

The Social Supply Chain and the Future High Street

Abstract

Purpose: *The paper offers a perspective on the operations of retail businesses in the high street as they adapt to the rising influence of the digital economy. We reveal some of the new challenges being posed by the changing growth and consumption patterns in cities that are coupled with shifting macro-supply chain trends.*

Design: *The study is conducted through the analytical lens of what we describe as the social supply chain. To achieve this a case study approach is employed to explore the rapid advance and influence of digital technologies on businesses operating on the primary business street of suburban centre, towns or cities (described in the UK collectively as the 'high street').*

Originality: *We take a supply chain management perspective to consider the original purpose and rationale for the development of the UK high street and then undertake a systematic review of the various recent efforts undertaken by local governments, communities and traders groups to revitalise the high street. For the purpose of this paper we use three distinct case studies to analyse this perspective.*

Findings: *By utilising the concept of the social supply chain it is possible to identify and assess the success or failure of each of these different case studies within this single unifying concept. Identification of previous case studies of high street revitalisation that have failed, or at least not achieved their stated goals, are also identifications of the failures of the contemporary social supply chain.*

Key words: social supply chain, business strategy, co-creation, co-production, co-consumption, digital high street.

1. Introduction

While the social supply chain has been partially defined in previous literature (Bunte, 2006; Salam, 2009; Hoejmose et al, 2012) a systematic detailing of its distinctive features is still required as confusion remains in its terminological use. The 'social' in much of the previous literature refers to the use of social media being embedded into existing supply chains (Moore and Neely, 2011) or the 'social' considerations that are bundled within corporate social responsibility in supply chains (Perderson, 2009). In this work we argue for a more nuanced usage in which the 'social' in the supply chain integrates the complexity of human sociality and action with the collective and systematic processes of business. In making this association we

suggest that the ‘social supply chain’ has two interrelated strategies concerning delivery and balance that are themselves linked with the actions of co-creation, co-production and co-consumption (see Figure 1) (Russo-Spena & Mele, 2012). Full consideration of interrelated strategies relating to delivery and balance can therefore take full advantage of lateral scaling and the the generative capacity of the ‘third revolution’ or ‘network society’ as described by Rifkan (2011) and Zittrian (2009). The delivery strategy of the social supply chain is found in the movement of potentially unique items that have been grown, made, crafted or simply owned by individuals delivered by their own actions to permanently or temporarily fixed retail or storage locations (Sioshansi, 2013, p.266). These actions also mirror the ‘BYO’ (Bring Your Own) concept that has recently gained popularity with the ‘Bring Your Own Device’ movement in the workplace and the increasingly wide availability of freely accessible Wi-Fi in public places. While this latter example suggests that retail businesses are giving away something as an incentive to shop the underlying requirement is that users of this free Wi-Fi service will **bring** their own devices to the location. Devices that ultimately enable access to online retail opportunities. Currently, the most common but least exclusive example of the delivery strategy of the social supply chain is readily identifiable at high street charity shops throughout the UK. The experience of the social supply chain at these shops is attenuated at the end of a weekend when multiple items have accumulated at the front door of many branches. More sophisticated and specialised forms of the delivery strategy within the social supply chain are found, for example, in the delivery of locally grown foodstuffs to cooperatives such as the Unicorn Cooperative in Chorlton, Manchester, or pop up farmer markets.

The Social Supply Chain matrix

		Strategies	
		Delivery	Balancing
Actions	Co-creation		
	Co-production		
	Co-consumption		

Figure 1: Strategies and actions of the social supply chain

The second strategy of the social supply chain, a balancing strategy, is the delivery of people - consumers - to fixed locations within the high street (Hackett & Foxall, 1994). This represents a critique to earlier works concerning high street retail and supply chain management (Bruce et al., 2004). Discussions of high street retail supply chains have tended to begin and end with the

supply of goods to retailers deferring the need to consider consumers themselves to a separate marketing and communications issues (Lamming, 1996). The advent of ecommerce and the threat that these alternative retail activities pose to those of the high street reveals the need for consideration of a balance between consumers and appropriate goods and services. Earlier discussions largely assume the inevitable, or even surplus, supply of consumers as a function of the concentration of traditional retail supply chain management activities in the high street (Barnes & Lea-Greenwood, 2006). Traditional retail marketing practice then largely concentrates on presenting clearly differentiated choices to the consumer within very specific constraints (Roberts, 2003). The key assumption of traditional retail marketing is that the consumer must inevitably visit the high street, shopping mall or retail park to perform any act of consumption. The presence of a wider set of choices for retail whether it is in a physical location or through local or international ecommerce sites introduces a wider set of complexities and opportunities. On the high street in light of new virtual competitors, the balancing strategy for the social supply chain must include obtaining a regular supply of consumers - footfall - to physically fixed locations in the high street. However, the balancing strategy does not necessarily require a simple one to one relationship as a varying number of consumers are required for any single service or event. Understanding the nature of this relationship and its optimum ratios set out the expectations for maintaining high street activities. Individual tactics for favourably altering the balancing strategy of the social supply chain can be identified with the creation of specific events and locations that introduce forms of performance or aspects of discovery and exploration to visiting the high street. One example of retailing that systematically introduces exploration into the high street experience is found with the TK Maxx (in the UK) and TJ Maxx (in the US) chains where the absence of regular stock lists restricts conventional online retailing - despite the presence of live ecommerce sites for both of these chains.

