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Ambidextrous Supply Chain Strategy and Business Performance: a pharmaceutical wholesaler perspective.

E. Lambourdière ¹, E. Corbin ² and C. Savage ^{3, 1&2} Department of Transportation and Supply Chain Management, Institute of Technology, University of French West Indies. ³ Division of Transport and Logistics, University of Huddersfield

Abstract

Wholesale distributors in the United Kingdom and the United States are aware of the magnitude of the changes that have taken place in medicine distribution systems. They have responded with innovative logistics strategies to deal with this highly competitive environment. Their new services rely on an ambidextrous supply chain strategy (i.e. exploitative and explorative logistics innovation). This research explored those innovative processes and the results concluded that wholesale distributors are developing practices to achieve a high level of operational efficiency, which at the same time develop new logistics solutions to provide a competitive advantage, thereby securely maintaining their position in the drug supply chain.

Keywords: Pharmaceutical supply chains, pharmaceutical wholesalers, logistics innovation, ambidextrous supply chain strategy.

Introduction

Wholesale distributors located in the United Kingdom and the United States are having to face an increase in the level of uncertainty in pharmaceutical supply chains. Previously physical flows of medicines in the state systems were relatively uninhibited, but now both countries' governments are more reluctant to reimburse drug costs. In addition, other players, such as generic producers or logistics service providers, have appeared in the drug supply chain, and these have further complicated the business environment of U.S. and UK firms. Drug manufacturers in these countries are already attuned to the innovation required to deal with the ever changing logistics environment that continues to evolve. This is clearly demonstrated by the continual emergence of new management practices in the pharmaceutical supply chain in both countries. Wholesale distributors, responsible for the logistics, cannot ignore the changes taking place and, further, they are actively trying to develop innovative logistics strategies of their own. Thus, in order to survive and compete within their supply chains, they continually reassess the already ample logistics services they offer to their clients. The novel logistics services processes developed by wholesale distributors are based on a clever and complex mixture of exploitative innovation and explorative innovation. Therefore, this paper will demonstrate how this mix enables apparently moribund wholesale distributors have used strategies of incremental and radical innovation to secure their position in the pharmaceutical supply chain as well as improving their market share. Further, it should be noted that this has been achieved during an era that was supposed to destroy disintermediation.

Research areas

For a number of years, the environment surrounding the pharmaceutical supply chain has become increasingly complex. Technological innovation, mostly in the field of chemical engineering, is often regarded as the only solution that can be suggested to the drug producer. Logistics innovation as a solution is beginning to be explored by a growing number of actors operating in the UK and USA drug supply chains. This research concerns mainly the building of logistics innovation in supply chains, from the perspective of British and American wholesale distributors.

Methodology

In this work, innovation has been identified as the introduction of a new service offer or the use of new technologies to improve the competitive position of the company within the pharmaceutical supply

chain. This development, if carried out successfully, will enable the companies in question to become securely entrenched in the drug supply chain. Thus, the construction, deployment and reconstruction of innovative services are the strategic elements that enable the British and American wholesale distributors to improve their position in the pharmaceutical supply chain. The main analysis examines pharmaceutical supply chains using the concept of the ambidextrous supply chain strategy (Kristal et al., 2010). Kristal investigated the influence of an ambidextrous supply chain strategy on manufacturers' combinative competitive capabilities, which is defined as "the ability to excel simultaneously on competitive capabilities of quality, delivery, flexibility, and cost and, in turn, on business performance" (Kristal et al., 2010). From this perspective, the evolution of logistics services appears to be based on exploitative and explorative innovation processes (He, Wong, 2004; Chanal, Mothe, 2004).

