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Responsiveness in fashion supply chains: era of social media

Operations and Supply Chain Management

Bachelor's thesis

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Supply chains are becoming increasingly complex due to globalisation and industry developments. The fashion industry itself requires intricate supply chains due to the large variety of products the companies offer. Fashion supply chains have often long lead times due to their complexity and globality. This creates a conflict with the fact that time and speed are central to the industry. In addition, customers' requirements are constantly increasing, requiring a wide range of products to be quickly available. Due to these factors, responsiveness is a necessity within the industry.

Social media is one of today's popular areas of research. It is used by a very large number of people, and especially for young people it is an important part of everyday life. It has the potential to affect us in several ways, including how and what we consume. The impact of social media has been studied with links to several aspects, but the supply chain perspective remains limited. However, there is a link between the two, given the importance of the supply chain in meeting customer demand. In the fashion sector in particular, the importance of the supply chain is highlighted. The purpose of this thesis is therefore to explore how social media emphasises the need for responsiveness in fashion supply chains. This will be investigated using consumer behaviour as a pathway. The thesis is a literature review, combining literature from several fields to create a comprehensive picture of the topic. It aims to answer to two research questions. Firstly, how social media highlights the need for responsiveness in fashion industry supply chains, and secondly, how should fashion supply chains improve their responsiveness in order to respond to these changes.

Literature suggests that social media emphasises certain aspects of the industry and its consuming behaviour that create the need for responsiveness, further emphasizing this need. These include impulse buying, trendiness, the complexity of fashion consumption, the spread of fashion through networks and the novelty aspect of products. It has also the ability to create new phenomena specific to this era, further complicating today's business environment. This thesis also explores how fashion supply chains should improve their responsiveness. Four different strategies; lean manufacturing, agile supply chain, quick response (QR) and just-in-time (JIT) are examined and compared. It is found that all four aim to reduce lead times, which is key to the industry. All four of them focus on slightly different areas, but their characteristics nevertheless contain a lot of overlap, depending on the literature reviewed. It is therefore important to understand the nature and challenges of the industry, and aim for responsiveness as a baseline characteristic, rather than focusing on implementing a specific approach to a company's supply chain. Such an understanding will enable supply chain development, as well as a more rapid response to customer demands, which is critical in this demanding industry. However, agile supply chain and quick response stand out because of market sensitivity, which can be seen as crucial in the era of social media, marked by rapidly changing trends and consumption patterns.

Key words: social media, fashion consumption behaviour, fashion industry, responsiveness, fashion supply chain

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Toimitusketjuista muodostuu yhä monimutkaisempia globalisaation ja alan kehityksen vuoksi. Muotiteollisuus itsessään vaatii mutkikkaita toimitusketjuja, koska yritysten tarjoamat tuotevalikoimat ovat suuria. Muotialan toimitusketjujen läpimenoajat ovat usein pitkiä niiden monimutkaisuuden ja globaaliuden vuoksi. Tämä aiheuttaa ristiriidan sen kanssa, että aika ja nopeus ovat keskeisiä tekijöitä alalla. Lisäksi asiakkaiden vaatimukset kasvavat jatkuvasti, mikä edellyttää laajan tuotevalikoiman nopeaa saatavuutta. Näiden tekijöiden vuoksi responsiivisuus on alalla välttämättömyys.

Sosiaalinen media on yksi tämän päivän suosituista tutkimusaloista. Sitä käyttää erittäin suuri joukko ihmisiä, ja erityisesti nuorille se on tärkeä osa jokapäiväistä elämää. Se voi vaikuttaa meihin monin tavoin, muun muassa siihen, miten ja mitä kulutamme. Sosiaalisen median vaikutuksia on tutkittu useisiin eri aiheisiin liittyen, mutta toimitusketjujen näkökulma on edelleen rajallinen. Näiden kahden välillä on kuitenkin yhteys, kun otetaan huomioon toimitusketjun merkitys asiakaskysyntään vastaamisessa. Erityisesti muotialalla toimitusketjun merkitys korostuu. Tämän tutkielman tarkoituksena onkin tutkia, miten sosiaalinen media korostaa muotialan toimitusketjujen responsiivisuuden tarvetta. Tätä tutkitaan käyttämällä kuluttajakäyttäytymistä aiheiden linkityskohtana. Tämä opinnäytetyö on kirjallisuuskatsaus, jossa yhdistetään useiden eri alojen kirjallisuutta, jotta tutkittavasta aiheesta saadaan kattava kuva. Sen tavoitteena on vastata kahteen tutkimuskysymykseen. Ensin, miten sosiaalinen media korostaa responsiivisuuden tarvetta muotialan toimitusketjuissa, ja toiseksi, miten muotialan toimitusketjujen tulisi parantaa responsiivisuuttaan, jotta ne voisivat vastata näihin muutoksiin.

Kirjallisuuden mukaan sosiaalinen media korostaa tiettyjä alan ja sen kulutuskäyttäytymisen piirteitä, jotka luovat tarpeen responsiivisuudelle. Tämä korostuminen lisää responsiivisuuden tarvetta entisestään. Näitä ovat impulssiostaminen, trendikkyys, muodin kuluttamisen monimuotoisuus, muodin leviäminen verkostojen kautta ja tuotteiden uutuusnäkökulma. Sillä on myös kyky luoda uusia, tälle aikakaudelle ominaisia ilmiöitä, jotka monimutkaistavat nykyistä liiketoimintaympäristöä entisestään. Tässä tutkielmassa tarkastellaan myös sitä, miten muodin toimitusketjujen tulisi parantaa reagointikykyään sosiaalisen median aikakaudella. Neljää erilaista strategiaa: lean manufacturing, agile supply chain, quick response (QR) ja just-in-time (JIT) tarkastellaan ja vertaillaan. Todetaan, että kaikilla neljällä strategialla pyritään lyhentämään läpimenoaikoja, mikä on alalle erittäin keskeistä. Kaikissa neljässä strategiassa keskitytään hieman eri aspekteihin, mutta niiden ominaispiirteet ovat kuitenkin osittain päällekkäisiä tarkastellun kirjallisuuden perusteella. Sen vuoksi onkin tärkeää ymmärtää toimialan luonne ja haasteet ja pyrkiä reagointikykyyn perusominaisuutena sen sijaan, että keskityttäisiin tietyn lähestymistavan toteuttamiseen yrityksen toimitusketjussa. Tällainen ymmärrys mahdollistaa toimitusketjun kehittämisen sekä nopeamman reagoinnin asiakkaiden vaatimuksiin, mikä on ratkaisevan tärkeää tällä vaativalla alalla. Agile supply chain ja quick response kuitenkin erottuvat edukseen markkinaherkkyiden vuoksi, jota voidaan pitää ratkaisevana tekijänä sosiaalisen median aikakaudella, jota leimaa nopeasti muuttuvat trendit ja kulutustottumukset.

