

CHALLENGE FACING THE LOGISTICS INDUSTRY WITH INCREASING DEMAND FOR SAME DAY DELIVERY

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INTRODUCTION

A series of studies concerning recent trends in the logistics services market, retail competition and internet usage suggests growth in demand for 'same day' courier services (Hyunwoo and Narushige 2011). The same study also indicates that increasingly unstable requests by customers require firms to proactively and innovatively 'respond to the demand volatility'. Reasons include: shortening product and technology lifecycles, competitive pressures forcing more frequent product changes and consumers demanding greater product variety (Singh 2011). Statistics from the Centre for Retail Research (2014) reveals e-commerce as the fastest growing retail market in Europe, with sales in the UK, Germany, France, Sweden, Netherland, Italy, Poland and Spain expected to reach a combined total of £111.2 bn in 2014 (€155.3 bn or \$212.8 bn) and for the US to reach \$306.0 bn (€224.0 bn) in 2014. With the rise in e-tailing, the express parcel industry is expected to grow by 6.7% per annum over the next ten years (Oxford Economic Forecasting and Mott Macdonald, 2006), nearly three times as fast as GDP, as the industry serves the increasing need for rapid and guaranteed delivery. Amazon CEO Christopher North also analysed how parcel delivery has transformed from one week to next day, and predicts that over the next five to ten years, same day delivery will become a norm and that is Amazon's target (Fletcher, 2015).

The paper will report on new research into the challenges faced by the logistics industry arising from increasing demand for same day courier services, and, on the measures being taken to tackle them.

SELECTED LITERATURE REVIEW

Academic coverage of 'same day' delivery is very limited. Most recently, Murray and Chu (2015) reported efforts by LSPs and large retailers to use Unmanned Aerial Vehicles (UAV)/drones and Mobile Depots (MD) for speedy parcel delivery. The literature review has therefore largely focused on factors supporting effective logistics/courier services.

One research strand to emerge from this back drop has been a study by Wang et al. (2007 and 2011) into the role of Electronic Logistics Marketplaces (ELMs). These are seen as a collaboration/consolidation platform for shippers and carriers, enabling enhanced access to the logistics resources necessary to respond to market trends, to facilitate more complex and enhanced communication capability, and to improve freight capacity utilisation. Wiengarten et al. (2013), in similar research, discovered and proposed technology for effective information exchange and inter-organisational collaboration to aid logistics operations.

Soosay et al. (2008) have revealed the ways that collaboration can lead to innovative ideas where firms integrated to link operations for increased effectiveness in areas of service delivery, process improvement, capacity planning and technology transfer. Audy et al. (2012) regard collaboration as a tool to gain unrestricted access to new markets, while Mahour and Spillan (2014) outlined its role in gaining competitive edge through the development of "IT-enabled supply chain capabilities that are firm specific and hard-to-copy across organizations".

RESEARCH QUESTIONS

The literature has revealed technology and collaboration as the most viable tools for carriers and shippers to improve their overall performance. The authors have, following a more extensive review of academic literature and professional/trade press, identified the following research questions:

In what capacity can the technology platform influence collaboration?

Can collaboration drive same day parcel delivery to become a commonplace?

METHODOLOGY

The key players are identified as a triad of *shipper*, *carrier* or Logistics Service Provider (LSP) and *customer*, with their inter-relationships facilitated by a Technology Service Provider (TSP), as shown in Figure 1.

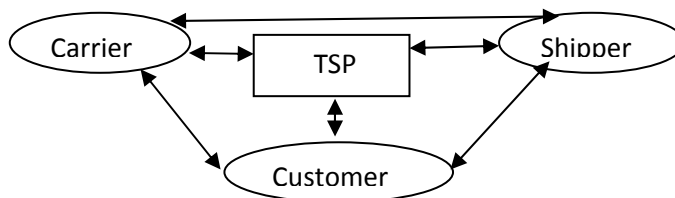


Fig 1: The logistics collaborative triad

Expert-oriented exploratory qualitative research with narrative analysis (Fontana and Frey, 2005) was chosen, to allow an in-depth understanding of the field. According to Wiles et al. (2005), narrative analysis helps with strategies to organise, conduct, interpret and present interviews, thereby enabling researchers to take cognizance of respondent's own evaluation. A stratified random sampling approach (Bryman and Bell, 2003) was employed to select shippers, carriers and TSP for interview. The interview questions were driven by both academic literature and general press; to capture real world developments.

Four interview sessions were conducted with the carriers, two large scale and two medium scale carriers. Similarly, four shippers (a mix of large and medium scale) were interviewed, and due to the similarity in their responses, summary of their reports are analysed, while only one TSP was interviewed.