The UK Government sponsored Portas Review (Portas, 2011) and its subsequent well-publicised government sponsored project by Mary Portas represents a failure from the point of view of the social supply chain (Neville, 2014). The project attempted to revive the traditional, and potentially imagined, vision of the high street. This project was presented as a solution to the current decline in the UK high street despite the ever-presence of ecommerce alternatives and the widespread integration of social media organising that already informally brings new ways of combining socialising and shopping into the high street (Phillips & Young, 2009). Theorising the contemporary social supply chain - and particularly its balancing strategy - necessarily requires inclusive consideration of the digital interactions and communications in a constantly shifting but integral relationship with physically fixed locations.

Independently originated but commonly shared motivations for achieving local success in high street reconstruction or rehabilitation can be regularly observed across the UK (Future High Street Summit, 2014). The results are generally very similar and draw upon a small set of solutions to respond to the challenge of physically fixed retailing locations. These common answers to the current challenge of high street retailing in the UK echo the constraints of the current financial situation which in turns reflects political sentiment, including Cameron's 'Big Society' agenda (North, 2011), the concentration of property ownership within the high street (Dixon, 2009) and the current reluctance of most local authorities (in the UK) with town planning

responsibility to restrict the proliferation of any single type of retail outlet but particularly betting shops, fast food takeaways and charity shops (Fransoo & Wouters, 2000).

In light of these considerations for the social supply chain this paper is organised as follows; Section 2 situates the changing relationship of supply chain operations for retail businesses on the high street in the UK. In particular considerations about the demise of the high street and ecommerce are presented. Section 3 presents a comprehensive literature review that outlines the conceptual foundation of the social supply chain. A theoretical model is presented that associates the actions of co-creation, co-supply and co-production to the current high street retail environment. Section 4 presents a series of carefully identified cases that illustrate how the social supply chain is revealing itself within contemporary high street retail practices. The series of industry specific cases are presented in terms of the co-production, co-supply and co-consumption actions of the social supply chain. In Section 5 the implications of social supply chain strategy and business models are presented. The paper concludes with a summation and consideration of the implications on the future city.

This paper presents a series of case studies that focus on current consumer and retailer activities that can be identified as being parts of contemporary social supply chains and the associated actions of co-creation, co-production and co-consumption. Case studies are identified by such authors as Eisenhardt (1989) and Yin (2009) as excellent guides for conducting research in broader business contexts and their invocation has been taken up in this paper. The aim of this work is to enable the development of new business models founded upon a theorisation of the social supply chain that are contextually sensitive and integrate the digital and physical environments in appropriate and sustainable ways. These models will ultimately endeavour to address the competition and challenges of both shopping malls and online retailing while also directly contributing to the shape, experience and, ultimately, sociality of future cities.

2. The demise of bricks and mortar retailing: its impact on the UK high street

Internet usage has steadily increased over the past few years with the 78% of the UK population having access to the Internet in 2013 (Dutton et al., 2013). From the same annual 'Internet in Britain' study conducted by the Oxford Internet Institute there is demonstrable evidence that buying and using services online such as paying bills, online grocery shopping or comparing products prior to buying has continued to grow exponentially. The report states that the continuing growth in ecommerce engagement activities highlights major challenges to bricks and mortar retailers and gives an insight into the transformation of shopping habits within the UK (Dutton et al., 2013). Total ecommerce sales hit \$US 1 trillion dollars in 2012; this was a 21% increase from the previous year and it is predicted to grow further by 18.3% to reach \$US 1.298 trillion worldwide (eMarketer, 2013). In their recent report, the British Council of Shopping Centres (BCSC) (2012) offers further evidence of how shopping habits are changing, they claim that 25% of total UK sales will be online transactions by 2020 and driven by m-commerce. Additionally the BCSC recognize the changing perception of retail in that 'shoppers' are now becoming 'visitors' to retail spaces with heightened expectations that they will be enjoying an

experience. 'Bricks and mortar' spaces – and especially those stripped down to the most utilitarian functionality - have to adapt (BCSC, 2012). Social media has played a major role in setting the pace of this change, and continues to give shoppers more control and retailers more dilemmas. The dilemma of these changing shopping habits is having a wide-ranging impact on many conventional shopping environments, from shopping centres to the local high street. The high street is reportedly in abject decline across the UK with consumer shopping behaviour moving towards a preference for 'click and flick' rather than 'brick'. This shift in behaviour coupled with increased rates and rents has had a significant impact. A recent high street study conducted by Local Data Company (2013) reports that Greater Manchester is one of the hardest hit areas of decline with Eccles being identified as the sixth worst hit area in the country. There are many initiatives that attempt to redress this contraction of retail variety including the Mary Portas Pilots and Rochdale Borough High Street Foundation using empty spaces as food-growing hotspots (spacehive.com/incredibleedible Rochdale). Despite this recognition of the challenges there has been little sustained success in any of the ideas put forward and the high street continues to experience general decline.