Avainsanat: sosiaalinen media, muodin kulutuskäyttäytyminen, muotiteollisuus, responsiivisuus, muotialan toimitusketju

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1 Introduction

The constantly diversifying business environment is simultaneously benefitting customers and creating difficulties for supply chains to plan production correctly (Fisher et al., 1994). One of the key changes of the last decade concerns social media. Social media is expanding explosively (Ziyadin et al., 2019), in a manner that was difficult to even conceive a few years prior today (Asur et al., 2011). It has become an important platform for communicating and interacting for both, companies, and consumers, engaging more than 2 billion people (Ziyadin et al., 2019). It has changed the power towards consumers, notably altered consuming (Shamim et al., 2024) and created new phenomena such as social media influencers and cancelling (Demsar et al., 2023; Saldanha et al., 2023; Shamim et al., 2024).

Fashion as a whole is a notable industry regarding the world's economic out-turn, and it remains to be one of the largest employers of the world (Čiarnienė & Vienažindienė, 2014b). It involves everything from the creation of the products to the advertising and distribution of them and encompasses products ranging from high end designer fashion to fast fashion displayed in chain stores (Čiarnienė & Vienažindienė, 2014b). The fashion industry of today is highly globalized and constantly evolving (Čiarnienė & Vienažindienė, 2014b), with fashion markets being described as “complex systems that frequently demonstrate high levels of ‘chaos’” (Nenni et al., 2013). Because of its growing dynamism and complexity, the industry is a popular subject among researchers of operations and supply chain management. It is acknowledged that due to this evolvement of the industry responsiveness is needed to stay viable. (Brun & Castelli, 2008)

Fashion reflects the evolution of aspects such as cultural and aesthetic dimensions. It is used for numerous aspects, beyond just fulfilling basic needs. It is used to communicate, construct identities, belong to groups, and stand out from the crowd. (Čiarnienė & Vienažindienė, 2014b) Processes of social transmission significantly affect brands as well as consumers. Social communication affects our decision making and word of mouth has seen to have an impact on sales. (Berger & Milkman, 2012) It is noted that social medias influence on buying behaviour, and the opportunities it provides as a marketing tool, are current key issues for marketers (Voramontri & Klieb, 2019). In the fashion industry, the focus tends to be more on marketing and communications, with operations and manufacturing playing a secondary role (Brun & Castelli, 2008). Easley and Kleinberg (2010) have stated that examining the usage of social media in the fashion context is notably informational since fashion outspreads through network effects. While the importance of information regarding social media for marketers has been noted, this thesis seeks to integrate the topic within the subject of supply chain management. This is done by linking supply chain management to the effects of social media, using consumption behaviour as a pathway. In this thesis, consuming is seen in relation to supply chain management, particularly from the perspective of responsiveness.

This thesis aims to respond to following questions:

1. How does social media highlight the need for responsiveness in fashion industry supply chains?
2. How should fashion supply chains improve their responsiveness in order to respond to these changes?

The thesis is structured as follows. Chapter 1 is the introduction of the thesis, setting out the background, structure, and research questions. Chapter 2 of the thesis focuses on the fashion industry and the ability of social media to shape our consumption habits in the context of the industry. The key features, diversity of consumption and demand forecasting in the industry are discussed. The ability of social media to generate trends, the new phenomena it creates, will also be examined, as well as the role of new, era specific phenomenon, social media marketing and cancel culture. Chapter 3 focuses on responsiveness. First, it explains why this feature is so important for supply chains within the fashion industry, and then links the issues to chapter 2 in addressing how social media accentuates this need. It also discusses examples of practices that the literature suggests can improve responsiveness in fashion supply chains, finally linking their qualities and similarities to each other, and to today's fashion industry in the era of social media. Chapter 4 deals with the conclusions of the literature review, discusses the answers to both research questions provided by this literature review and summarises the topic.

2 Social media affecting consuming behaviour in the fashion industry

Digitalization and social media are some of the key themes of the 21st century. Over the last decade, social media has evolved from a relatively simple channel for sharing images and messages, to a complex and influential channel that allows a large part of the world's population to be reached with just a few clicks of a button. People generally agree on what counts as social media, yet a consensus about the factors that make these tools become labelled as social media is yet to be gained (Carr & Hayes, 2015). This fact makes it difficult to develop extensive theories and models regarding the subject (Carr & Hayes, 2015). Carr and Hayes (2015) have formally defined social media as “Internet-based, disentrained, and persistent channels of masspersonal communication facilitating perceptions of interactions among users, deriving value primarily from user-generated content”.

Social media has notably altered consuming, marketing and the way information is shared (Shamim et al., 2024). Examining the usage of social media in the fashion context is notably informational since fashion outspreads through network effects (Easley & Kleinberg, 2010), through media, as well as through interaction with other individuals and groups (Ekström, 2010). Although social media itself and the ways in which it influence our behaviour and consumption are highly visible in the daily lives of a large proportion of people, especially within Generation Z (Djafarova & Bowes, 2021), it is a phenomenon yet to be fully understood.

2.1 Fashion industry

Fashion can be seen as a wide term, which usually comprises markets or products which are characterized by a style element that tends to be impermanent or fleeting (Christopher et al., 2004). According to Čiarnienė and Vienažindienė (2014b) the specific features of the fashion industry can be described by five characteristics: “its volatility, velocity, variety, complexity and dynamism”. The sector is a broad entity that encompasses many different stages of the product life cycle. It includes products from fast fashion to designer fashion, and everything in between. (Čiarnienė & Vienažindienė, 2014b) Fashion markets are highly trend-driven, globalized (Čiarnienė & Vienažindienė, 2014b) and typically display the following qualities: short life-cycles, high volatility in demand, low predictability, high impulse purchasing, (Christopher et al., 2004) and seasonality (Shi et al., 2021). Shelf out-of-stock situations are highly unwanted and must be avoided (Fumi et al., 2013). A phenomenon of increasing variability and growing order volumes combined with the consumers’ requirements for shorter lead times is seen in the industry (Čiarnienė & Vienažindienė, 2014b). At the same time,

globalization of the industry has led to longer lead times, due to companies off-shoring their sourcing of products and materials (Nenni et al., 2013).



Figure 1: Characteristics of the fashion industry

Figure 1 visualizes the characteristics of the fashion industry. These characteristics illustrate why fashion is such a challenging and complex environment. The challenging nature of it has caused it to even be described as chaotic (Nenni et al., 2013), but also led to its use in modelling development for business models in other industries, such as Fast Moving Consumer Goods (FMCG) market (Ericsson & Sundström, 2012).

2.1.1 Consumption of fashion

The demand of fashion is strongly determined by things such as promotions, marketing, and advertisement, as well as larger factors beyond the company's control, including seasonality, festivities, socio-economic factors and weather. (Fumi et al., 2013). Technology has made consumers more aware of new trends and brands, leading to increased customer requirements (Nenni et al., 2013), and caused intensified awareness and sensitivity regarding fashion trends (Chetioui et al., 2020; Jin et al., 2021), which have already been an important driver in the industry (Čiarnienė & Vienažindienė, 2014b). Due to these changes in the environment, the way individuals are consuming in the fashion industry is increasingly driven by trends (Chetioui et al., 2020; Jin et al., 2021), and impulse buying (Shamim et al., 2024).

