

LEVEL 6 SPECIFICATION ASSESSMENT B

Student Name:		Student ID Number:	
Programme:	Innovation and Product Development for Industry 4.0		
Module code:	ACPA 6000	Contribution to Overall Assessment (%):	100%
Lecturer:	Alan Mumby	Internal Verifier:	Jaymie Phillips
Assignment title	Management of NPD Assessment B Developing the Design Brief	Word Count:	4,500
Submission deadline:	12 Noon 27 th of May 2022	Return date of provisional marks and written feedback:	TBC
Submission Method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) Alternative submission method (if applicable): Late submission of the assessment will result in a late penalty mark. Penalties for late submission: Up to one week late, maximum mark of 50%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.		
Academic honesty/referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

MODULE LEARNING

Outcome from this module:

1. Demonstrate a systematic understanding of the key elements that contribute to the successful gathering of market knowledge for the new product development.

TASK DESCRIPTION

Scenario Background

In this scenario You are NPD and Innovations Manager of a Carmarthenshire based SME which currently specialises in the manufacture of electronic breathalyser systems (See the website of Lion Laboratories for an exemplar product, for example the Lion Alcometer 500.)

A new product development project

Through a Knowledge Transfer Partnership with a local university, the Company identified an opportunity to extend the chemical alcohol detector system which is at the heart of their breathalyser products to cover the detection of other organic materials, including those generated in the breath as a result of various virus infections. The new system has been trialled successfully in the laboratory and the necessary patent applications have been registered.

In light of the current Coronavirus pandemic, the Company see great potential in developing a product that can meet both clinical and personal requirements for such virus detection and are therefore anxious to bring the new product to market as soon as possible.

However, the nature of the changes to the detector system is such that the existing breathalyser products cannot be employed as the basis for a new 'Virus Detect' product. Consequently, a completely new product design is required.

The Company have successfully prototyped the electronic and mechanical systems which form the new product and you have engaged a London-based company to design the 'physical envelope' and appearance of the new Virus Detector.

The company have decided to adopt a similar strategy to that which they use for their current range of breathalyser products, i.e. sourcing the electronics and mechanical elements of the product externally, and undertaking final assembly, testing, packing and shipping at the company's Carmarthen factory.

The Company CEO and Finance Director have jointly decided to seek alternative suppliers to those currently used, partly as a means of seeing if they might, as a result, be able to drive down the manufacturing costs of their existing products.

TASK DESCRIPTION cont'd

Project parameters and assumptions

For the purposes of this assessment you may assume that, on the basis of the prototype product testing, the company has already gained certification for the new virus detector from the various medical device regulatory agencies (In reality, this would be unlikely!).

The new product's electronics will be contained in a single circuit board. This will need to be sourced in a fully assembled and tested form.

The mechanical element of the detector (basically the breath sample capture system) will be fabricated from injection moulded parts. The Company have not yet decided whether to source this element as a fully assembled unit (as they do for their breathalyser products), or whether to source the mouldings separately and assemble the unit in house.

Preliminary research has indicated that China or Malaysia remains the most favourable source of electronic circuit boards - and that the UK or Europe would, for now, be seen as favoured source for the moulded parts.

The projected manufacturing volumes are 750,000 in the first year, and 3 million per annum afterwards.

The development of a Product Design Brief

As the NPD and Innovation Manager you're required to produce a Product Design Brief for all the company's managers; design & engineering, manufacture, finance, marketing, logistics etc.

The brief will outline what is required to bring the product into existence - and will inform the various managers within the company of the various touch points where their input or insight will be required or just appreciated.

The Brief you provide will have within it the following information.

1. A synopsis of the product and its potential as an NPD Project.
2. An analysis of the elements and architecture of the product that need to be considered.

N.B. Examples of the elements to be considered may well include (*not exclusive*) :

aesthetics	installation	performance	safety
branding	intellectual property	politics	size
company constraints	legal	processes	shelf life and storage
competition	life in service	prototyping	shipping
customer	materials	product cost	social & cultural
circular economy	manufacturing facilities	product life span	standards & specifications
documentation	market constraints	quality	testing
environment	maintenance & repair	quantity	time scale
ergonomics	packaging	reliability	weight

Module Code	ACPA6000
Title	Management of New Product Development
Date	29/04/2022
Level	6
Credits	20
Pre-Requisites	None

AIM(S)

- To evaluate the primary elements of the new product development process.
- To develop the knowledge, skills and expertise necessary to plan, implement and manage a successful product development process.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Systematically document and evaluate a detailed plan for an appropriate new product development process for a given product scenario.
- Make critical judgements on alternative approaches to new product development based on technological, strategic and financial / business considerations.
- Comprehensively understand the challenges inherent in incremental and disruptive new product development practices.

INDICATIVE CONTENT

- Knowledge acquisition and evaluation
- Business opportunity appraisal
- Product design specifications
- Distributive new product development
- Concept generation
- Prototyping and evaluation
- Technical and market testing
- Market introduction

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	200	100%

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Written report	4,500 words	100%

Assessment Summary	
Activity type	Percentage
Written exam	0%
Coursework	100%
Practical	0%
TOTAL	100%

READING LIST

Module Code	ACPA6000	
Module Title	Management of New Product Development	
Classification	Reading List entry	Electronic*
Essential	Paul Trott (2012), <i>Innovation Management and New Product Development</i> , 5 th edition, London: Prentice Hall.	☒
Essential	Joe Tidd and John Bessant (2013), <i>Managing Innovation: Integrating Technological, Market and Organizational Change</i> , 5 th edition, Wiley. Online reference material: http://johnbessant.org/the-innovation-portal/	☐
Essential	Robert Cooper and Scott Edgett (2005) <i>Lean, Rapid and Profitable New Product Development</i> , Product Development Institute.	☐
Further	Peter Drucker (2012) <i>Innovation and Entrepreneurship</i> , Taylor and Francis.	☒
Further	Malcolm Goodman and Sandra Dingli (2013) <i>Creativity and Strategic Innovation Management</i> , New York: Routledge.	☒
Further	Journal of Product Innovation Management	☒
Further	Journal of Engineering and Technology Management	☒
Further	Technovation	☒
Further	Journal of Product and Brand Management	☒
Further	Production and Operations Management	☒

