Institution: Buckinghamshire New University

Unit of Assessment: 19 – Business and Management Studies

a. Context

The Supply Chain Forecasting Planning & Policy (SCFPP) group has brought together two strands of research activity in Supply Chain Forecasting (SCF) and in Supply Chain Planning & Policy (SCPP).

The main audiences for Supply Chain Forecasting (SCF) have been supply chain forecasting companies, supply chain consultancy companies, and distribution and logistics companies. The main types of impact have been: i) software enhancement, ii) improved demand forecasting and consequent inventory savings and service level gains, and iii) enhanced understanding by users of forecasting methods, accuracy measures and judgemental over-rides of statistical demand forecasts.

These impacts relate to three specific streams of research in SCF at Bucks New University. The first stream has focussed principally on improvements in methods of intermittent demand forecasting and seasonal forecasting (particularly grouped seasonal methods). The second stream of research relates to evaluation of forecasting methods in terms of appropriate accuracy-metrics and accuracy-implication metrics, where the latter refers to measures which assess the effect of forecasting on such business metrics as inventory investment and stock availability. The final stream of research has assessed the impact of judgmental adjustments to statistical forecasts, particularly in an intermittent demand context.

The main audiences for Supply Chain Planning & Policy (SCPP) have been manufacturing companies, governmental agencies and international funding agencies. The main types of impact have been: i) increased productivity and new market development, ii) development of governmental strategies and policies, and iii) PR for funding agencies arising from successful case-study projects.

These impacts relate to inter-related streams of research activity in SCPP. Research has been conducted on the relative merits, with particular reference to productivity, of using foreign contract workers or local workers. This has incorporated the examination of governmental policies which support or hinder local employment in the wood-processing sector. Research has also been undertaken on the new market opportunities afforded by adopting sustainable manufacturing practices and standardised logistics processes, and the new openings for Foreign Direct Investment. This is a high priority for a number of funding agencies, including the European Union, and the successful conclusion of the research projects further strengthens their agendas to promote environmentally sustainable manufacturing and enhance employability in the region.

b. Approach to impact

In the Supply Chain Forecasting Planning & Policy (SCFPP) research group, engagement with user groups, beneficiaries and audiences has been via: i) Knowledge Transfer Partnerships (KTPs), ii) companies' involvement in externally funded research projects, iii) PhD supervision of employer-funded, or employer-supported, PhD programmes, iv) organised or contributed sessions in conferences with non-academic audiences, and v) articles for professional journals.

i) The group has a successful track record of co-research with companies by Knowledge Transfer Partnerships, with two completed prior to 2008 (MRC Business Information Group Ltd, Syncron

(UK) Ltd). In the first case (MRC), the partnership spanned seven years, starting with consultancy work and then proceeding to a KTP programme and to employment of the KTP Associate. In the second case (Syncron), the partnership spanned five years, starting with the company offering supplementary funding to a PhD student at the University, and continuing with a successful KTP partnership. Since 2008, members of the SCFPP group have undertaken two successfully-completed KTP (Acorn Engineering Ltd and Red House Group of Practices).

ii) There is also evidence of companies' support for less near-market research. SAF Simulation Analysis and Forecasting AG, and Ventana Systems Inc supported the EPSRC project, Forecasting and Inventory Management: Bridging the Gap (EP/F012632/1). SAF hosted the researchers (Syntetos and Boylan) for two visits to test out ideas in a real software environment, whilst Ventana Systems provided support for the System Dynamics aspects of the research. Brother International Europe and Valves Instruments Plus supported the second EPSRC project: Cognitive Mapping, System Dynamics and the Bullwhip Effect (EP/G070369/1). Both companies offered opportunities for interviews regarding their current and desired inventory policies and practices.

iii) Ioras has been engaged in one externally funded PhD project (Attah) and is currently supervising funded PhD projects (Offei, Marinoiu). These projects have received financial support from the Ghanaian Forestry Commission, showing evidence of a long-lasting partnership. Boylan is currently co-supervising a PhD project (Birek) which is supported by Severn Trent Water.

iv) Boylan spoke at the Forecasting Summit (2009), a practitioner-based conference jointly organised by the International Institute of Forecasters and the company Business Forecast Systems. He was also invited to speak at Oracle's Supply Chain Summit (2009) on supply chain forecasting to an audience of around 100 practitioners. Ioras has spoken about public procurement and sustainability of resources at the International Union for Forest Research Organisations (2010, with a return invitation for 2014) and at the Asia-Pacific International Union for Forest Research Organisations (Beijing, 2011).

v) Boylan has acted as Supply Chain Forecasting Editor for the practitioner-journal Foresight: the International Journal of Applied Forecasting, published by the International Institute of Forecasters. He has acted in this capacity since 2005 and has published five single-authored and four co-authored articles for Foresight during this period. Ioras has acted as sustainable resources editor for the International Wood Products Journal, Notulae Scientia Biologicae and Open Conservation Biology Journal.

The University has provided support for research impact through:

i) an 'Open for Business' Unit and its successor, a Faculty Enterprise Unit; these units have supported the preparation of bids and the ongoing management of the Knowledge Transfer Partnerships described above.

ii) mentorship by the Faculty Professors; Dr Ali and Dr Mohammadipour were both mentored by Prof Boylan, who has co-authored practitioner-journal articles with them, and supported them in extending their practitioner networks by, for example, introducing them to practitioners and soliciting invitations to business events.

iii) faculty events run for businesses: these events have been held at regular intervals and have promoted opportunities for knowledge exchange. The partnership with Acorn Engineering, for example, arose from such an event.

iv) faculty conference funding for practitioner-oriented events (eg Institute of Business Forecasting practitioner conference (Ali), Forecasting Summit (Boylan)).

v) a Personal Development Fund (PDF), through which a proportion of research surpluses are returned to an individuals' PDF (eg Ioras).

c. Strategy and plans

The SCFPP Research Group have identified the following research-impact goals:

- Work with more software companies to implement improvements in forecasting and inventory management packages
- Work with manufacturing and logistics companies to enhance their inventory management and sustainable manufacturing practices.
- Work with organisations to influence policy on sustainable resources.

The first objective is planned to be met by joint university-industry projects. This may build on the group's track record of successfully completed Knowledge Transfer projects or may be achieved by consultancy advice to software companies. For example, Syntetos and Boylan have been approached by SAP who have expressed interest in introducing the Syntetos-Boylan Approximation method into their software. We plan to work closely with them to ensure that this comes to fruition.

The second objective is planned to be achieved by similar means to the first, but may also capitalise on bids for major research projects based on the complementary expertise in forecasting and environmental sustainability. Such opportunities are currently being supported by the European Union and the EPSRC.

The third objective will be met by a programme of industry-related projects. One recent example is a project working with companies in the Canary Islands and the Netherlands, aiming to define an energy efficiency solution for sea water desalinisation. Other projects are currently in the pipeline, building on the established links with companies in the wood-processing industries in Eastern Europe and South East Asia.

d. Relationship to case studies

The Case Study with Syncron and JDA arose from a Knowledge Transfer Partnership (KTP) with Syncron and from consultancy work with Manugistics (which became part of JDA). The KTP was supported by central university departments and by mentoring from a colleague who had successfully completed a previous KTP and became a member of the Local Management Committee of the project described in the case study. The consultancy was supported by financial recompense for the university consultant, along similar lines to the Personal Development Fund described earlier.

The second Case Study consisted of a number of projects undertaken with the support of external funding. Bid preparation was supported by central university staff, as was the ongoing monitoring and reporting of the projects during their lifetime. The research continued work supported by DEFRA and British Council between 2005 and 2008.