Fashion is a complicated social phenomenon (Čiarnienė & Vienažindienė, 2014b; Ekström, 2010), and the consumption of fashion is a much larger phenomenon than the mere act of buying clothes to fulfil basic needs. It is more than just consumption, and it is used as a way of communicating by both, individuals, and society. (Ekström, 2010) Fashion is connected to our identities (Čiarnienė & Vienažindienė, 2014b; McNeill & Venter, 2019), through how we see ourselves, and how we want others to see us in relation to others, in other words, through self-concept and social identity (McNeill & Venter, 2019). Especially young individuals express their identities through fashion purchases (Djafarova & Bowes, 2021). Possessions have a massive impact on an individual's identity, and serve as a tool in the evolution of one's self (Belk, 1988). This is why individuals may over consume fashion, especially during periods when our identity undergoes strong changes, as happens in adolescence (McNeill & Venter, 2019).

According to Shen et al. (2017) the consumers of the luxury fashion retailing can be divided into fashion leaders and fashion followers, which interact with each other, creating social effects. Fashion leaders are less eager to buy a certain luxury fashion product if the other group is purchasing it, whereas the phenomenon is the opposite when the follower groups examine fashion leaders' actions. Fashion leaders often have massive social power on the internet, whereas the followers base a lot of their purchasing on the information gotten through social media. (Shen et al., 2017) This effect can be seen exploited in influencer marketing.

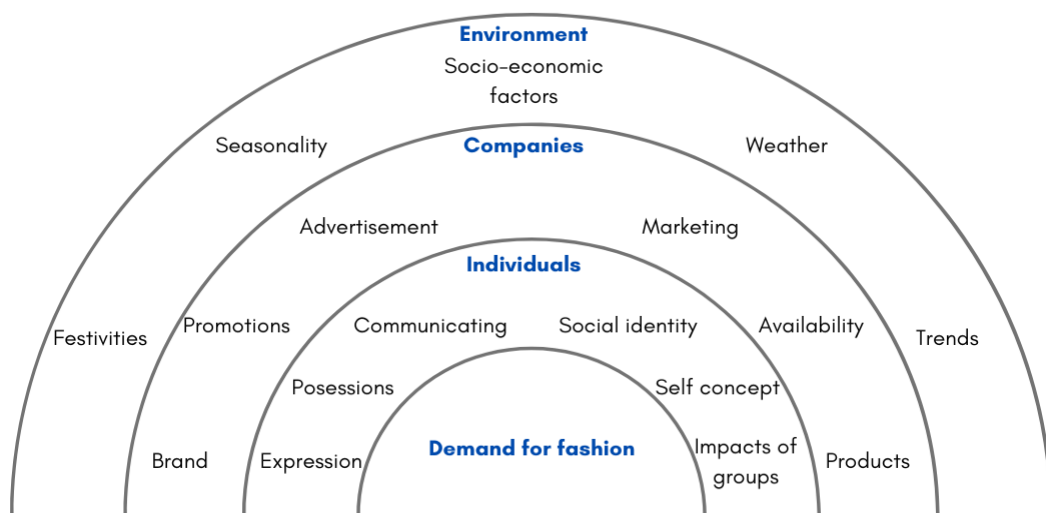


Figure 2: Factors affecting demand for fashion

Figure 2 illustrates the various factors influencing fashion demand, and how they can be categorized into different levels based on their origin: individuals, companies, or environment. It can be concluded that the consumption of fashion is a complex phenomenon, influenced not only by the needs of individuals. Is it also shaped by the construction of identity in relation to oneself and others, and by the networks and environment around them. The challenging nature

of the industry can be seen as the combined effect of social mechanisms behind it and the fundamental characteristics of the industry.

2.1.2 Fashion industry supply chains

Today's business environment is complicated by many factors beyond companies' control. The changes in our environment have led to a situation where the power in a supply chain is at the customer, whereas it used to be at the supplier (Sarı, 2020). The customers of the industry have varied expectations, and their preferences evolve dynamically. They constantly expect a broad variety of products and new styles. (Nenni et al., 2013) The ability to meet customers' requirements is fundamental in order to achieve competitiveness (Dolgui & Proth, 2010). Companies and their supply chains must modify themselves to meet the evolving requirements to stay competitive. Today's consumers expect an efficient and transparent supply chain that guarantees timely delivery (Ericsson & Sundström, 2012). The reason why the fashion industry is so successful is its ability to be so diverse and adaptable that it can meet the varied demand of consumers (Čiarnienė & Vienažindienė, 2014b). Supply chain management is defined as planning, organizing, and managing the activities of a supply chain. It is increasingly important since the competition is transitioning from between firms to between their supply chains. (Vonderembse et al., 2006)

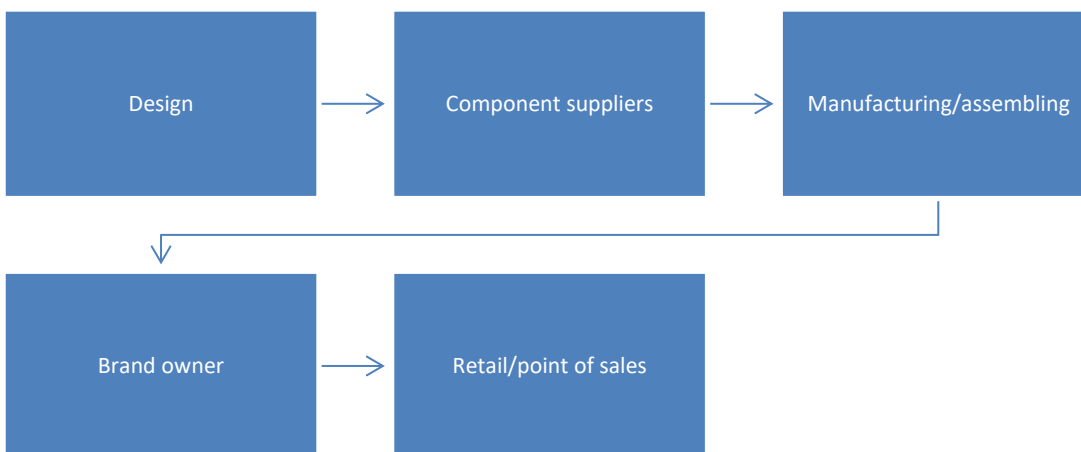


Figure 3: A simplified visualisation of material flow in a fashion supply chain based on (Brun & Castelli, 2008)

Figure 3 represents a simplified visualisation of a supply chain model of a company operating in the fashion industry. It is based on Brun & Castelli's (2008) examples of different fashion brands' supply chain configurations, which have been simplified into a monoline format. This is done to support the aim of this thesis to consider the industry as a whole, rather than the perspective of a specific brand. The step "design" has been added before the following steps,

since it is traditionally an important part of the start of a supply chain (Vonderembse et al., 2006). In practice fashion supply chains are far from such a simple, monoline model. They form intricate and complex networks, which are shaped by the global nature of the industry (Čiarnienė & Vienažindienė, 2014b) together with the great variety of products (Čiarnienė & Vienažindienė, 2014b; Masson et al., 2007). The transition from mass fashion towards more segmented fashion (Nenni et al., 2013) further underlines the complexity of supply chains in the industry.