Exploitative innovation is intended to improve and / or extend an offer made by a company to its customer. This improvement may be related to products, services, processes, etc.. Companies taking this route expect immediate results and tend to then embark on short-term strategic changes. Exploitative innovation, in turn, allows the company to maintain profitability and stabilize its position in a market in which it is already working. Taking advantage of core competencies of the business and organizational routines are very important components of exploitative innovation. These lead the company in a direction for which long term commitment is essential. The company that involves itself in such an approach will seek to introduce radical changes to its service production. Innovation exploration should allow the company to face the future with confidence. These changes will materialize in response to the introduction of new services and technologies to enhance the company's customer service offering. Such changes, which can be described as revolutionary, are generally made to allow the company using them to enter new markets and / or reach new customers. Explorative innovation can materially affect the technology trajectory and organizational routines of those applying them. If well done, it should enable the improvement of the company's sustainability.

It appears that the British and American wholesale distributors are innovative in developing both supply chain exploitation and exploration strategies. By creating new services, they pursue strategies for supply chain exploration, as well as developing standardized services or expanding the existing ones, they develop new strategies for supply chain exploitation. It is this agile link between exploitative and explorative innovation in the supply chain that leads to an ambidextrous supply chain strategy (Kristal, Huang, Roth, 2010).

A matrix has been developed to enable the processing of the data collected during the investigations – see figure1. When this matrix was completed, it enabled the assessment of how ambidextrous a supply chain strategy is. The approach to logistics is considered from a holistically and strategic point of view where management strategy is based on two practices: one within the supply chain operations and the other across boundaries.

Figure 1: Characteristics and impacts of innovation strategies developed by pharmaceutical wholesalers

	Alliance Boots (UK)	AmerisourceBergen (US)
Ambidextrous strategy - supply chain exploitation practices - supply chain exploration practices	*	*
Combinative comparative capabilities - Quality - Delivery speed - Process flexibility - Low cost	High	High
Business performance - Profit level - Market share	High	High

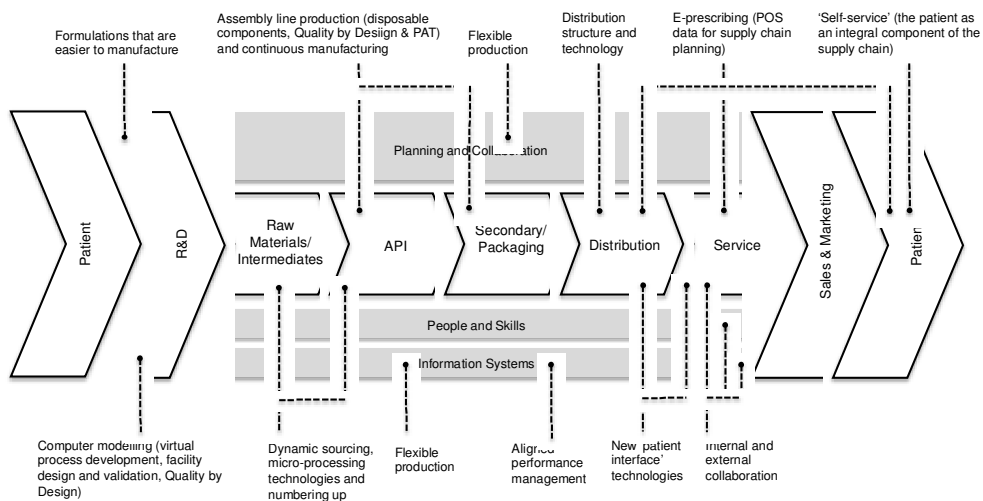
Other theories such as “competitive growth theory” (Roth, 1996), the development of combinatorial capacity, the theories of dynamic capabilities of knowledge-based view and the Law of Requisite Variety are also considered to carry out the data analysis. The interrogation of these theories has allowed us to add two more entries in our matrix. These two entries are the combinative comparative capabilities and business performance. Data were gathered from archival and secondary data as recommended by Calantone and Vickery (2010).

