management – A Strategic Approach’ by J. Christopher Westland, (2008), Palgrave Macmillan; ISBN: 978-0230524910 or latest edition (60% of the littreture re-view should be extracted from this book. I will need exact chapter, subject and page number as references as I do have the book with me).

Students are expected to access and utilize academic articles (e.g. using the “E-Journals A to Z” or the “Emerald database”)

• Journal article ‘Technology road mapping—a planning framework for evolution and revolution’ by Phaal R, Farrukh C & Probert D (2004).Technological Forecasting and Social Change 71 pp. 5-26

(I would like t have full reference of articles and journals, and they have to be accecable to me as I will review point by point)

**ASSIGNMENT:**

 **Managing Technology & Innovation (MTI)**

A major consumer electronics firm of your choice (such as Sony, Logitech, Hewlett Packard or a similar manufacturing firm) has the opportunity to develop a ‘Key card’ at a cost of £4M for a UK banking firm to supply their customers as a security measure for mobile banking. A ‘Key card’ is a small handheld device (like a calculator) that provides a unique PIN in real time that you read from your device and use when making a mobile banking transaction. The assignment is to investigate the potential market for a new product development using market research to gain insights into customer perspectives; to prepare a market forecast and make innovation management proposals.

**Prepare a formal written report:**

Prepare a Word document and write formally (i.e. avoid use of “I” or casual terms). Use charts/figures as appropriate. For calculations show formula; data; workings and results (preferably tabulated).

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Prepare a Word document and write formally (i.e. avoid use of “I” or casual terms). Use charts/figures as appropriate. For calculations show formula; data; workings and results (preferably tabulated).

Greater discussion; interpretation and evaluation is expected for higher grades (e.g. giving insights into the firm’s situation; the management implications and competitive comparisons), as well as appropriate use of business/management jargon and evidence of wider reading.

***Start each of the four parts on a new page (this is to aid the marking process).***

**Part 1 – Innovation Review**

**a) Stakeholder Analysis:** identify the various stakeholders for the proposed product and examine their likely viewpoints and concerns. Follow this with a short summary of the key items of the likely project concerns.

**b) Consumer Acceptance:** use the Technology Acceptance Model (TAM) to explain the factors that consumers consider when deciding whether or not to use a new product such as a ‘Key card’. What questions come from this that should be explored during market research? How might you go about obtaining answers to these questions?

**Part 2 – Understanding Customers**

Complete the ‘Market Research Interview’ form (provided on last page) yourself and ask three (or more) other adults not studying this module (ideally of different age categories) to each complete the form (every completed form must to be included in the back of the assignment).

**a) Product Attributes:** use Analytical Hierarchy Protocol (AHP) to examine how important each of the Factors are relative to each other by calculating the Relative Weightings for each Factor. Show your Matrix (and workings) for each respondent.

**b) Attribute Rankings:** calculate the Relative Weighting for each Factor for all your respondents (i.e. calculate the Average for each factor) and Rank the results – which factor is highest?

 **Part 3 – Innovation Planning**

**a) Market Forecast:** prepare a market forecast for the new product in the UK using the ‘Consumer Adoption Curve’ shown below. The forecast is to be based on UK Market size projections (I will provide you with the number once all accepted). Forecast Sales Revenues based on the likely Market Share for the firm (to be explained) and Projected Profits based on an appropriate Profit Margin for this project (between 24% to 40% is typical).

*Note: Explain the rationale behind your market forecast(s) - perhaps by basing it on published forecasts or historical data (for a similar consumer product for example). Show your workings and state any assumptions (e.g. assumed market share for the firm). Clearly state any sources.*



**b) Revised Forecasts:**

Identify two less favorable scenarios and prepare revised revenue/profit projections. Compare the Return on Investment (ROI) for the three forecasts and comment on the impact to a firm of these changes.

**Part 4 – Innovation in Practice**

**a) Innovation Case Study**: review recent product developments for a global product (for example, automotive vehicles) or by a manufacturing firm of your choice (for example, Honda or Caterpillar). What ‘competences’ did they need to develop? How was any technology ‘gaps’ overcome? What innovation strategies did they use?

**b) Inter Project Learning:** explain how inter-project learning may occur in a global consumer electronics firm. Discuss how you as an Innovation Manager may aid inter-project learning.

*Note: wider reading is expected for this Question including journal articles.*