3. Shaping the social supply chain: lessons from supply chain management literature

There are numerous definitions that apply to the many different contexts of the supply chain however "Supply chain management is management of material, money, (wo)men, and information within and across the supply chain to maximize customer satisfaction and to get an edge over competitors" (Shukla et al., 2011) is one definition that has attempted to distil the many complex activities down its key components. However Supply Chain Management (SCM) is a moniker for what are complex and multifarious processes, logistics, transportation, operations management and materials and distribution managements, marketing, procurements and information systems that are viewed as forming part of any SCM strategy (Jain et al., 2010). Terminology associated with SCM identified by Tan (2001) included supplier integration, buyer-supplier partnerships, supply chain synchronisation and integrated logistics. Burgess (2006) conducted a review of historical supply chain literature and a number of key findings emerged. Common assumptions regarding the SCM literature is that the body of research is claimed by many disciplines indicating a lack of clarity in the definition of key terms and its primary contextualisation within the manufacturing sector (Burgess, 2006). There is a common assumption that manufacturing has been a major driver for SCM theorisation and has managed the pace at which products were manufactured and distributed. Historically it was the quality of products that was a differentiator but a power shift towards the customers has slowly emerged as critical in gaining competitive advantage (Jain et al., 2010). Traditionally, the important drivers are cost, time, quality and flexibility with a utopian vision that the SCM can harmonise these factors reacting to the market situation (New and Payne, 1995). The SCM can also reduce the 'time-to-market' essentially be adaptable and agile harnessing the capabilities of entire organisations that span the globe. However, ubiquitous disruptive technologies are troubling the traditional underlying supply chain management that has altered little since its conception and remains close to its manufacturing roots (McKinsey, 2011). Managing customer expectation and reducing costs is slowly superseded manufacturing as key drivers of SCM strategies. Figure 2 illustrates the key processes in a traditional SCM that require consideration

for the development of an integrated and coordinated current and future SCM (New and Payne, 2011) The current model of SCM simplifies a complex and multifaceted set of activities and global networks of systems that are not equipped to cope with the new sphere of change that is currently developing. The future, spurred by the digital economy, changing consumer habits, the re-emphasis on the local and shifting environmental issues is exposing the rigidity of the current supply chain model as being not being fit for purpose.

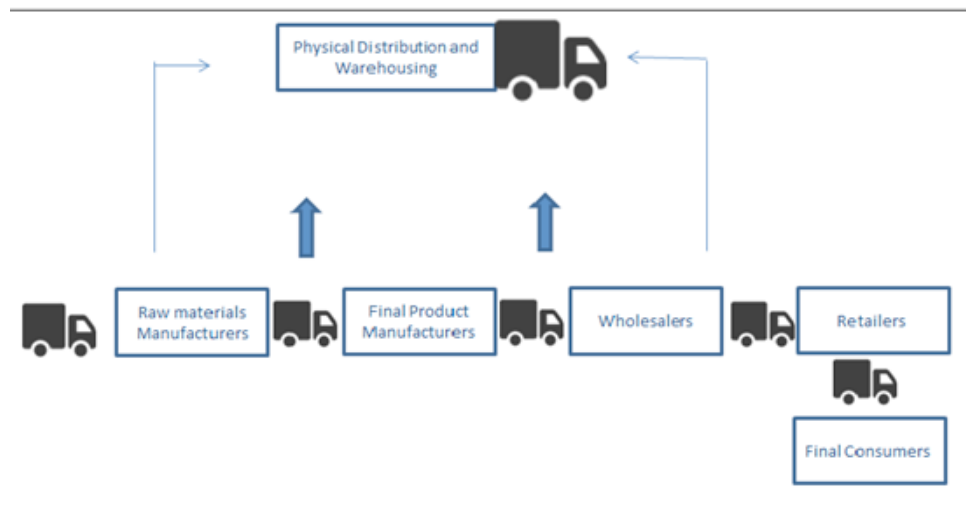


Figure 2: Key Processes in a Traditional Supply Chain (adapted from New and Payne 1995)

4. Identifying the social supply chain

While a number of authors including Sanches et. al (2011) foresee "the Internet of Things (IoT) to form an essential part of the Future Internet, as its connected devices will outnumber the computers and mobile devices utilised by human users by orders of magnitude" the relationship between humans by far still dominates social and business interactions. However for future innovation and supply chain development it is important to consider the significance of co-operative and prosumption activities as they relate to city dwelling and consumption and production practices (Botsman and Rogers, 2011). Rifkin (2011) describes a 'new era' coined the 'Third Industrial Revolution', where everyone can potentially be their own manufacturer as well as operate their own internet site and power company. The generative capacity of connecting multitudes of sellers and buyers in virtual space is achieved through the use of networked technologies and it is almost free (Zittrain, 2009). Therefore there is much potential for retailers and customers alike in the substitution of expensive intermediaries — from wholesalers to retailers — with a distributed virtual network of sellers and buyers. Altering the macro-supply chain trends in the supply chain therefore can eliminate the transaction costs that are marked up at every stage of commodity transaction and production. The online arts and craft retail site Etsy has created a new global craft bazaar for example that scales laterally rather than hierarchically, and markets goods collaboratively rather than using a top-down supply chain approach. The lateral scaling in the Third Industrial Revolution shifts the fulcrum of the traditional supply chain strategy from a top down supply and demand operation to a shared

operation of networked and distributed individual, small and also medium size enterprises. The rapid decline in transaction costs brought on by the Third Industrial Revolution brings a form of distributed capitalism that is likely to alter the way supply chain strategies can be operationalised. Table 1 below was developed by Schaffers et. al (2001) and clarifies the complex relationships and perspectives shaping both the future Internet and future city.