Production of such great variety of products typically needs a considerably large and flexible supply network. In a network-based supply chain it is ideal to leverage the individual suppliers' core competencies (Masson et al., 2007), in other words to understand what should be kept in own production and what to leave to individual suppliers. A prime example of this can be seen in the supply chain of the Spanish fast-fashion company Zara, in which only cost-efficient operations are organized in-house, and other operations are completed in more than 300 small subcontractors. In addition to that the network is viewed as a holistic operator, in which the focal firm works as the directing party, according to which the other parties of the network change their operations. (Christopher et al., 2004) If a retailer succeeds to accomplish flexibility and speed in managing such complicated network they are able to maximize profits when meeting the market demand (Masson et al., 2007).

2.1.3 Demand forecasting in the industry

Forecasting can be determined as a scientific procedure where future events and their probabilities are estimated with the help of past data (Lewis, 1997). Demand forecasting can use both, historical data, and prevailing trends to predict future sales volumes and patterns (Hofmann & Rutschmann, 2018). Forecasting can be done either in a qualitative or a quantitative method (Fumi et al., 2013). It is critical for operations management (Nenni et al., 2013), and can be seen as particularly central to fashion industry (Nenni et al., 2013; Ren et al., 2020). This is because of the coexisting unpredictability of demand, periodical trends, and limited historical data (Nenni et al., 2013). Simultaneously, it still poses a challenging task for both academia and operators of the industry (Ren et al., 2020). This remains despite of the multiple propositions on different approaches (Nenni et al., 2013; Ren et al., 2020), and digital development (Ren et al., 2020).

The typical qualities of the fashion markets; short life cycles, high volatility in demand, low predictability and high impulse purchasing (Christopher et al., 2004), volatility, velocity, variety, complexity and dynamism (Čiarnienė & Vienažindienė, 2014b) and list of numerous subjects strongly determining demand of fashion (Fumi et al., 2013) encapsulate well why forecasting in the industry is extremely complex and difficult. The unpredictable nature of the

demand makes it difficult to forecast demand during a particular period, let alone by a particular product (Čiarnienė & Vienažindienė, 2014b). The biggest issues of the forecasting in the industry are seen to be the brief selling periods, high unpredictability, and the fact that there is only little historical data (Nenni et al., 2013). Čiarnienė and Vienažindienė (2014a) have estimated that accurate forecasting at the item level may never be feasible in the fashion industry due to its nature. Ren et al. (2020) have come to a similar conclusion and evaluated that accurate demand forecasting for fashion industry is impossible, due to the variation in consumer preferences, purchasing behaviour and the trends surrounding the industry. The factuality that forecasting demand for fashion products is proving to be unfeasible has begun to be accepted among both, researchers who study forecasting and by those working in the fashion industry (Nenni et al., 2013).

While forecasting demand in the fashion industry is perceived as challenging, or even impossible, it is constantly evolving along with digitalization. Ren et al. (2020) see future opportunities in the use of big data, which can assist the understanding of the consumer behaviour of the industry and believe that big data could conclude in a less trend-driven future, since consumers are more conscious about their choices, due to massive amounts of information being available. According to Fumi et al. (2013) quantitative forecasting methods that have achieved effective outcomes in the fashion industry are for example extreme learning machines and artificial neural networks. Even though some forecasting methods have given benefitting results, these methods are rarely used by companies. One reason for this is that the commercial software companies that do provide these methods are often too costly for other than large-sized companies to cooperate with. In practical situations, companies often still use basic heuristics in forecasting. Despite these at least partly effective proven forms of forecasting, the authors note that achieving precise forecasts is highly challenging. (Fumi et al., 2013)

It has been acknowledged among both, academics, and professionals of fashion industry, that demand forecasting for fashion products isn't feasible (Christopher et al., 2004; Nenni et al., 2013), and instead of aiming to correctly forecast demand, fashion supply chains should focus on being able to respond to the "real-time" demand (Christopher et al., 2004). Forecast-driven supply chains aren't capable of matching the volatile demand that is a defining quality of fashion markets (Christopher et al., 2004).

2.2 Social media affecting the consumption of fashion

Fashion outspreads through network effects, in which every individual influences the network they're in and the connections formed inside of it. Social media is a network that enables such proliferation. (Easley & Kleinberg, 2010) Social media and the development of internet have created a brand new channel, where consumers can engage and communicate with other

consumers and brands, augmenting and developing their preferences in fashion (Wolny & Mueller, 2013). Fashion spreads through media, as well as through interaction with other individuals and groups. Because of the internet, fashion is spreading in new ways and faster than ever before. This is causing the novelty of fashion swiftly transitioning to ordinary. (Ekström, 2010)

The web offers a very wide range of possibilities for accessing information. Especially women often use platforms such as Instagram to find inspiration regarding fashion (Djafarova & Bowes, 2021). In a study conducted by Djafarova & Bowes (2021) all female participants except for one reported increased impulse purchasing of fashion products as an user of Instagram, which was identified as the most influential platform regarding impulse buying in the fashion industry. The results of their study imply that social media has now a significant role in shaping fashion trends. (Djafarova & Bowes, 2021)

Presently it is still unclear what are the reasons for some topics to become highly popular on social media, while others don't. The same way it has not been cleared how some topics are able to stay viable for a longer period of time than others. Not only does the time of popularity vary, but also the number of user accounts reached varies. (Asur et al., 2011) The phenomenon known as information overload has become a crucial concern within online decision making, caused by the overwhelming amount of information available to the consumer (Voramontri & Klieb, 2019). Among many similar products, one can become a consumer favourite on social media, while the rest of the alternatives go unnoticed. On the other hand, the popularity of one product can cause the popularity of another to rise. A company can become well-known because of a singular product that together with its features and marketing manages to emerge from the information overload of social media. As a product's popularity fades away, the company can also lose its place in the public eye, or conversely stay in the spotlight and gain attention for its other products, consolidating its position in consumers' minds.

Communication regarding fashion includes advertising and influencing among individuals and social groups. The influence exchanged among the mentioned two can be either direct or indirect. (Ekström, 2010) Information from companies and sellers is becoming continuously less important and informed. Conscious consumers prefer to listen to each other regarding their consumption. (Ericsson & Sundström, 2012) The recommendations and opinions of fellow consumers are viewed as a more liable source of information than advertisement. In addition, it is easy to access, and the amount available is massive. It is a key source for today's modern customers who search information regarding possible purchases. (Voramontri & Klieb, 2019)

2.2.1 Social media creating trends

Some research has already been done on the mechanisms by which social media influences consumer behaviour and the emergence and spread of trends. However, the issue is still partly unfamiliar. Especially the question of why certain content becomes viral is still to a great extent undiscovered. The social transmissions social media offers has a major influence on not only consumers, but brands as well (Berger & Milkman, 2012). The way social media affects fashion consuming can be seen to be partly due to its network aspect, through which fashion is distributed (Easley & Kleinberg, 2010). However, the type and characteristics of the content created or shared also have an impact on the effectiveness of the phenomenon (Berger & Milkman, 2012).