Results and Discussion:

Results

Traditionally simply responsible for administering pharmaceutical distribution, wholesaler distributors now seek regular innovation in logistics to develop strategies that are operational-logistics and business-sales driven in order to increase the volume of sales in their supply chain. Whereas the “original” wholesaler-distributors were not market oriented, the "new generation" are more attentive to customer satisfaction, using innovation at the heart of their logistics services to improve market share. This is the era of market strategy driven logistics solutions where conventional efforts are insufficient to provide competitiveness, instead it is the flow of products through pharmaceutical wholesalers that needs to be managed effectively. The "new generation" wholesaler distributors use ambidextrously based supply chain strategy to respond to minute changes in requirements in order to improve their performance still further and cement their position in the supply chain. Figure 2 gives a view on some of the areas that may provide opportunities for pharmaceutical supply chain improvement in the future.

Figure 2: Opportunities for improving the pharmaceutical supply chain



Source: adapted from PricewaterhouseCooper (2011, p. 10)

The Boots Alliance Company (UK).

The Boots Alliance group was created in 2006, by a merger between Alliance UniChem and Boots businesses. This new entity is now a leader in the health and luxury value chain in several economic territories of the world. Through a variety of buyouts worldwide, the company offers a wide range of products and services to its customers. The various acquisitions have enabled the company to engage in supply chain explorative and exploitative innovation.

The leaders of the group seek innovation of supply chain exploitation type because they wish to strengthen the company's presence in existing markets. Operating supply chain innovations are the most important in its "Pharmaceutical Healthcare Alliance" distribution division. Alliance Healthcare is a network of joint ventures and affiliates. For example, Alloga Alphega have the networks, skills and business know-how to bring new customized logistics services that the Healthcare Alliance needs to consolidate its market position in the physical distribution of medicines. When the company cannot provide a number of logistics services on its own account, partnership strategies allow it to provide its customers with innovative services. For example, agreements between manufacturers and pharmacists play a strategic role in the process of creating new logistics services. Product availability, frequency of delivery, accuracy, timeliness and reliability of the treatment of logistics flows are guaranteed by the wholesale distributor. Pharmacists are aware that, entrusting the management of the logistics of the distribution of these goods to Healthcare, the wholesale distributor allows them to increase efficiency and performance. The Healthcare company has also developed new activities for the industrial pharmaceutical supply chain businesses that want to outsource their entire logistics process flow. These services providers include pre-wholesalers, specialists in the direct delivery to pharmacies and drug delivery specialists.

British wholesalers / distributors also developed supply chain exploration strategy. This strategy can be seen in the purchasing policies of Boots pharmacy which has been developing for about 130 years. In Britain, Boots has been at the forefront of innovation in customer service. Boots Laboratories expertise has been focussed on customer requirements in terms of health and beauty. Further, during the whole lifetime of Boots Laboratories, its scientists have been responsible for the development of highly innovative products. By merging with the wholesale distributor Alliance UniChem, Boots have endeavoured to stabilize its distribution business and take a further step in its process development enabling innovative exploration of new areas. Thus, the Alliance Boots business deploys a strategy of radical innovation in order to develop logistics services that concentrate on the downstream health value chain. Alliance Boots has also signed a partnership agreement with the U.S. company Procter & Gamble (P & G). This agreement enables the wholesale distributor to rely on the capabilities of P & G, benefiting both from their sales network and the promotion of their pharmacy brands. The wholesaler also offers Almus branded generic drugs which are very popular in the UK. These drugs provide greater security for patients that use them because their presentation has been designed so that pharmacists and customers easily identify generic drugs by simply looking at the carton. The packaging gives precise information on the generic drugs contained in the boxes. In addition, Alliance Boots has invested in the design and fabrication of quasi-pharmaceutical products for pharmacies. Such goods are marketed under the brand Alvita. Finally, the Alliance Boots company has created a subsidiary, known as Boots Contract Manufacturing (BCM), which carries out the production of health and beauty for itself and for third party companies. Importantly, in order to improve its strategic decision making, BCM operates completely independently of the other Alliance Boots subsidiaries since 2009. The Alliance Boots company results are positive and their market share continues to grow. In 2010, the company achieved a turnover of £ 22.5 billion and a profit of £ 1,360 million.