This research focuses on goods and the retail industry, but e-groceries were excluded. Unfortunately, due to time constraints, the views of customers are not represented in this paper.

FINDINGS

In main characteristics of the interviewee organisations are shown in Tables 1 and 2.

Carrier				
Carrier Code	Category	Services	Net Asset Value	Vertical Integration Level
Carrier 1	Large Carrier	Transport and Warehousing	£4.52billion (2014)	High
Carrier 2	Large Carrier	Transport and Warehouse	£112.7m (2013)	High
Carrier 3	Medium	Transport	£2.5 to 10m	Medium
Carrier 4	Medium	Transport	£6.5 million	Low

Table 1: Characteristics of carrier organisations

Shippers			
Shipper Code	Category	Sector	Turnover
Shipper 1	Large	Retail and E-tail	£1bn
Shipper 2	Large	Retail	£5bn
Shipper 3	Medium	Retail and E-tail	Unknown
Shipper 4	Medium	Retail and E-tail	Unknown

Table 2: Characteristics of shipper organisations

Summary of Interview with Carrier 1

Carrier 1 attributed the same day courier quest to competitive strategy between retailers, most especially the giant e-tailers such as Amazon and eBay. An example is the recent partnership between Amazon and Smith News to nationally deliver parcels on the same day. He explained that ever since e-tailing became a norm, courier requirements have been changing. He cited an example that in e-tail system, product price, delivery cost and speed are now germane to customers' decision making. It is based on this that to remain relevant and competitive, small and medium e-tailers plan to either enrol to Amazon e-marketplace to benefit from the newly launched same day courier service or partner with same day courier service provider. If high success rate is recorded in the partnership, Carrier 1 believes will put the demand for same day courier service on the rise, and could become a criteria for carrier selection by retailers and could make the service a commonplace.

Impact on the business

Carrier 1 listed few of their major clients, part of which Amazon and eBay are not left out and put forward that because of the large size of some of their clients, they give out specifications for carriers to work with. Carrier 1 further explained that the service is already being offered to Amazon by Smith News which now stands a major competitor. They made it clear that their slow response to the same day market demand is not because they cannot render the service but because the market is being carefully studied for continuity and high volume demand. Further explanation revealed that each time the giant e-tailers innovate or come up with new specifications on parcel delivery, it puts the carriers under pressure to innovate.

Plans for the 'Same day' Service

Carrier 1 believes the market is new and there are still a lot to benefit from it. They however acknowledge that series of obstacles are to be overcome before the service can be rendered. This will require a huge investment in the IT infrastructure, machineries, distribution centres and manpower. Carrier 1 has therefore embarked on series of research on how all these mentioned will be achieved smartly and at the nick of time. They acknowledged collaboration with other carriers as being a good approach towards achieving same day parcel delivery but said they can afford the required infrastructure and manpower, therefore collaborating with third party carriers is not needed. They said the company wants to be in charge but never to feel obliged. They further explained that collaboration with third parties will not allow a total control and as a result, it won't be embraced. It was further explained that their distribution channels are highly technologically inclined for the services they render (one of which is Next day delivery), and despite that another quotation for IT improvement with the inclusion of same day delivery plan is in the pipeline.

It was explained that since current same day service by Amazon through partnership with Smith News doesn't capture door to door delivery, Carrier 1 believes they could use their manpower strength on the national postcode coverage as a competitive.

Summary of Interview with Carrier 2

Carrier 2 emphasized the company's specialism in same day delivery, but mostly for time critical parcels and not yet designed for a commonplace. He however explained that in order to make same day parcel delivery a commonplace, the company has embarked on the acquisition and partnership with smaller local carriers that specialise in speed or same day delivery, mostly where its (Carrier 2's) last mile delivery facility is not strong. He added that through the acquisition and partnership process, even the small carriers can now boast of improved business, while Carrier 2 can now substantially boast of speedy and anytime last mile delivery in places where the acquisitions have been successful. He further added that there are still on-going projects to increase the national distribution centres, alongside sophisticated IT infrastructure to track parcels from pick up till delivery while he also corroborated his point with the ongoing plan to partner with national rail service providers, for improved speedy delivery. Carrier 2 is also making arrangements to increase its distribution centres in the country, and planning to finalise all projects and partnership deals at the earliest possible time, to help them roll out improved services alongside an affordable national same day delivery service. The company's plan is not myopic and the improvement strategy is therefore not tailored to only satisfy giant e-tailer, but to leverage the same day delivery market across retailers irrespective of the business size. The company however identified a major challenge in the integration of the merger process, which is attributable to partners' IT platform incompatibility, resulting to several failed seamless communication and failed real time information sharing.