	Future Internet Research	Cities and Urban Development	User-Driven Innovation Ecosystems
Actors	Researchers ICT companies National and EU actors	City policy actors Citizen platforms Business associations	Living Lab managers, citizens, governments, enterprises, researchers as co-creators
Priorities	Future Internet technical challenges (e.g. routing, scaling, mobility)	Urban development Essential infrastructures Business creation	User-driven open innovation Engagement of citizens
Resources	Experimental facilities Pilot environments Technologies	Urban policy framework Organisational assets Development plans	Living lab facilities: methodologies & tools, physical infrastructures
Policies	Creation of advanced and testbed facilities Federated cooperation Experimental research	City policies to stimulate innovation, business and urban development Innovative procurement	User-driven innovation projects Open, collaborative innovation

Table 1: Three perspectives shaping the landscape of future Internet and city development (adapted from Schaffers et. al., 2011)

Table 1 depicts the common, shared research and innovation resources as well as cooperation models that provides access to resources and will constitute the future backbone of urban innovation environments for exploiting the opportunities provided by future Internet technologies. As populations continue to converge in cities continued pressure and innovative methods for sourcing as well as producing items will continue. The advantages levered from digital network connectivity provide many opportunities to take advantage of ‘co-’ (connected, congested or cooperative engagement). Balancing between the physical and digital as well as demand and supply is an important consideration for retail businesses. The case studies presented here provide a snapshot into the creative ways that businesses and consumers are together engaging to take advantage of the increasing density of urban living and living in a digitised world.

The case studies also represent new identities that are being brought to the high street. Each example is an illustration of co- or socially created spaces. Moss Ciders represents a true social supply chain with customers providing the raw materials, becoming involved in the processing and learning new skills (as in the marketplaces of the past), then taking the end product home without the need for intermediary delivery chains. The Popupshop and Twitter high street cases integrate new ways of shopping with the traditional high street. Popupshop brings virtual brands to the high street drawing on the need for individuality, the need to touch and feel products

before buying online and combine this with new ways of shopping such as the social or peer validation of purchase decisions via access to (and even encouragement to use) social shopping apps in store (e.g. #shallIbuyit?). Finally the the growing propensity of consumers and producers to initiate contact and co-engage via online networks to lower the barriers to entry and heighten consumer experience as a shared event. The three cases presented are examples of co-production, co-creation and co-consumption in action.

4.1 Moss Cider Press - the social supply chain and co-production



Figure 3: The Moss Cider Project image by Hannah Beatrice

The Moss Cider project is a community based initiative founded by a Moss Side resident Dan Hasler who had the vision to grow an orchard on the site of a disused bus depot to make locally produced cider. Moss Side, an inner city area is located within a couple of miles of Manchester's city centre, and has a long history of brewing dating back to 1890s but is not known for its orchards (see Fig 3). The plan is a long-term one but what has emerged is a vision to produce local cider on site, sourcing apples from across the city and relying on local volunteers in the processing activities, in effect, essentially establishing a local social supply chain. Moss Cider founders self funded the purchase of an industrial apple press and were supported by Firmstart (www.firmstart.co.uk), who assist in the development of the economic and social base of Hulme and Moss Side in providing assistance to develop local start-ups and regenerative networks. With all the key ingredients in place to begin juicing apples this non-for-profit business gained unexpected media coverage coupled with high levels of community interest. With the nature of the product relying on a seasonal ingredient this enabled an initial timeframe to work within. The Moss Cider Project have established a local social supply chain that has encouraged a diverse local base of suppliers and apple donors, the concept and product has been promoted via

digitally amplified word of mouth, they rely on the voluntary and local community sector. The process commences with the donation of apples that will be converted into cider or apple juice, weighed and 50% of the wet weight returned back to the donor. This can be returned to the donor in a variety of ways either by refundable brown glass crown-cap bottles or recyclable bag-in-boxes. Locals are encouraged to participate in the process, either in the juicing process but also in collection and distribution of the apples and cider across the city. The pressing process is free, but the produced cider is not for resale, however as the project is establishing and interest in locally grown and produced cider grows, there is a demand. Initially Moss Cider is sold at, again, local events and can now be found in a number of independent local wine merchants and bars. Essentially this non-for profit business model, has adapted ethical sourcing practices, stimulated innovation within the local economy, encourage a positive contribution from local communities and increased participation in local SMEs in its supply chain. The project is open for all who want to help or learn how to cider press and there is an interest in developing a local skill base as they encourage participation in the newly established orchard and green spaces meters away from one of the major transport arteries into Manchester.



Figure 4: An example of bring the 'social' to the supply chain

The glue for this social project is a heavy reliance on social media, there was an initial need to tell the Moss Cider story and use traditional media along with digital media to promote the concept and there was a need for the raw material, apples. Further into the the cider production is a need for volunteers to press the cider and then to bottle, label and package the cider. The final component of the supply chain is the bringing of the product to the marketplace or to the

customer. The Facebook Fan page has been a crucial element in the whole process as it brings the 'social' to the supply chain. Figure 4 illustrates how Facebook has been used to request volunteers to help bottle and label a recent large cider batch with the incentive of a joining in and drinking some cider. There are many requests on their social media sites to come down and join in, help out or just to play.