Trends can be seen as adaptable, and not only do they affect consumers, but consumers affect them, making trends adapt with their standards and desires. The people who have adopted a trend, and their amount, impacts to the value a product has in other users' eyes. The value can be shifted to either a positive or a negative direction. (Wolny & Mueller, 2013) Zhang et al. (2016) researched the emerging of trends in social media, and whether or not trends are a consequence of so-called opinion leaders and their actions. In their empirical research they found out that the involvement of opinion leaders in early stages of propagation conducts in only slight popularity. Crowds are seen to play a determining part in trend creation, and popular attention in early stages implies wide-ranging scope. Opinion leaders can form a local spreading, but regular people are needed for large coverage, which in turn is needed for a trend to emerge. (Zhang et al., 2016) The findings of this study support the suggestion of Wolny and Mueller (2013) in which the influence between consumers and trends are seen as reciprocal and the number of adapters is seen affecting these impacts. According to Berger and Milkman (2012) even though what becomes viral is often seen as a macrolevel outcome, it is heavily linked to the choices individuals are executing at the microlevel, such as what individuals will be sharing further via their own platforms. The findings of Zhang et al. (2016) are also in line with the observations of Berger and Milkman (2012).

The emergence of contents popularity can be studied not only from a human perspective, but also from the perspective of the content. Shang et al. (2022) have studied predicting online contents popularity. In their research, they have concluded that the popularity is affected by an intricate combination of homophily and social influence. Homophily refers to the belief that individuals with similarities are more inclined to interact, which ultimately can lead to a scenario in which actions spread because of these connections rather than due to causal influence. It is also pointed out that previous studies only take one of these factors into account, which means that their complex interaction is overlooked. (Shang et al., 2022)

Berger and Milkman (2012) researched how online contents characteristics are linked to its social transmissions and virality. In their research, a complex relationship between virality and emotions is revealed. According to their research, a determining factor in what will prosper is to do with the activation and emotion of the content generated. Physiological aspects influence the spread of viral content as well. Positive content was found to become more viral than negative, potentially caused by the fact that shared content can be reflected to the sharing user. Negative content is however more likely to become more viral than content which does not arouse any emotions, and some negative emotions, such as anger and anxiety, are linked positively with the contents virality. This supports the other suggestion of the writers, that content which stimulates high arousal emotions is likely to become more viral. Virality isn't however solely based on the feelings it evokes, but also aspects like usefulness. Also, the motives behind individuals sharing content can be diverse, ranging from self-presentation to amusing others and uplifting one's reputation. (Berger & Milkman, 2012)

The way social media affects consuming behaviour, particularly in the form of viral content and trends, reflects a complex phenomenon in which both human and content characteristics are involved. The research by Berger & Milkman (2012), Easley & Kleinberg (2010), Wolny & Mueller (2013), Zhang et al. (2016) and Shang et al. (2022) reveal several insights regarding this complicated phenomenon. The emotional engagement of the content is an influencer in the virality it faces, with high-arousal emotions playing a significant role to this phenomenon. The virality also depends on the individuals' motives behind sharing content and its utility. (Berger & Milkman, 2012) Trends are shaped by the interaction between the consumers and the content, in which both, individual opinion leaders and masses contribute to the propagation of trends, and how they are adopted (Berger & Milkman, 2012; Wolny & Mueller, 2013; Zhang et al., 2016). These findings suggest that understanding content popularity requires considering both the nature of the content itself as well as the social networks, and their participants, through which it spreads.

2.2.2 Social media- and influencer marketing in fashion

The unique possibilities social media provides have affected marketing and advertising, and social media has become a powerful tool in contributing to a company's marketing goals (Ziyadin et al., 2019). Social networking sites have been commercialized in the last decade, altering their purpose (Jin et al., 2021). Among others, fashion brands have started to harness social media for commercial purposes (Wolny & Mueller, 2013). Social media marketing can be defined as actions of alluring awareness to a brand, product, or a company, using social media. It is predominantly focused on sharing and posting various types of content, with the intention to achieve marketing goals. (Ziyadin et al., 2019) It is based on the power social networking

sites, such as Twitter, Facebook and Instagram, hold, and how they can affect and convince people (Jin et al., 2021). Social media marketing can be done by creating the type of content that attracts curiosity, and a desire to share the content with others. It is a cost-effective way of marketing, taking advantage of often free profiles of platforms. It functions well when the aim is to get in contact with large masses. (Ziyadin et al., 2019)

In 2021 social media advertising had the largest revenue growth among different forms of digital advertising (Wang et al., 2023). There is overlapping, but also differences in factors which make content shared by individuals, and which makes it successful from the perspective of the company. While social media advertising can be a cost-efficient way of marketing the benefits highly rely on people transmitting the content. If the content is left unnoticed or shared in a way which casts the company in a negative light, the possible benefits are lost. (Berger & Milkman, 2012)

The ways and tactics of social media marketing vary depending on the company and brand. An example of such tactics is influencer marketing. It is a modern trend in retail marketing (Shamim et al., 2024), which the fashion industry has embraced in the recent years (Chetioui et al., 2020). Influencer marketing can be defined as a strategic marketing approach, in which a company chooses and motivates an influencer to share advertisement that has a desired positive impact on the company, its brand, or product, to their following (Shamim et al., 2024). Through influencer marketing brands can benefit from influencers' networks on visual platforms (Wolny & Mueller, 2013), and attain a lot of individuals from inside company's target audience (Shamim et al., 2024). According to Jin et al. (2021) social media influencers are "popular social networking site users, who have established a substantial number of followers". They often have a specific domain or domains, such as fashion, in which their content is focused. (Jin et al., 2021)

Influencer marketing can be seen as an evolved form of celebrity endorsement since it is a way of promoting through collaboration with admired people (Jin et al., 2021). Social media can form anyone to be perceived as a celebrity. Individuals can grow a sizeable crowd of followers and fans and reach a large audience of users in social media, due to its increasing usage (Shamim et al., 2024). Social media networks are used through both, corporates' own pages and users, but also through social media influencers and collaboration with them. Although brands often have more followers on their own accounts, collaboration with influencers is beneficial as it allows content to be distributed to a targeted audience. Influencer marketing has other benefits as well, such as higher perceived trust than in corporate communications, as well as possible sturdier emotional engagement. (Jin et al., 2021)

Human influencers can be classified into four categories based on the size of their audience: mega, macro, micro, and nano influencers. The categories are illustrated in Table 1. Mega-influencers are often regarded in the same way as regular celebrities, which underlines the

power and significance social media holds today. However, micro-, and macro-influencers are often opted for regarding social media marketing co-operation, since they are able to preserve a strong connection to their thoughtfully cultivated audience. (Shamim et al., 2024)

Table 1: Four categories of influencers (Shamim et al. 2024)

Influencer category	Amount of followers / audience
Nano	<1 000
Micro	1 000–50 000
Macro	100 000–1 000 000
Mega	>1 000 000

Collaboration with influencers can have an impact on consuming and purchase intention. Recommending a brand to others is more likely to happen if it has already been endorsed by well-liked influencers. Social media is seen as a more reliable source of information, compared to communication and advertisement produced by companies, and it has become a relevant information source for customers looking to expand their knowledge in the context of potential purchase making. (Voramontri & Klieb, 2019) If the influencer is perceived as trustworthy, they are more likely to influence purchase intention. The attitudes towards both, the brand and the influencer have an important role on purchase intention. (Chetioui et al., 2020)

