MSc Student Consultancy Research Projects

Lancaster University
Management School

Programme/degree

Postgraduate company-based dissertation project with the Department of Management Science for

MSc Business Analytics; MSc Marketing Analytics; MSc Logistics & Supply Chain Management

What is a student consultancy project?

We work with innovative organisations to offer business-relevant challenges for our students to address over a placement of around 12-16 weeks full time. Students can be based either on-site with the partner business, at the University, or a mix of the two.

Working individually, our students consult with the client in order to plan, carry out and analyse a decision related issue. They present their findings to the client in a final report.

What expertise is on offer?

Investigative and analytical expertise in processing data and in the extraction of meaning from complex datasets, through taught techniques:

- **Data Mining / Clustering/ Business Analytics** - eg predictive modelling, statistical data analysis, used in many fields, including machine learning, pattern recognition, image analysis, information retrieval, bioinformatics, data compression, and computer graphics.
- **Business Process Modelling** (Computer Simulation).
- **Optimisation and Heuristics** – eg finding the best solution to vehicle routing problems, resource allocation, power generation and delivery logistics or solving queueing complexities.
- **Logistics and Supply Chain Management.** Understanding complexity of the supply chain affects in every aspect of a company eg pricing models for non-typical deliveries with ecommerce shippers or optimisation of inventory and warehouse space.
- **Operations and Service Management** eg impacts of complexity in process performance.
- **Forecasting**
- **Risk Analysis**

Project Deliverables

A business report addressed to the client (9000 words) containing the results of the research, analysis, models and recommendations in relation to the project brief and in subsequent consultation. If required, a presentation to the organisation discussing the findings, recommendations and future options can also be arranged prior to final write-up.

Students are expected to perform to a professional standard in the client projects, and their Project mark will reflect the extent to which this has been achieved. Project performance is one third of the award of MSc and marked by the academic supervisor after consultation with the client.

About our students

Management Science students come from a mix of numerical degree backgrounds such as engineering, maths and computer science to economics and geography. By the time our Masters students undertake this project they will have gained in-demand analytics skills such as: quantitative modelling, Computer Simulation, Stochastic Modelling, Computer Programming using Python and R, Forecasting techniques, SAS Programming, Operations and Supply Excellence and Strategic Sourcing.

Students will have developed business and subject domain knowledge required to maximise the potential of analytics and decision science brought about by business operations, governance, services and technologies. The students are interested in shaping business decisions and operational innovation – whether as part of a fast growing company or within large-scale organisations.

Recent postgraduates of our programmes can be found in many of the companies they have performed projects for, from fast growing start-ups to large Global brands such as Deloitte, Nielsen Innovation Practice, Amazon, Google, FIFA, BT, TESCO Commercial Science and Virgin Atlantic.

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Timeframe

The projects take place over 12-16 weeks starting at the end of May each year.

30 April 2018	Deadline to submit a project outline.
Early May	The programme director allocates students to projects.
w/c 21 May 2018	Initial meeting with the students. This signifies the start of the project.
28 May – 31 August	Project takes place.
14 September	Deadline for report/deliverable to be shared with the client.

The Process

We will work with you to put together a project brief. The brief should outline your organisation's market place, background context to the problem, potential data sources and your team to which the work is relevant, as well as the desired outcomes (deliverables).

Projects are allocated to the students based on their bids, rankings and suitability. An initial meeting will then be arranged by the student which marks the start of the project. The students will have an academic supervisor pertinent to the field who will advise them throughout the project, as well as access to all other relevant expertise, journal publications and resources of the department, as appropriate. However the communication largely takes place between the client and students, who are usually site based. This affords students the maximum opportunity for learning how to consult effectively with managers in organisations. Our Partnerships Manager, Georgie Watson, is also available throughout the project as an additional point of contact for the client.

Number of students per project

Normally projects are performed by individual students unless the breadth of work demands a team approach. Multiple projects per client are also encouraged for shared learning.

Location

Students may be site based or at Lancaster University with an agreement to undertake travel commitments as your project demands. We recommend the students visit your organisation at least once so they can experience how you operate and meet with any other key personnel aside from the main contact. Any travel expenses incurred by the students are expected to be covered by your organisation (see fees/costs).

Costs

A contribution of £3K+vat is sought from partner organisations per project or £2K+vat per project if more than one. We request the fee primarily to ensure that the project is of real value to the organisation. The income supports the department's external activities with industry, benefits teaching and research, and allows us to work with charities and the NHS. Our students are well regarded by employers because of this training, so it is a small fee in comparison to consultancy costs but we expect similar standard of delivery. No invoice is raised until the partner agrees the deliverable is of acceptable value.

Travel and out-of-pocket accommodation costs. These are costs beyond the equivalent Lancaster based living costs (Current accommodation costs in Lancaster are £110p.w). A fixed budget can be pre-agreed.