4.2 High street presence for virtual brands - the social supply chain and co-creation

The high street began to die with the evolution of local character and distinctiveness that served the needs of a town into homogenous standard templates hosting only big name brand. As out of town shopping centres and ecommerce facilities developed consumers no longer needed a heterogeneous high street. They could buy standard products more conveniently elsewhere; out of town retail parks, large supermarkets and eventually through online home delivery. Consumers look to the high street to provide the options for the diverse and individual. However, independent retailers can rarely afford high street rents. A further conundrum is that in order to pull people back to the high street a critical mass of these diverse shops is needed. It is significant to note that charity shops and similar (vintage, upcycle etc) are bucking the trend of flight from the high street. Most desolate high streets are host to one or more charity or used goods shops. This can be attributed to a number of factors; the low rents offered to charities by councils, the economic downturn affecting spending power, the revival of "make do and mend" attitudes, and the trend towards "individual" style. What is key is that these traders offer products that are available transiently and serendipitously. At the specific time of discovery, in that specific place each item is a "one off". The shopping experience of the past is to some extent captured through the social supply chain element of local residents bringing stock (the things they no longer need) to sell on to other local residents. A slight redefinition of the marketplaces of the past where local craftspeople brought their (unique) products to sell to other local residents promoting social engagement and community. Whilst it is no longer viable to try to recreate the high street of the past, elements such as the social experience and the individuality of the products available remain particularly relevant. We need to find ways of incorporating these elements into new ways of shopping. This case study presents one example.

In a bid to integrate real and virtual ways of shopping and to create both a social and sustainable high street and supply chain, Popupshop have proposed an innovative "pop-up shop" model. This model reverses the usual trend of high street brands moving from real to virtual (a "bricks and clicks" model) and instead proposes a real, yet temporary, presence for pure play virtual brands. To begin with, residents will be invited to "co-create" their high street via a digital shopfront. QR codes in empty shop windows will lead to a survey asking "what would you like to see here?", or an interactive shop window (Fig. 5) would encourage people to share their suggestions. Integrating the survey with social media accounts increases reach, and in turn input to the co-creation of that particular street. Each pop up cluster in each high street will bring a unique blend of goods and brands. Supply meeting a customised, current and socially specified demand; a "consumer-driven perspective" of innovation and co-design (Russo-Spena and Mele, 2012) drawing on the 'lead user' and his/her ability to "anticipate the

requirements of the broader market” (Von Hippel, 2009) in this case the requirements the local community has of its high street.



Fig 5 Interactive shop window.

Such co-creation of the high street echoes the philosophies of the social supply chain model. Based on the survey results, analytics and subsequent brand recommendations (respondents who suggested X also suggested Y), a customised high street of pure play virtual brands would be temporarily constructed. Further integrating the virtual and the real, and avoiding the issues encountered by Portas and similar projects in attempts to recreate a bygone (imagined) model of the high street, the shops will have a very different approach from the traditional retail model. The pop up shop will be a social networked experience. The products in store will be limited to one of each item in each size, colour (or similar). Customers will be able to try sizes on, see and feel the quality of the goods then order online instore (with guidance if needed) for home delivery. There will be no need for large delivery vans to stock the shop. Supply will be on demand and delivered direct - reducing high street congestion and pollution. Virtual brands will extend their reach and build reputation (and profit) by overcoming barriers to online purchase of certain products (e.g. clothing, jewellery) and by being more inclusive; those who are not comfortable with online shopping will have support, guidance and a face-to-face interaction with shop curators and fellow customers to help them overcome skills gaps, or give reassurances where trust or security are concerns.

The instore experience will be a social one, possibly a cafe format, where customers shop and catch up with friends then have their purchases delivered direct. Interactive screens, virtual mirrors and wifi connections will allow the integrated use of digital social shopping sites, such as justbought.it and interaction with a global community through channels such as instagram and the hashtag shallibuyit?, with the traditional and 'real' social "shopping trip". In figure 6 below a shopper tries an item on instore, instagrams a photograph hash tagged shallibuyit? and gets immediate responses from contacts (who she may or may not know) "yes, buy it you look stunning in it" and "seriously hot". Responses to other posts have been more detailed and "professional", ("the dress is wearing you. You need a more fitted simple style for your frame";

“with your hair you should avoid that colour. choose pastels or from the ‘summer palette’”) almost as if the shopper has a personal stylist on hand, pre-purchase conversations on a global level are facilitated and encouraged in this new high street model. The supply of style and fashion advice is delivered direct by social media to the point of purchase. This represents a reinvention of the high street, a blend of traditional and new ways of shopping.



Fig. 6 Shopper using Instagram #shallibuyit?

Shopping and consuming have become (again) social activities though real and virtual channels and new supply chain models must build in opportunities to socialise. Whilst for the previous generation it was about “keeping up with the Joneses,” our generation will be defined by “connecting and getting to know the Joneses” (Botsman and Rogers, 2011).

4.3 The regional twittersphere - the social supply chain and co-consumption.

As previously mentioned, while there is much concern regarding the demise and continued difficulties traditional high streets are experiencing in the UK the same comparison cannot be drawn in relation to the digital high street or the use of Twitter as a platform to bring a social supply chain approach for businesses to draw consumers back to the high street. This case presents an overview and examples of the growing commercial presence on the twittersphere of inner city Manchester in 2013-14. We present examples of the networking potential that social media offered for inner city Manchester. The use of social media by a cross section of society offers an alteration to the supply driven chain not only because it disentangles the shopping experience from the physical limitations of the bricks and mortar high street shopping but also because it enables the consumers to socialise and immerse themselves in a transparent relationship to an extended supply/consumption chain. The blurring distinction between leisure and work, sociality and formality means that consumers choice can now be accessed across