Influencers can also affect the urge to buy impulsively (UBI). Impulsive buying is referred to as “unplanned behaviour considered irresistible, abrupt and complicated.” (Shamim et al., 2024) While there is some disagreement within the literature on the definition and description of impulse buying (Shamim et al., 2024), it plays a crucial role in consumer behavior research and must not be overlooked (Djafarova & Bowes, 2021). The perceived trust of the influencers post has a notable positive influence on one’s UBI. This, in turn, is positively influenced by perceived trust of the influencer among consumers, as well as the perceived trustworthiness of the communication channel and the message itself. (Shamim et al., 2024)

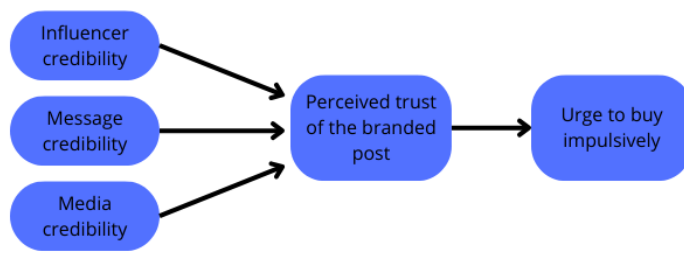


Figure 4: Influencers affecting the urge to buy impulsively (Shamim et al. 2024)

Figure 4 illustrates the factors contributing to the emergence of UBI in branded posts. However, the evolution of UBI can be reduced because of persuasion knowledge. The term refers to the awareness and comprehension of individuals regarding the techniques marketers use. (Shamim et al., 2024)

2.2.3 Cancel culture

The presence of social media has shifted the balance of power between brands, celebrities, and consumers towards consumers. This is because social media allows consumers to use its platforms to their advantage in case of a negative event. Both, people, and physical products can face cancellation, with celebrities and brands often being the target of the phenomenon. (Saldanha et al., 2023) Cancellation can be defined as “deliberate collective action on part of consumers – today typically performed on social media – which attempts to force market change through calling for the cancellation of a brand in retribution for an irreparable transgression”. It is a modern form of consumer resistance, which aims to change markets, and marketing to match the values of today’s consumers. It differs from boycotts, which aim to getting companies to apologize or modify their behaviour, since cancelling aims to inflict long term, substantial harm to the target. It has the goal of entirely withdrawing the targets influence or existence. (Demsar et al., 2023)

While the phenomenon itself is new, and the definitions differ, it is often seen to include three elucidating components; public shaming of words or actions on social media, the attempt to remove the support and attention of the target, and the fact that it is driven by the desire of seeing the target experience severe consequences of breaking social norms. This modern-day public consumer activism has the ability to develop into a movement through social media. (Demsar et al., 2023)

While cancellation can be aimed towards a specific public persona, individuals can have an impact on the direction in which the phenomenon develops. Influencers can affect the spreading of cancellation momentum for their personal advantage, due to their large platforms and following. It can help them to reach more views and remain in the spotlight by taking a stand on topical issues, generating captivating and relevant content. (Demsar et al., 2023)

Cancel culture illustrates how the network effects of social media do not only affect consuming in a positive way for companies, enabling the spreading of trends and the popularity of products to amplify, but also the opposite, creation of disapproval and cancellation. It is a phenomenon largely enabled by the social media networks and can have detrimental effects on brands or companies (Demsar et al., 2023). Especially if a company engages in social media marketing, the phenomenon needs to be considered, and the subtlety of the content created in line with social norms must be ensured. It is crucial to comprehend the factors that motivate individuals to share, since it can help organizations and policymakers in preventing backlash from consumers, as well as aid in the creation of contagious content (Berger & Milkman, 2012).

Campaigns and ads are easily visible for anyone, which may pose a risk for the company. A vital risk has to do with the lack of moderation in social media. Anyone can comment anything, whether positive or negative, anonymously, and often without consequences. However, the phenomenon is a threat, even without social media marketing, as anyone can talk about a brand, product or company and start to grow the phenomenon, taking advantage of the network effects of social media.

3 Responsiveness

Today's smart consumers require diversity, simplicity, excellent service, and an efficient, transparent supply chain that ensures the lead time required (Ericsson & Sundström, 2012). The ability to meet customers' requirements is fundamental in order to achieve competitiveness (Dolgui & Proth, 2010). In this turbulent time attitudes and demography are changing and the competition for consumer is intensifying. Innovation regarding business models, structure and behaviour is seen as crucial in order to succeed. (Ericsson & Sundström, 2012) An optimal supply chain for a given company depends on its characteristics. A company can only aim at strategically succeeding to fulfil the needs of the consumer as well as the supply chain when it understands the constraints present in the marketplace surrounding it (Mason-Jones et al. 2000).

Holweg (2005) has defined responsiveness as "the ability to react purposefully and within appropriate time-scale to customer demand or changes in the marketplace, to bring about or maintain competitive advantage". Nenni et al. (2013) have defined the same concept as "the ability to scale up (or down) quickly and the rapid incorporation of consumer preferences into the processes of a supply chain." Christopher et al. (2004) have added short time-to market into the definition. The concept is adaptable to a broad spectrum of manufacturing strategies, due to its straightforwardness (Holweg, 2005).

Responsiveness allows organizations to rapidly identify shifts in the market, reconfigure their operations and processes according to these new conditions, flawlessly trade information beyond organisational boundaries, optimize utilization of systems processing information, as well as take up new technologies regarding processes and products before their competitors (Singh, 2015). Responsiveness requires flexibility, the type of which is determined by the structure and environment of the system (Holweg, 2005).

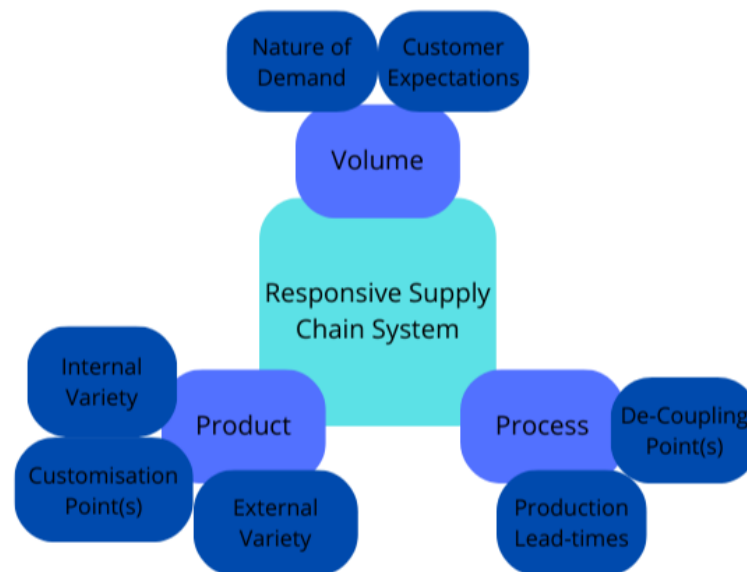


Figure 5: Conceptual model of a responsive supply chain system (Holweg 2005)