Summary of Interview with Carrier 3

Carrier 3 representative made it clear that they have observed that the same day delivery request rises where the service is rendered, which implies customers only demand for the available services. Since same day is still a growing business idea, Carrier 3 focuses mainly on major cities of the country. Due to infrastructure deficiencies, Carrier 3 does not render inter-city same day delivery. Their initial market survey reveals that customers would want the service if it exists and relatively cheap/affordable with good level of professionalism. It is on this basis that the company partners with e-tailers and works with individual customers through their website for same day delivery in major cities. Parcels are picked up and delivered through inter-modal and multi-modal freight system. The service is strictly internet reliant with a delivery time frame and real time tracking.

Carrier 3 made known their partnership with few large carriers and reiterated their willingness to further collaborate with more of the large carriers for the collection and last mile delivery. The company is studying Smith News and plans to partner with them afterwards for last mile delivery.

Summary of Interview with Carrier 4

Carrier 4 representative expressed some similarities as Carrier 3 in terms of coverage and mode of operation. He lamented that the company started the same day delivery business in London, but in recent times, there have been new entrants in the business, hence a growing competition and reduced profitability. Another major problem faced in recent time is the spreading of the click-and-collect system resorted to by carriers to reduce/eradicate the first time failed delivery attempt. He also mentioned IT compatibility problems and empty backhaul of trucks.

Carrier 4 wants to remain strong in the market, and has embarked on the design of an intelligent interactive platform where customers can reschedule delivery time or delivery address, followed by an estimated delivery time. Carrier 4 does not possess the infrastructural capability for inter-city networking and has partnered with few other large carriers both national and international to handle collection and last mile delivery.

Summary of Interviews with Shippers

They started to analyse same day parcel delivery has been an old courier practice for time critical parcels at local, national or international level and at a costly rate. In this case, it is not the cost of freight or the product that is expensive but the cost of not having the parcel. However in recent times, the market is changing as it has now become an evolving B2C business competitive strategy amongst large e-tailers. They explained that series of attempts have been employed by large e-tailers to start the same day parcel delivery, examples are: drone test by Amazon in Cambridge and in the United State, collaboration of Uber with eBay in the United State and the recent press captured successful partnership between Amazon and Smith News in the United Kingdom.

They also acknowledged that although few large carriers render same day services but mostly known with medium size carriers who specialise in local same day deliveries within major cities or inter-city. These carriers collaborate with shippers and use their online platform to service individual customers e.g. shutl, same day courier in Manchester, same day courier Bristol and Crisis courier solution in Northampton etc. Since the ideas work locally, large e-tailers decided to move a step further by nationalising the idea, the result of which we are seeing today.

Challenges

Shippers strongly believe that there would be high patronage if same day parcel delivery is affordably available to customers, but they do not possess such logistics capability. They explained that outside Amazon and Smith News partnership, no carrier has come out to advertise/market inter-city same day national parcel delivery except the ones still in the trial stages e.g. the 'Google express' in the United State, 'eBay Now' which is still a local service in major cities of the United State etc. Shippers further revealed that there is no desperation for same day delivery until it becomes a commonplace, and moreover, most of their carriers render effective next day delivery service, and there is no known pressure from customers on same day delivery service neither has there been patronage reduction resulting from same day delivery request. This implies same day delivery is currently not categorised as a challenge to their business while further adding that giant e-tailers want to use it as a competitive strategy and any SME that wants to benefit from the package can subscribe to their e-marketplace platform.

Interview with Technology Service Provider

The response from the above interview sessions, through the recurrence of collaboration and information sharing prompted the need for interview session with the TSP. An interview session with a TSP director and a recently obtained article confirms the development of the following features in two separate IT projects by: IntelliTrans Technology and iCargo Project.

The two projects support freight and logistics operations for multiple players through various modes while adapting to changing freight conditions and dynamic route planning of intelligent cargo, vehicle and infrastructure system that possesses a databank for real time services, resource and information sharing from and between different stakeholders. The projects supports a multi-modal freight, parcel consolidation, end-to-end real time tracking system, dynamic and intelligent transport re-planning consequent from real-time tracking information and a low cost transport.

DISCUSSION

With technology, courier is being transformed and rapidly evolving, series of events have unfolded both empirically and theoretically from standard delivery to next day delivery/traditional time critical parcel delivery and now to making same day delivery a commonplace. The results have started to surface as stated in the literature.

From the above data, profiles of the respondents are identified with emphasis on how they have been impacted by the same day delivery quest. Furthermore, the recurrence of the need for improved collaboration by the both the shippers and carriers, and the need for a reliable real time communication and information sharing suggests the following as key factors towards addressing the identified challenges respectively:

1. An intelligent collaboration platform
2. A seamless communication and information sharing platform

Shippers

Shippers have not started to feel the impact on their business, neither are they under any pressure to get involved, nor has there been a decline in sales/patronage level. However, because of the evolving market some of them currently partners with local/domestic same day carriers, and they are of the opinion that when the service gains popularity they will review their partnership terms with national carriers that render the service. The above data also revealed that in the attempt by shippers to remain

competitive, majority of them are accustomed to the habit of partnering with more than one carrier, to have the best deals selected for their customers.