AmerisourceBergen Company (US).

The AmerisourceBergen company was created in 2001 following the merger of Bergen Brunswig Drug Co. and AmeriSource Corporation. At the time of their merger, these companies were the second and fourth largest wholesale distributors in the United States. To improve its position in the drug supply chain, the company has developed new innovations in both supply chain exploitation and exploration.

Supply chain exploitation strategy has been developed through the acquisition of companies already involved in managing the physical flow of pharmaceutical products. In 2005, AmerisourceBergen acquired the wholesale distributor Trent Drugs, and 2006 followed this with Asenda Pharmaceuticals and Rep-Pharm. In 2007, they added another wholesale distributor named Belco Health. Operational innovation activities are grouped under the banner of the AmerisourceBergen Drug Corporation (ABDC). All activities related to the logistics of branded laboratory drug distribution as well as those related to generic drugs are marshalled under that name. Distribution logistics of over-the-counter healthcare products, home healthcare supplies and equipment is also placed in this section, which is dedicated to the core business of the company. By acquiring other wholesale distributors, the company is able to be innovative with the logistics services it offers to its customers. It has succeeded, among other things, in surviving in a drug supply chain in which supply chain management practices have made significant progress in recent years. This approach gives AmerisourceBergen a sound anchorage in the pharmaceutical supply chain. The physical distribution network of the company has been greatly improved by exploitative innovation. Currently, it has 26 distribution platforms in the U.S. and 8 in Canada. The company has made heavy investments in information systems, which are intended to optimize the processing of computer data and to increase the velocity of logistics flows in the supply chain. The new technology used by AmerisourceBergen promotes the integrated management of flows and the effective treatment of logistics activities, enabling customers' deliveries to be made in very short times without increasing operating costs. Flows that pass through the warehouses of wholesale distributors are managed using just in time (JIT) principles. This means that the relevant products must spend as little time as possible in platform's freight company.

AmerisourceBergen's supply chain exploration strategy has been allowed to intervene beyond its core business, specifically the distribution of pharmaceutical products. Indeed, thanks to several acquisitions of companies engaged in activities other than distribution, AmerisourceBergen is now able to offer a multitude of services to all stakeholders in the pharmaceutical supply chain as well as those of the health value chain. In other words, the pharmaceutical logistics activities have been integrated. This means that, in future, the company can control the flow of the value chain of health as a whole both upstream and downstream through the supply chain. To do this, two other entities were created within the group, the AmerisourceBergen Specialty Group (ABSG) and the AmerisourceBergen Packaging Group. The first entity provides solutions to the problems of reimbursement and patient compliance for the pharmaceutical companies, medical device manufacturers and biotechnology companies. Pharmaceutical companies can rely on the health service to monitor steps in the life cycle of a product at both pre-commercialization and commercialization. ABSG Pharmaceutical clients are entities looking for services to improve their product launches, and at the same time help with their strategies intended to allow them to expand into new markets. The company has also developed a number of communication programs in medical sciences and is capable of taking over order management. AmerisourceBergen's acquisition of three players in the specialists packaging industry (in this case American Health Packaging, Packaging and Anderson Brecon Pharmaceuticals Limited) allows them to become involved in the process of drug packaging. The entity formed by the merger of the three companies, named AmerisourceBergen Packaging Group (ABPG), provides packaging solutions to institutional investors and distributors of health and service contracts dedicated to drug manufacturers. It also provides the material necessary for the conduct of clinical trials. The innovations that the company has developed within the health value chain have had positive effects on performance, which has helped the revenue benefits that are central to AmerisourceBergen's drug distribution business. These have increased steadily between 2004 and 2009. The company's annual report shows a turnover of \$47.6 billion U.S. in 2004 rising five years later to \$ 56.1 billion U.S. The wholesale distributor AmerisourceBergen is the leading player in its market with 42% of the pharmaceutical products distributed. These rewards demonstrate that the innovations offered by the company have been extremely successful with consumers. Further evidence of success is shown by the ranking in 2010 of the "*Good Neighbour Pharmacy*" program as the provider of the highest quality of service for pharmacies. At the same time, the company received an award of excellence for the successful development of very high performance supply chain innovations and its ambidextrous strategy.