Holweg (2005) categorizes features crucial for responsiveness into three dimensions; volume, product, and process, all of which have their own sub-points, as shown in Figure 5. Reichart and Holweg (2007) have identified four different sort of responsiveness: delivery, mix, volume, and product. These definitions highlight how responsiveness can be viewed as linked to different levels and functions. Reichart and Holweg (2007) argue that within a supply chain, responsiveness can be of varying degrees in different levels, influenced by the supply chains overall configuration, and be of different types regarding the time horizon in question. However, it should not be viewed as an individual approach, but as a foundational paradigm, at the core of operations of a supply chain. (Reichhart & Holweg, 2007)

3.1 The need for responsiveness in fashion

The primarily reason why responsiveness is needed in the fashion industry is directly reflected in the fundamental characteristics of the industry. Characteristics such as being highly trend-driven (Čiarnienė & Vienažindienė, 2014b), short life cycles, high volatility in demand, low predictability, high impulse purchasing (Christopher et al., 2004), and seasonality (Shi et al., 2021) all illustrate how time is of the essence to remain competitive in the industry. Čiarnienė and Vienažindienė, (2014b) define the contemporary fashion industry as highly dynamic and globalized. The dynamism highlights the significance of time as a competitive advantage. The

often-high lead times of the industry, partly caused by the internationality of production (Nenni et al., 2013) create a controversy with the dynamism of the industry.

In industries aiming to offer short lead-times combined with a large and simultaneously growing variety of products, responsiveness is critical. Traditional manufacturing strategies in which finished products are manufactured according to forecast aren't feasible. Build-to-order, in which the manufacturing is initiated by the customer order, is growingly more important with time being an increasingly critical part of business. Characteristics that create a need for responsive supply chains are product variety, uncertainty and variability of demand, and concentration of lead-times. (Reichhart & Holweg, 2007) All of these can be found in the characteristics of the industry (Christopher et al., 2004; Čiarnienė & Vienažindienė, 2014b).

If the supply chain fails to function responsively, the volatile and unpredictable demand most likely cannot be met (Reichhart & Holweg, 2007). At the same time, the reason for an items' popularity — whether it is a trend, or a seasonal appeal — may already be passed once the supply chain is able to get the desired product to the end customer, due to the long lead times and short product life cycles. Even if the supply chain is capable of rapidly creating a new production schedule, the changing demand can't be met if the supply chain is already loaded with the previous schedule, made according to the previous demand (Fisher et al., 1994). Supply chains need to adapt a model in which the whole chain is able to change their plans according to the latest information, without certain parts of the supply chain creating either massive surplus or shortage.

Fisher (1997) divided products into functional and innovative with the goal of devising a framework that will help managers and companies to understand the demand they are facing and designing a supply chain for satisfying that demand. Primarily functional products have long life cycles, a relatively predictable and steady demand, making long-term production planning feasible. They are staples of consumers' day-to-day life. Innovative products, in contrast are characterized by short life cycles, high variability and often high number of variants, all making them more unpredictable. With innovative products, it is crucial to study early market signals and be able to react to them rapidly. It must be noted, however, that same products can be provided in either functional, or innovative form. This can cause difficulties for companies who develop their products to a more innovative way, simultaneously ignoring the changes that are reflected from the product development to the optimal supply chain strategy for the product. (Fisher, 1997) Based on the characteristics listed by Christopher et al. (2004), it can be concluded that according to Fisher (1997) fashion products fall within innovative products, and therefore call for rapid reaction. Rapid reaction can be achieved with responsiveness (Christopher et al., 2004; Holweg, 2005; Nenni et al., 2013; Singh, 2015).

3.2 Social media highlighting the need for responsiveness in fashion

According to Ericsson and Sundström (2012) the breakdown of products by type is not sufficient, and buying behaviour should be taken into account when deciding about segmentation. In segmentation products and customers with different requirements regarding when, how, and where to purchase are categorized separately, to respond more precisely to the requirements of each group. Deep understanding of buying behaviour needs more than just the examination of quantitative data. (Ericsson & Sundström, 2012) This highlights why the effects of social media should be taken into consideration not only in the marketing function, but in the functions related to operations and supply chains. Social media is affecting consuming behaviour and the requirements of consumers (Shamim et al., 2024), which the supply chain aims to satisfy. This is underlined by the fact that the competition is moving towards supply chain versus supply chain (Vonderembse et al., 2006).

Based on this literature review, the way social media increases the need for responsiveness in fashion supply chains can be attributed to its highlighting of certain characteristics within the fashion industry. While these features are themselves linked to the need for responsiveness, social media creates further complexity. The features social media is seen to complicate include impulse buying, novelty, spreading through networks, trendiness and the complex consuming of fashion, which includes identity building and communicating. In addition to these it has the ability to create new phenomenon, such as cancelling culture, social media marketing, and influencers.

Impulse buying is affected by social media influencers, whose posts' have been shown to increase urge to buy impulsively (Shamim et al., 2024). The spreading of fashion is known to happen through networks (Easley & Kleinberg, 2010), for which social media gives a new platform. The spreading of information and content is hard to foresee since it has to do with both social and content-related aspects (Berger & Milkman, 2012; Easley & Kleinberg, 2010; Shang et al., 2022; Wolny & Mueller, 2013; Zhang et al., 2016). The consumption of fashion is complex, including aspects of communicating and building identities through it (Čiarnienė & Vienožindienė, 2014b; McNeill & Venter, 2019). Social media platforms work as a channel for communicating, giving and receiving information and inspiration, and a way to compare ourselves to others, which are all important for the communicating and identity building aspects of fashion. It has the ability to create trends at the same time heightening the consumers' awareness and sensitivity of trends (Chetioui et al., 2020; Jin et al., 2021). Fashion lifecycles are already short (Christopher et al., 2004), but this rapid proliferation of fashion caused by new media, such as social media, further complicates the novelty aspect that is central to fashion (Ekström, 2010). The effects of social media can be seen to heighten the "chaos" of fashion markets, since they are still partly unknown and unpredictable.

Why social media emphasises the need for responsiveness can be seen especially in relation to Generation Z. They are the largest generation of today, which is why they have a serious influence on consumer sales worldwide (Djafarova & Bowes, 2021). For an individual of Gen Z, speed is crucial regardless of the activity. This is seen in their consuming as well, with them wanting to get the newest products available even faster than before, and 41% of the generation being impulse buyers. This generation is often termed as digital natives, and they engage with digital content more than the generations born before them. Online communication is a fundamental part of their daily lives, and they use social media to consumption-related issues such as searching for fashion inspiration. (Djafarova & Bowes, 2021) This makes the changes regarding social media crucial, especially if the company's target involves generation Z.