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Confidentiality

At the start of the project all students and participating organisations are required to sign an agreement that sets down the basic terms under which the project will operate and aims to cover the company interests as well as those of the students. By the students signing the agreement, they are required to abide by the issues directly affecting their involvement in the project, such as confidentiality/non-disclosure, warranties, liabilities, copyright and Intellectual Property Rights (IPR) amongst others.

Recent Projects Undertaken

Project	Partner
Process analysis in product-service system: A case study in Alstom Power	Alstom
Pricing Modelling: Anyvan Case Study	AnyVan.com
Headline markets analysis and Indirect traffic analysis for the development of new routes between airports	ASM-Global
Investigating the Volatility of the Portfolio Mix and Identifying Appropriate Methods to Estimate Risk Trigger Points	Barclaycard Credit Risk Office
Gas Demand Forecasting	BES Utilities
Short-term Electricity Demand Forecasting	BES Utilities
Forecasting Value Added Analysis: An evaluation of Judgmental Forecasting at Boehringer-Ingelheim (logistics forecasting)	Boehringer Ingelheim
Predicting Order Category for Ethernet Access Direct products	BT
Optimising Helicopter Transport of Staff to Morecambe Bay Offshore Platforms	Centrica Energy Exploration & Production
Explore determinants of the demand elasticity for convenience stores	Cooperative Group
Investigating Text Clustering Techniques Using R	Data Analytics (Peak Performance)
Hierarchical Forecasting Setup in SAP APO DP (Weekly APO)	DePuySynthes
Optimising the forecasting process	DePuySynthes
Improving long term sales forecast by factoring in external variables	GFK
Short Term Handset Demand Forecasting A Proposed Methodology	GFK
Revising Howdens' forecasting approach of their slow-moving "D-SKUs"	Howdens
Improving Supply Chain Coordination during New Model Launch in Jaguar Land Rover	Jaguar Land Rover
Body In White Complexity Cost Comparator	Jaguar Land Rover
Discrete Event Simulation Actual vs Plan	Jaguar Land Rover
Strategic Cost Model: A tooling to assist production capacity planning in automotive industry	Jaguar Land Rover
Management of Process: Waste in Batch Production Papermaking	James Cropper Paper Manufacturers
Analysis of capability on moisture in the drying operation of the papermaking process at James Cropper Paper	James Cropper Paper Manufacturers
Product Ranking	JDWilliams
The Drivers of Online Apparel Purchase Intentions	JDWilliams
Optimising Lancaster University's District Heating Generation	LEC
An analysis of the price elasticity of the demand applied to the product portfolio of LEGO Group	LEGO

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Project	Partner
How Can the LEGO Group Quantify, Estimate and Predict the Impact of Cannibalization Effects Across the Portfolio?	LEGO
New Product Forecasting	L'Oreal
Intermittent demand forecasting for MSF	Médecins Sans Frontières, (Doctors Without Borders)
Alternative Approaches to Monitoring Health and Care System Performance to Determine the Significance of Change	NHS England
Ocado Project: Green Van Policy	Ocado
Predictive Analysis for Repairs in Social Housing Industry	Orchard Information System
Location assessment of Pentland distribution centre	Pentland Distribution
Exploring the linkage between planning and forecasting: An operations perspective	Pentland Shipping
Carbon Legacy Analysis for Six Countries	PopOffsets
Promotion Bias	Premier Foods
Intermittent Demand Forecasting: The improvement of the performance on forecasting lump demand	Premier Foods
Emergency service forecasting methods comparison and development for Process Evolution	Process Evolution
Analysis and model of the PGA Tour Players' Putting performance	Salford University
Next Generation Predictive Logistic Processes: An Automated Kanban Forecasting Methodology	SAP
Optimisation of Warehouse Flow for Scapa Group Plc. Improving efficiency in the warehouse by smoothing flows and scheduling tasks using Lean and Kaizen techniques	SCAPA
Economic Analysis of Gene Therapy for Adrenoleukodystrophy	ScHarr
Production Efficiency Analysis Through Lean Principles	Standfast & Barracks
Long-term Forecasting of GHS Order Demand	Tesco
Simulation Model Aiding Strategic Decision Making in Road Assistance Services	TRANSLOG
Optimizing UNIQA Bulgaria's Motor Hull Underwriting Process	UNIQA Life insurance Ltd.
Increasing throughput and minimising operating expense by using visual MRPII	Velocity Composites
Improving Virgin Atlantic Cargo's forecasting capability	Virgin Cargo
Application of Queueing Theory: Developing a Model for Vehicles Required in Police Districts	West Yorkshire Police
Cost of forecast error measurement for the third party logistics	Yusen Logistics

Contact for discussion:

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