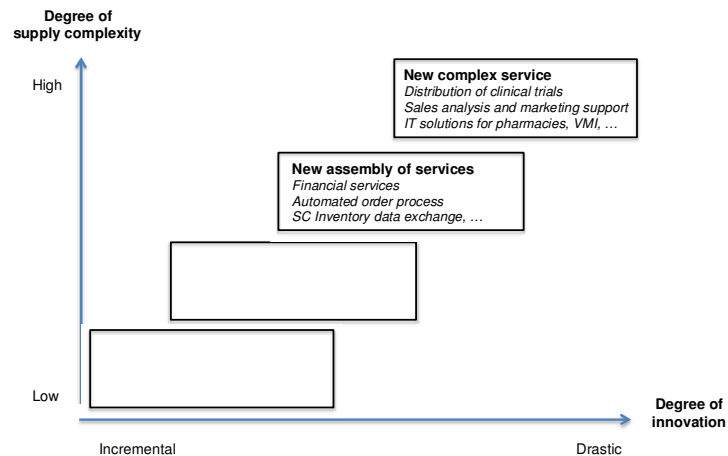
Discussion

Wholesale distributors Alliance Boots and AmerisourceBergen, both demonstrate the use of innovation. The extent and value of logistics services or services dedicated to health marketing offered by these two companies have different degrees of complexity. The innovation strategies of exploitation

and exploration deployed in their supply chain, clearly show that both companies have developed and utilized ambidextrous supply chain strategies as defined by Kristal (Kristal et al., 2010). Further, it is thanks to these ambidextrous supply chain strategies that both companies were able to combine capacity and competitiveness improvements. This, in turn, enabled them to be securely anchored in the drug supply chain as well as being more broadly rooted in the health care industry's value chain. By implementing ambidextrous strategies, both companies have significantly expanded their logistics services. These now range from simple transport operations to the implementation of complex logistics solutions which may include value-added activities such as direct marketing, billing, prescription management and advisory activities. Logistics services set up by Boots Alliance and AmerisourceBergen can be standardized or feature highly customized bundling. The variety of situations observed during the research shows that both wholesale distributors are able to utilize and combine innovation in different circumstances. Alliance Boots and AmerisourceBergen can develop and design services that meet the needs of their customers, whether those needs have been expressed or not. In the first situation, both wholesale distributors are applying demand logic, whereas in the second, they are acting in supply mode. The wholesale distributor's ability to adapt to standard or complex requests from its clients demonstrates the degree of interaction between them in the building-construction or co-modulation and innovative services. The degree of process control shown by the two companies highlighted in the research reflects the fact that wholesale distributors are able to provide complete in-house services to their customers or subcontract any part of those services if necessary. Because of the nature of the contracts between themselves and their customers, Alliance Boots and AmerisourceBergen are demonstrated to be logistics operators, integrators or agents of logistics services or health services.

The research showed the extent of the skills of Alliance Boots and AmerisourceBergen within the health value chain as well as in the drug supply chain. The economic environment of the healthcare industry has changed significantly in recent years and the level of uncertainty has increased considerably. Even the highly competitive health value chain, like other value chains, is under pressure. Drugs that pass through the pipeline will flow more as easily than in the past, and manufacturers make every effort to ensure that the physical flow of drugs is never sluggish. The creation of new *logistico-differentiated* marketing offers have allowed both companies to build competitive advantage. The ambidextrous supply chain strategy deployed by Alliance Boots and AmerisourceBergen has a positive impact on performance and profit of both companies. Logistics and *logistico-marketing* innovations are seen as quite radical strategies for differentiating the service offering. Figure 3 illustrates how pharmaceutical supply chains can be developed with reference to the twin axes of innovation and complexity. The implementation of these complex and diverse strategies carried out by Alliance Boots and AmerisourceBergen have enabled them to become permanently rooted in a sustainable supply drug chain and, more generally, in the health value chain. Thus, challenges linked to logistics and *logistico-marketing* innovation are shown take on great importance for the long term success and sustainability of pharmaceutical wholesalers.