Carriers

Even though large carriers have the resources to adjust to specifications by major e-tailers/retailers, medium scale carriers cannot, and therefore necessitates the need to leverage the market. From the garnered information, even though one of the major carriers rejected collaboration options for its business, facts have revealed collaboration as key to leveraging the same day delivery market.

CONCLUSION

In this research work, we examined literature on the impacts of collaboration on logistics, and interviewed shippers and carriers with focus on the carrier regarding the evolving "same day parcel delivery" market.

This study reveals that firm size influences business strategies due to their infrastructural capabilities. Analysing the existing approach by different carriers to meet the market requirements revealed that in general, large carriers stand better chances to adapt to market requirements through vertical integration, and more sensitive to cost-volume profit.

Our findings suggests an innovative/intelligent collaborative platform for "speedy and cost effective same day delivery", and ELM being an example of such technology through its effective consolidation and collaborative features. It is in that regards that large carriers should align their logistics operations with the TSP.

In order to benefit from the evolving "same day parcel delivery trend", Small, medium carriers and shippers must partner with the larger carriers.

Based on these, we believe investment in collaborative technology should be highly prioritised by decision makers, hence we recommend ELM as an intelligent collaborative platform for same day parcel delivery.

REFERENCES

Audy Jean-Francois, Lehoux Nadia, D'Amours Sophie and Ronnqvist Mikael (2012). A framework for an efficient implementation of logistics collaborations: Journal of International Transactions in Operational Research. Vol 19 pp 633-657

Bryman, A. and Bell, E. (2003) Web Surveys: Online Social Surveys: Quality Research Using Online Personal Interviews, Business Research Methods, Oxford University Press, p510.

Centre for Retail Research (2014) [Online]
<<http://www.retailresearch.org/onlineretailing.php>> [accessed 15 December 2014]

Fletcher Richard (2015) Books are just the start of the story for Amazon. The Times, Published April 7, 2015.

<<http://www.thetimes.co.uk/tto/business/industries/retailing/article4403509.ece>>
[accessed 15 April, 2015]

Fontana, A and Frey, JH (2005) The interview: From neutral stance to political involvement in Denzin, NK and Lincoln YS (eds.), The Sage Handbook of Qualitative Research, 3rd edition, Thousand Oaks, CA: Sage, pp 695-728

Forecasting, Oxford Economic, and Mott MacDonald (2006). "The economic impact of express carriers for UK plc." Unpublished Report. pp 1-47.

Hyunwoo Lim and Narushige Shiode (2011). The impact of online shopping demand on physical distribution networks: a simulation approach, International Journal of Physical Distribution and Logistics Management, Vol. 41, No. 8, pp. 732-749

Mahour Mellat-Parast, John E. Spillan, (2014),"Logistics and supply chain process integration as a source of competitive advantage", The International Journal of Logistics Management, Vol. 25 Iss 2 pp. 289 - 314

Murray C. Chase, Chu G Amanda, (2015). The flying sidekick traveling salesman problem: Optimization of drone-assisted parcel delivery: [Transportation Research Part C: Emerging Technologies](#). Vol 54, pp 86-109

Singh K. Rajesh, (2011). Developing the framework for coordination in supply chain of SMEs, Business Process Management Journal, Vol. 17, No. 4, pp. 619–638.

Soosay, Claudine A; Hyland, Paul W; Ferrer, Mario (2008). [Supply chain collaboration: capabilities for continuous innovation](#): International Journal of supply chain management. Vol 13 Iss 2. Pp 160- 169.

Verlinde Sara a, b, Macharis-Cathy a, Milan Lauriane a, Bram Kin (2014) Does a mobile depot make urban deliveries faster, more sustainable and more economically viable: results of a pilot test in Brussels:

Wang Y, Potter A and Naim M (2007) Electronic Marketplace for Tailored Logistics: Industrial Management and Data Systems, Vol. 107, No. 8, pp. 1170–1187.

Wang, Y. Potter, A. Naim, M. Beevor, D (2011) Industrial Marketing Management: A case study exploring drivers and implications of collaborative electronic logistics marketplaces. Vol 40 pp 612-623

Wiengarten Frank, Humphreys Paul, McKittrick Alan, Fynes Brian, (2013) "Investigating the impact of e-business applications on supply chain collaboration in the German automotive industry", International Journal of Operations & Production Management, Vol. 33 Iss: 1, pp.25 – 48