conversions flow in the twitterspere. For example, a recent example of the networking potential presented in the NSA ability to trace connections of friends via Facebook connections illustrates the exponential growth as a single connection builds to seven connections which builds to 200 connections that quickly spirals to 40000 (see Fig 7). In inner city Manchester for example by exploring the volume of tweets and retweets over a given period we can see that the digital high street made up of a diversity of connections ranging from culturally embedded football tweets to health, crime and individual political comments by community activists. The table presents the most mentioned topics from Tweets harvested by the COSMOS project, a 1% capture of all tweets broadcast by Twitter, between 25th Oct 2012 and 14th Jan 2013 for Manchester. The harvest incorporated the Tweets from 140 individual twitter accounts. The full harvest captures the Twitter feed including the tweets and re-tweets, friends and mentions over an 8 week period. The top 50 most active accounts were identified from the sample of over 100 000 tweets and re-tweets. The highest ranked 50 accounts for the area were identified and according to the selected sample the Figure table presents the origin of the tweet, the number of mentions in descending order and the topic of the tweet.

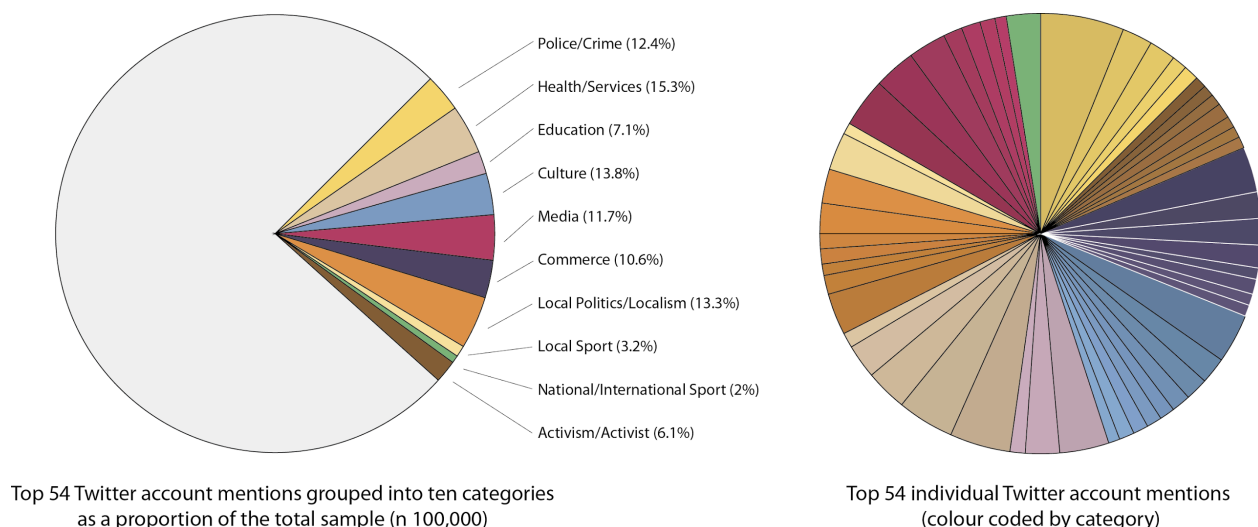


Figure 7: Mentions within the Manchester Twittersphere. Top 54 accounts by mentions and colour coded.

As well as the density of activity illustrated in the retweet network, the above example shows the convergence depth that occurs on the digital domain. Digital conversations in the twitterspere enable a co-location of interests and agendas spanning the most intimate of conversations about where to meet up tonight with a group of friends, and what is being offered down the road at the local high street through to latest up-dates on global events. As experienced across the digital spectrum the experience for the individual tweeter is compressed the place to go if you want to find out the most immediate events. For those who are more tightly networked the value gleaned is similarly relational. The twitterspere is proving to be a place where connected businesses can network and therefore extend the commercial value associated with supplier and consumer engagement across the entire supply chain. For example broadcasting across their consumer network is another place where business can offer their latest discounts and incentives as well as entice the local foot traffic to drop in for a chat. Further examples include original tweets such as those from Argos communicating the availability of the Playstation to an

audience in a less conventional manner. A tweet from Agos helpers back to a customer stated “Safe badman, we getting sum more PS4 tings in wivin da next week y’ get me. Soz bout da attitude, probz avin a bad day yo.” (Argoshelpers, 2014, Mar 8) The network value of this tweet is intensified when the same tweet is retweeted by well connected followers as well as being published in the conventional newspaper media.

Unlike relying on the bricks and mortar high street the information that flows via the digital high street of the twittersphere quickly folds in on itself as individuals connect with each other and connectivity converges with topics of interest, sociality and overlapping consumption patterns all in an open and public domain. Therefore businesses who are actively connected to consumer bases are in a prime position to take advantage of direct engagement with customers and build a prosuming approach to supply chain integration. The use of twitter therefore positions a digital platform in which a business model that takes up the social supply chain perspective is able to construct a seamless environment for connecting with a niche market range (friends). Twitter aids with the provision of a key logistical service; the use of rapid and immediate communication. The development of this form of direct and succinct communication has the potential for extended forms of application in and out of the future city (e.g. special offers, stock levels).

Extending supply chain engagement in the retail sector extends not only in terms of sourcing, distribution and widening audience market reach. The examples above illustrate the inventive ways many retailers are engaging with their network and consumer base. Offers and specials are now cyclic in their intention where consumers are requested to provide feedback relating to the products to open up lines of communication and in this way build commitment and brand loyalty in a way not previously possible except in a face-to-face environment. Prosumption at its best extends via the positive experience within the digital networked exchange but also into the physical world via word of mouth and trust building between as yet connected potential customers. On the flip side of the experience the retail business itself for its return on investment (ROI) can gather valuable information from its own client base regarding a particular product as well as what and why particular experiences work from these interaction.

