Institution: University of Sheffield

Unit of Assessment: 19 - Business and Management Studies

Title of case study: Improving profitability and customer service through better management of reverse logistics processes in the UK retail sector.

1. Summary of the impact

Research at the University of Sheffield has led to the development of a Reverse Logistics Toolkit that enables companies in the retail sector, together with members of their supply chain, to improve management of the flow of surplus or unwanted products returned by customers. Companies using the toolkit have seen a reduction in returns of up to 40%, a significant figure given that total UK retail returns have been valued at around £6 billion per annum. The toolkit has enabled companies to reduce costs, improve service provision and reduce transport movements.

2. Underpinning research

Ten years ago reverse logistics was becoming more recognised as an important discipline within supply chain management. However, there was limited reference to managerial processes for reverse logistics in the literature and even less on the possibilities of using strategic management accounting techniques alongside other managerial disciplines to improve the management of reverse logistics processes. Consequently, Professor John Cullen has undertaken research to understand these processes and investigate ways of improving bottom line performance, customer service, and reduced transport movements.

Since joining Sheffield University Management School in January 2005 as a Professor of Management Accounting, Cullen's empirical research has focused on supply chain accounting and the management of reverse logistics. In May 2005, he began a collaborative research project, with Mike Bernon from Cranfield University, which aimed to develop a practical toolkit that would help managers to more efficiently and effectively manage their reverse logistics processes. The Department for Transport (DfT) funded the interventionist research project as part of its Sustainable Distribution agenda. The researchers also received additional funding from the Chartered Institute of Management Accounting (CIMA) to engage management accountants in the overall research project. Cullen and Bernon were equal partners in the collaborative research project. Professor Cullen's specialist expertise in supply chain accounting enabled the integration of supply chain accounting, supply chain management and reverse logistics management.

The interventionist nature of the research meant that the Reverse Logistics Toolkit was developed through intensive interaction at 13 workshops / industrial forums (each event was attended by an average of 20 managers), with managers from around 40 companies (such as Avon, Halfords and O2) connected to the UK retail sector. The workshops and forums took place between 2005 and 2007 [R5]. The project also built on Cullen and Bernon's prior research in the field and in particular their previous work with the DfT (2003 - 2004) which highlighted that companies can see up to 30% (and even greater within certain distribution channels) of their products returned by customers and valued total UK retail returns at around £6 billion per annum [R1]. The final Reverse Logistics Toolkit was published in 2008 [R2]. It is an electronic diagnostic and performance improvement tool which enables companies to audit their returns management activities and identify, as compared with best practice using a traffic light system, where opportunities exist to reduce costs and waste and improve customer service [R3]. A key driver of the toolkit was the need to understand costs and value creation across the supply chain. Consequently, the researchers have incorporated management accounting techniques such as quality costing, opportunity costing, activity based costing, and the balanced scorecard approach into the toolkit to improve both diagnosis and performance management [R2].

Alongside the toolkit, the research outputs have provided a conceptual framework which highlights opportunities for future research in reverse logistics [R4], they have provided a real step forward

theoretically by combining the theoretical knowledge of researchers with the craft knowledge of managers engaged in reverse logistics processes [R5] and also provided one of the first papers that has systematically and empirically explored supply chain integration in the reverse supply chain processes as opposed to forward supply chain processes [R6].

3. References to the research

R1. Bernon M. and Cullen J. (2007) "An integrated approach to managing reverse logistics", International Journal of Logistics: Research and Applications, Vol. 10, pp.41-56. doi: 10.1080/13675560600717763

R2. Bernon, M.P., Cullen, J. and Gorst, J.K (2008) *Reverse Logistics Toolkit (Self-Assessment Workbook)*, Department for Transport. [J.K Gorst was a research assistant employed at the University of Sheffield on this project].

R3. Cullen, J., Bernon, M.P. and Gorst, J.K. (2010) Tools to manage reverse logistics, CIMA Research Executive Summary Series (2010), Vol. 6, Issue 3.