Figure 3: Typology of logistics services offered by pharmaceutical wholesalers



Source: adapted from Boissinot and Kacioui-Maurin (2009)

Conclusion

This research has highlighted the impact that the deployment of an ambidextrous supply chain strategy can have on the capabilities and performance of wholesale distributors in both Britain and the United States. We found that applying an ambidextrous supply chain strategy has positive effects on strategic capabilities as well as market shares and profits of the companies studied. Further, it has demonstrated that an ambidextrous supply chain strategy is a viable approach for wholesale distributors to improve their positioning within the pharmaceutical supply chain, or more broadly within the health value chain. It is through such policies that the two wholesale distributors studied have been able to mobilize external resources and supply chain management as well as building and developing their own skills in-house.

Like all research, this study has a number of limitations. Specifically it only looks at ambidextrous supply chain strategy from the perspective of wholesale distributors. Future research could involve the study of ambidextrous supply chain strategy and its effects on the entire supply chain as suggested by Kauppila (2007) and Kristal, Huang and Roth (2010). Integrated networks foretold the end of intermediaries and projected the disappearance of pharmaceutical wholesalers, but failed to take account of their adaptability. The results of this research show that the wholesalers have survived, flourished and indeed influenced the development of pharmaceutical supply chain structure and strategy. Despite this, some academic research has remained focused on "dated" wholesaler supply chain models, this research has examined some of the new developments and their impact. At a time when governments are trying to reduce health care costs in response to straightened financial circumstances, better understanding of their role in the pharmaceutical supply chain could be invaluable. This paper provides information about the ability of wholesalers to renew their logistics services and helps understand their contribution to today's "new generation" of pharmaceutical supply chains as well as to healthcare value chains. Wholesalers' strategies, whether motivated by their own desires for improvement or driven to react to the needs of manufacturers and customers, take time to develop and are rarely understood or documented. This research contributes to that understanding and may also enable governments to understand the role of "new generation" wholesale distributors and thus exert greater control over health expenditures.

References

Boissinot, A., Kacioui-Maurin, E., (2009), L'innovation de l'offre des prestataires de services logistiques: une stratégie « d'enracinement » dans le canal de distribution, *Comindus, 2eme Journée de Recherche Relations entre Industrie et Grande Distribution Alimentaire*, Montpellier, 2 avril.

Cantalone, R.J., Vickery, S.K., (2010), « Introduction to the special topic forum : using archival and secondary data sources in supply chain management research », *Journal of Supply Chain Management*, vol 46, issue 4, pp. 4-11.

Chanal V., Mothe C. (2004), « Quel design organisationnel pour combiner innovation d'exploration et innovation d'exploitation ? », *XIIIème conférence de l'AIMS*, Le Havre, juin, pp. 1-25.

He, Z.L., Wong, P.K., (2004), « Exploration vs. exploitation: an empirical test of the ambidexterity hypothesis », *Organization Science*, vol 15, pp. 481–494.

Kauppila, O., (2007), « Towards a network model of ambidexterity », Helsinki School of Economics, Working paper.

Kristal, M.M., Huang, X., Roth, A.V., (2010), « The effect of an ambidextrous supply chain strategy on combinative competitive capabilities and business performance », *Journal of Operations Management*, vol 28, pp. 415-429.

PricewaterhouseCoopers, (2010), *Pharma 2020: supplying the future*, p. 10. Available at www.pwc.com/pharma2020

Roth, A.V., (1996), « Neo-operations strategy: linking capabilities-based competition to technology », in Gaynor, G.H. (ed.), *Handbook of Technology Management*, McGraw-Hill, New York, NY, pp. 38.1–38.44.