5. The social supply chain and new business models

The current retail landscape is again reshaping the high street. In recent decades consumers have increasingly driven to out-of-town parks and shopping centres persuaded by value, convenience, and choice not available on the high street (Guy, 2011). Many high streets have stood vacant, neglected and misunderstood by consumers, town planners, investors and retailers (Wade, 2014). The high street’s success is claimed to depend on the health of the local economy and its ability to attract footfall (Deloitte, 2013) but despite the former claim there are many examples of neglected high streets in more affluent areas such as Altrincham in Greater Manchester and Crouch End in London. Other factors that have shaped the current state of the UK high street include the recession, loss of consumer confidence, lack of access to car parking and unfriendly cycling and walking routes into the high street (BIS, 2011). Changing demographics within local communities as well as a generally aging and more transient

population has contributed to the overall narrative surrounding the demise of the high street (BIS, 2011). In a similar contrast between the high street and out-of-town shops that goes beyond a simple comparison of prices it is the experiential elements of the physical high street and online shopping that distinguish one from the other (Deloitte, 2013). From the perspective of the high street, what motivations and incentives are there to entice shoppers back to this physical location? Business models that take up the social supply chain perspective will necessarily attend to the construction of a seamless environment for connecting with friends, engaging with the variability and uncertainty provided by independent shops and traditional markets, the provision of sustainable key logistics services and removal of the many transportation challenges for shoppers and retail items in and out of the future city. A further challenge for the physical high street is the extent to which consumer expectations have been raised by digital retailing including its 24/7 availability, instant price comparison checks, vast supplies of known stock, further linked product suggestions from companies who know their customer's habit and the encouragement of consumer-to-consumer conversations in the forms of reviews and suggestions (BIS, 2011). The challenge presented by ecommerce is compounded by the presence and significance of online social networking that, at least partially, remove the purpose of the high street from the social infrastructure of the current and future city. Meeting people and reconnecting with friends is increasingly less the result of a chance encounter or a pre-arranged rendezvous on the high street. For the high street to remain a pivotal and relevant aspect of the retail experience there must be an alignment of the physical and the digital in terms of both the retail and social. Initiatives such as "Portas Towns" fail and the Government's Future High Street Forum will miss addressing the issue because they fail to prioritise the integration of new ways of shopping and socialising with the traditional high street. From the perspective of the social supply chain, retailing and sociality are integral.

Behind the scenes business improvements drawn out of the application of the social supply chain assist physically located retailers to be competitive on the high street. In examining the intersection of delivery strategy and co-consumption actions of the social supply chain (see Figure 1), an integrated business service backend that clusters high street shops and offers the ability to select, and pay for a range of goods that are then collected together and immediately delivered back to a shopper's home - through the actions of other shoppers - draws out the logistical aspects of a new business model. When coupled with an integrated backend services a co-consumption concierge service can contribute to the balancing strategy for a social supply chain. With the integration of systems relating to purchasing and delivery between multiple retailers the service can utilise matching analysis to chart a live path between retailers. This itself would be a challenge to the efficiency and philosophy of Amazon's recent experiments in predictive shopping that offers the prospect of supplying goods before you buy them (Simpson 2014) - and consequently removing any element of discovery or exploration from the shopping experience. If there was a link between personal data and the high street then the high street could collectively know about a needed birthday present, a pending holiday or party, the weekly food needs or suggested new food and drinks, or menu ideas. The digital co-consumption concierge would then provide the itinerary for exploring the available options that can be found on a high street. A key distinction for any digital assets created to support co-consumption-oriented high street business models would be to embed the mechanism for exploration,

entertainment and discovery rather than 'merely' the more sterile process of ordering online. The intention of a co-consumption concierge is to create anticipation and excitement around actions that includes, among other things, the opportunities for face-to-face meetings with friends and family.

6. Conclusion - The social supply chain and future cities

This paper has presented a number of business models that illustrate the changing relationship between a traditional supply chain approach to shopping and retail and the application of digital technology to current high street practices. While there are existing studies regarding the social supply chain (Bunte, 2006; Salam, 2009; Hoejmose et al, 2012) we have argued that there is the need for a more nuanced use of the word 'social' in the supply chain. We have argued that a fuller systematic understanding of the 'social' enables a more appropriate building of supply chain strategy in the digital age as it integrates the complexity of human sociality and action with the collective and systematic processes of business as they are now and how they will potentially be in the future. In making this association we have suggested that the 'social supply chain' has two interrelated strategies concerning delivery and balance linked with the actions of co-creation, co-production and co-consumption. Exploring social supply chain strategy in relation to the generative capacity of connecting multitudes of sellers and buyers in virtual space and through the use of networked technologies is important because it offers to both producers and consumers supply and consumption opportunities that are almost free (Zittrain, 2009). We therefore put the case for the need for a more nuanced understanding of the 'social' in relation to the supply chain and contemporary business practice. We have drawn on theorists such as Rifkin (2011) and his description of The Third Industrial Revolution and how it is altering the transactions as significant for building supply chain strategy. It is therefore important for many city based retail business to consider lateral scaling rather than hierarchically scaling, with collaboratively rather than top-down supply chain strategy because there has been a shift in the supply chain fulcrum to a network distributed and co-located operation that requires retail businesses to devise carefully applied strategies relating to balance and location. The rapid decline in transaction costs brought on by The Third Industrial Revolution are ushering a change to distributed capitalism as well as macro-trends that is likely to alter the way supply chain strategy can be operationalised.