R4. Bernon, M., Rossi, S., and Cullen, J. (2011) "Retail reverse logistics: a call and grounding framework for research", International Journal of Physical Distribution and Logistics Management, Vol. 41, pp. 484-510. doi: 10.1108/09600031111138835

R5. Cullen, J., Bernon, M., Tsamenyi, M. and Gorst, J.K. (2013), "Reverse Logistics in the UK Retail Sector: A case study of the role of management accounting in driving organisational change", Management Accounting Research. doi: 10.1016/j.mar.2013.01.002

R6. Bernon, M, Bastl, M, Upperton, J. and Cullen, J. (2013), "An exploration of supply chain integration in the retail product returns process", International Journal of Physical Distribution and Logistics Management. doi: 10.1108/IJPDLM-03-2012-0060

Details of Funding:

F1. Bernon, M. and Cullen, J. "Tools to Manage Reverse Logistics" – major project funded by Department for Transport (£230,000), resulted in the publication of the toolkit in 2008.

F2. Cullen, J. and Bernon, M. "Reverse Logistics" – project funded by CIMA (£9,500), completed as part of the CIMA Research Executive Summary Series, 2010.

4. Details of the impact

The case demonstrates economic, commercial and organisational impacts. The research findings were used by the Department for Transport (DfT) and by the Chartered Institute of Management Accounting (CIMA) to inform and encourage best practice within retail organisations.

Pathways to Impact – Government, Industry and Professional Bodies

Reverse Logistics was an important area of investment for the Department for Transport (DfT) as it fell within their Sustainable Distribution agenda. In 2008, when the toolkit was completed, it was put on their Freight Best Practice site [S1, S2]. This site, managed by AECOM, was highly regarded in the freight industry as it provided essential industry relevant information on topics such as saving fuel, developing skills, equipment and systems, and performance management [S1]. All materials were available to download free of charge. The site was archived in 2010 on completion of the programme's funding. Reflecting on the reverse logistics project a Manager at DfT said: "*the work undertaken by Bernon and Cullen in developing their Reverse Logistics Toolkit has played a significant part in providing organisations with the ability to review their reverse logistics processes and also identify performance improvement steps aimed at improving efficiency, reducing costs and improving customer service*" [S1]. In 2009, the toolkit was also published on the Chartered

Institute of Management Accounting (CIMA) website and follow-up workshops were held with CIMA members. In Feb 2012, CIMA and The American Institute of Certified Public Accountants (AICPA) launched a Global Joint Venture called Chartered Global Management Accountants (CGMA), a new professional designation for Management Accountants. The CGMA is designed to elevate management accounting and further emphasise its importance for businesses worldwide. Cullen and Bernon's Reverse Logistics Toolkit was one of the first twelve toolkits selected to feature on the CGMA website [S3, S4]. Approximately eighteen months after it had been featured, the toolkit's webpage had had 563 unique visitors and the toolkit itself had been downloaded 960 times [S3].

User Engagement and Impact

The 40 managers who contributed to the co-design of the toolkit through the industrial forums and workshops benefitted significantly. They were able to take ideas back to their organisations, share good practices, identify benchmarks, and implement new processes. Industrial partners who supported the development of the reverse logistics toolkit (named on the published version of the toolkit on the Department for Transport Freight Best Practice website) included Avon, Christian Salvesen, Consilium, Dale C Rockell, DHL, Entertainment UK, Fuel Champ, Halfords, LCP Consulting, Linpac, Menzies Distribution, O2, PC World, Stiller Group, Vivendi Universal Games and Wincanton [R2]. Statements from different company representatives were included in the final presentation to the Department for Transport. For example, a supply chain manager at Avon said: "*It has been useful to see that other companies face similar challenges, and to share experiences with colleagues working to capture the significant benefits this area offers, with the 'cradle to grave' approach across their business practices that it takes*" and a customer services manager at PC World noted that: *"The reverse logistics project is a great opportunity to meet with other retailers to discuss relevant issues and share best practice*" [S5]. Three examples from the many companies that have benefitted from the toolkit are detailed below:

Halfords Group plc

At Halfords, one of the organisations involved in the co-design, the impact has been extensive [S6, S7]. As a result of making several changes to its reverse logistics processes through the use of avoidance techniques and increased transparency of information, there was a 40% reduction in returns and, also due to the changes to the reverse logistics processes, non-compliance at stores level with agreed returns processes fell from 15% to 2% [S6]. As a consequence of specific interventions aimed at Far-East suppliers, Halfords' reduced its direct-sourced returns level from Far-East suppliers by 40% over a two year period resulting in a reduced risk of exposure to the business and significant financial and customer service improvements [S6]. Finally, thanks to changes introduced through the reverse logistics project, the value of returns during the period fell by on average £450,000 per month which represents an annual reduction of around £5.4 million per year [S6]. The Head of Quality & Cost Reduction at Halfords Plc was involved in the project from the beginning and the whole of the Halfords Reverse Logistics (Returns) processes have been influenced by the research work undertaken. A sample quote from him is: *"The reverse logistics project had a major influence on the introduction of new reverse logistics processes within Halfords. It helped to increase awareness of the issues and the large potential for improvement to both bottom line performance and customer service through the introduction of improved processes. The identification of new tools and the support provided by discussions at the workshops played a vital part in the implementation of change at Halfords"* [S7]. The work has impacted on relationships with all aspects of the supply chain and the new processes impacted on all 460 stores in the UK and also on supply chain partners with around 40% of supplies coming from the Far East [S6].

[text removed for publication]

[text removed for publication] the UK supermarket sector, [text removed for publication]. Managing reverse logistics is very important to this company. Utilising ideas embedded in the toolkit, which the company's Trading Account and Returns Manager downloaded from the CIMA website in 2010, he and the other members of the project team implemented new processes relating to returns avoidance, alternative disposition routes and performance measurement. These new processes have led to benefits and savings for the company [S8]. [text removed for publication].

Vax

Vax Ltd is a wholly owned subsidiary of Hong Kong based TechTronic Industries Co.Ltd (TTi); a multi-billion dollar company owning a large portfolio of brands within the power tool and floor care sectors. As a result of a review of reverse logistics processes which was influenced by engagement with the research team, a pilot scheme with two specific retailers resulted in significant improvements. Returns attributed to 'no-fault found' reduced by up to 40%. Pre-authorization of returns reduced the number of returns from one of the retailers by 90% within a short period of time. The annualised net savings from these initiatives was calculated at nearly one million pounds [S9: S10]. These savings figures are conservative as the full implications of designing out quality problems will take time to mature as future product families will reap the real benefits over the initiatives. For example, on one product line alone (not recorded in the figures above), the company has reported a 6% reduction in returns levels [S9: S10].

5. Sources to corroborate the impact

S1. Email / statement (Aug 13) from the Manager of research, CAEP and technical at Department for Transport (DfT) outlining why the research was important to the DfT and the impact on users of the toolkit.

S2. Department for Transport, Freight Best Practice Site, 2008. (Site was archived in 2010, version available: http://freightbestpractice.org.uk/default.aspx?appid=3705&pid=3544).

S3. Email / Statement from CGMA contact [Research and Development Manager] confirming the toolkits download information and outlining their perception of the value of the research.

S4. CGMA Website www.cgma.com – Resources –Tools Reverse Logistics Tool

S5. DfT – Final project presentation to Department for Transport (2007)

S6. Cullen, J., Bernon, M.P. and Gorst, J.K. (2011) *Reverse Logistics: Halfords*, CIMA (online). Available at: http://tinyurl.com/nfzhgay

S7. Factual statement (Aug 13) from the Head of Quality & Cost Reduction, Halfords corroborating impact described in Halfords.

S8. Factual Statement from the [text removed for publication] confirming that the company's [text removed for publication] downloaded and used the tool and that the company has observed benefits as a result of the changes made

S9. Factual Statement from current Operations Director at Vax corroborating impact in Vax

S10. The Operations Director at Vax, is one of the authors of the journal article listed as R6.