By drawing on a series of case studies as contemporary lived examples we have illustrated how the full nuanced understandings of a particular retail business 'social supply chain' perspective will help aid businesses in the construction of a seamless environment that will give them leverage opportunity in a digital age. The social supply chain provides independent shops as well as traditional markets, with the potential of innovative leverage to reduce provisions of key logistics services as well as to aid the removal of transportation barriers for shoppers and retail items in and out of the future city. A current challenge for the physical high street is the extent to which consumer expectations have been raised by digital retailing. The challenge presented by e-commerce being further compounded by the presence and significance of online social networking which partially, removes the socialising purpose of the physical high street and its relationship to the infrastructure of the city. As the shopping experience shifts away from

'shoppers' to 'visitors', retail spaces must now provide an experience and a level of enjoyment when consumers visit a location. It is therefore necessary for future innovation and supply chain development to consider the significance of co-operative and prosumption activities as they relate to city dwelling and consumption and production practices.

The case studies have illustrated how the social supply chain brings a more efficient model. Rather than estimated quantities of raw materials or finished products being delivered into high streets bringing with them pollution and traffic flow issues the dialogues regarding demand which are opening up between companies, high street designers, manufacturers and consumers or pro-sumers (Jenkins, 2006) bring a greater knowledge and understanding and so a more finely tuned value and supply chain and more attractive high streets. As presented throughout the paper in order to build and utilize a 'social supply chain' two interrelated strategies concerning delivery and balancing are needed. These integrated strategies when coupled with social media link the actions of co-creation, co-production and co-consumption. The delivery strategy of the social supply chain is highlighted when it is applied to the movement of potentially unique items that have either been grown, made, crafted or are simply owned by individuals and when to locational or transportation barriers to entry are reduced through social media engagement (Sioshansi, 2013, p.266). Social supply chain strategies presented in the paper have included examples of retail businesses giving away something as an incentive, where the underlying requirement from the customer is that they will bring their own specialist product or skill to a specified location. The first strategy presented explored a delivery strategy of the social supply chain found in the movement of potentially unique items that have been grown, made, crafted or simply owned by individuals delivered by their own actions to permanently or temporarily fixed retail or storage locations. While traditional retail examples have existed in relation to supply and demand, the experience of a social supply chain in action is typified by the pop up shop strategy (for example where an invited chef operates a specialist evening for one night only) or Moss Ciderbring your own apples production. The Moss Cider example presents a non-for profit business model, where an adapted ethical sourcing practice, stimulates innovation within a local economy. The extended supply chain example encourages a positive contribution from local communities and increased participation in local SMEs in their own supply chain. This self-organising project is an open platform for all who want to help or learn how to cider press and there is an interest in developing a local skill base to encourage participation in the production of the cider. Co production in this way extends beyond a bounded supply produce business model to the social supply bound in community and/ or locational association.

The second strategy of the social supply chain presented the need for a balancing strategy between the delivery of people to consumers to fixed locations within the high street. The second example presented high street presence of virtual Brands and where residents are invited to "co-create" their high street based on their shared needs. Based on survey results, analytics and subsequent brand recommendations (respondents who suggested X also suggested Y), a customised high street of pure play virtual brands is temporarily constructed. Integrating the virtual and the real, those shops nominated have a very different approach from the traditional retail model. For example to reinject interest and community priority the pop up

shop can be activated and because it is transient and pops up as a blend of real and virtual the experience is a networked one of social shopping via co-creation (of the transient high street) and co-consumption of the products (with real and virtual co-shoppers).

The third example of the social supply strategy is an example of digital conversations that enable a co-location of interests and agendas through co-consumption. The use of digital media as a communication platform for retailers and consumers enables engagement and the possibility of co-consumption. Widening the sets of conversation widens choices for retail whether it relates to the high street or whether it is through consideration of the local or international specific demands. By broadening conversation using digital platforms such as twitter or Facebook means that intimate of conversations about where to meet up with friends, to what is being offered on the local high street can enhance high street participation and physical as well as virtual brand loyalty. Broadcasting across the network is a place where businesses can offer their latest discounts as well as incentives to entice the local foot traffic.

All examples of social supply chain strategy in action have illustrated the importance of balance and locational emphasis to the businesses supply chain strategy on the high street. Schaffers et. al., (2011) disentangles the significance of city living and the improvements the Internet can offer in term of city dwelling. While a number of theorist's have explored the 'social' in terms of the use of social media being embedded into existing supply chains (Moore and Neely, 2011) or the 'social' considerations that are bundled within corporate social responsibility in supply chains (Perderson, 2009); we have explored in detail the advantages and leverage potential of digital network connectivity and the many opportunities being provided by networked operations or 'co' connected, congested or cooperative/ shared engagement. In particular the significance of strategy balancing between the physical and city retail opportunity and the digital has been presented; as well as the importance the balancing of strategies relating to demand and supply for residential living. It is therefore important the supply chain strategy so to shifts to included the creative ways that businesses and consumers are engaging together to take advantage of the increasing density of urban living and/ or living in a digitised world.

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