3.3 Improving responsiveness in fashion supply chains

The responses to customer demand have typically been answered to with the help of forecasts, which includes the risk of over- or underproduction (Christopher et al., 2004). While forecasting is unable to model the complex and highly variable demand of the fashion industry, fashion supply chains need to invest in their responsiveness to meet evolving and diverse consumer demands and stay competitive. Uncertainty can be impossible to eliminate from supply chains in which the demand is unpredictable by nature, as is the situation with trendy products (Mason-Jones et al., 2000), such as fashion. Thus, the type and strategy of the supply chain play a key role in staying competitive and responding to the demand. Combining the long lead times for components, the long distances between parties of the supply chain, the characteristics of the industry and high impulse purchasing, the strategic importance of the supply chain is heightened (Čiarnienė & Vienažindienė, 2014b).

According to Čiarnienė and Vienažindienė (2014b) implementing the following strategies, techniques and concepts, the fashion industry supply chains can aim to improve their responsiveness; agile supply chains, lean manufacturing, just-in-time (JIT) and quick response (QR). In this chapter the fundamentals of the mentioned are addressed according to literature. It should be noted, however, that each of these covers several distinct approaches and tactics, which can be used in different ways, to different extents, depending on the operations and structure of the organisation. The aim is therefore to identify their main features, objectives, similarities, and potential benefits of their implementation in the fashion industry in the era of social media.

3.3.1 Agile supply chain

Agility can be defined as something that takes place in a volatile marketplace where the knowledge about a market together with a virtual corporation is used to utilize beneficial opportunities (Ben Naylor et al. 1999), and it primarily revolves around responsiveness (Christopher et al., 2004). The ability to succeed in an environment where there are constant and unpredicted changes is seen as a primary characteristic of agile systems (Gligor & Holcomb, 2012). Agile supply chains aim to be demand-driven and information-based, whereas conventional supply chains are forecast driven and therefore inventory-based. Agility requires significant alterations in arranging the organization and its strategies, along with a shift away from forecast-dependent supply chains. (Christopher et al., 2004) Characteristics such as reduction of lead times, utilization of market knowledge and integrated supply chains are seen as vital characteristics of the agile paradigm (Ben Naylor et al., 1999).

A model originally developed by Harrison, Christopher & Van Hoek (1999) was modified by Christopher et al. (2004) which stated that the four foundational characteristics of agile supply chains are being sensitive to markets, virtual, network-based and process aligned. Each of the four covers several sub-items, as shown in Figure 6. With the measures of market sensitivity companies can firstly detect potential needs for new products in the market, and secondly monitor the market's demand and response for these products (Masson et al., 2007). In a network-based supply chain it is ideal to leverage the individual suppliers' core competencies (Masson et al., 2007), in other words understanding what should be kept in own production and what to leave to individual suppliers.

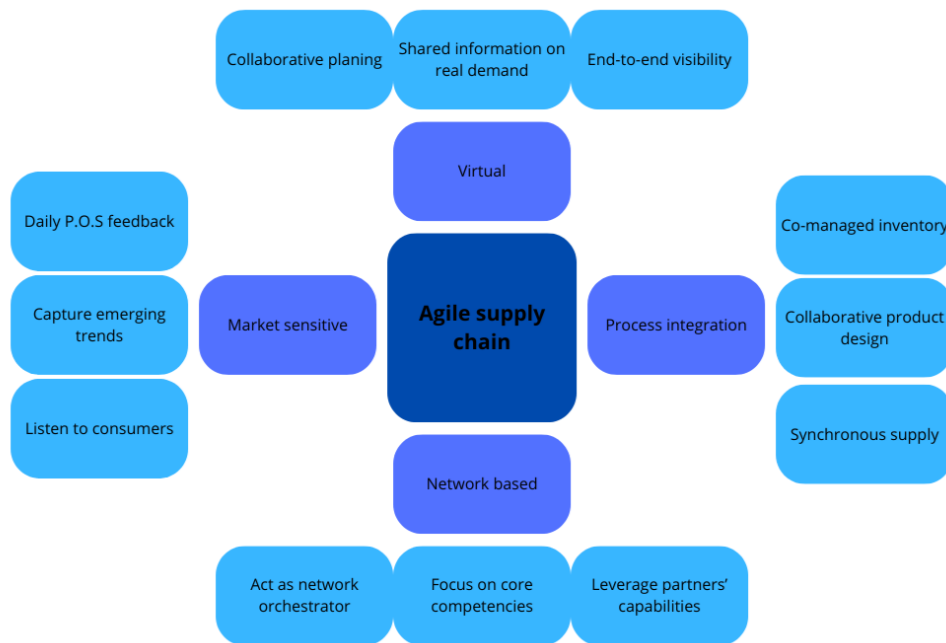


Figure 6: The four foundational characteristics of agile supply chains (Harrison et al. 1999; Christopher et al. 2004)

While the framework is evidently relevant to supply chains in the fashion industry, it can pose conflicts, at least for global supply chains (Masson et al., 2007), which is often the case in supply chains of the fashion industry (Nenni et al., 2013). Supporting previous conclusions regarding demand forecasting in the fashion industry, it can be concluded that an agile supply chain is suitable for the fashion industry, since it ignores the need for forecasting as a cornerstone of the supply chain. An agile organization integrated within an agile supply chain executes better than a forecast-driven supply chain or a traditional organizational network, which often face difficulties when attempting to meet the key challenges facing the fashion industry (Nenni et al., 2013).

3.3.2 Lean manufacturing

Leanness can be defined as assuring a level schedule by a value stream which excludes all kinds of waste. All non-value-adding activities are referred to as waste. In an ideal lean supply chain, there would be no inventory and no slack. This is, however, almost impossible in practice. (Ben Naylor et al. 1999) Pettersen (2009) investigated the literature regarding lean manufacturing and came to the conclusion that no single definition for lean manufacturing is agreed on. Bhamu & Sangwan (2014) added to this by stating that in addition to the lack of consensus on a definition, there also appears to be a lack of consensus regarding the essential qualities to be linked with

lean manufacturing. However, setup time reduction and continuous improvement are seen to be important characteristics of lean. Other features that are often mentioned in the literature include production levelling and failure prevention. Just-in-time is occasionally seen as a part of lean production. (Bhamu & Singh Sangwan, 2014) Reduction of lead times is regarded as an important characteristic of lean, paralleling its importance to the agile paradigm (Ben Naylor et al., 1999).

Lean manufacturing aims to reduce waste, and thereby be profoundly responsive to customer demand. The concept of lean has first been mainly implied to the automotive industry and later on taken up by other industries, as well as different types of manufacturing systems. It provides a competitive edge for the manufacturers due to the ability of reducing costs while simultaneously enhancing quality and productivity. The concept has seen to have both quantitative and qualitative benefits. (Bhamu & Singh Sangwan, 2014)

3.3.3 Quick response

Quick Response or QR is a strategy firstly created for inventory management (Choi & Sethi, 2010) in which suppliers and retailers collaborate to rapidly address consumer demand (Nenni et al., 2013). QR is based on the party's exchanging information to reduce inventory and eliminate waste (Nenni et al., 2013). QR aims to reduce lead times and therefore being able to respond quickly to shifts in the market. It was first adopted by apparel supply chains, nowadays by various sectors. The basic idea of the concept is that the retailer sends point of sales data to the supplier. The data is then utilized by the supplier in order to augment the demand forecast and programming of production and distribution. (Choi & Sethi, 2010) It is seen to include a concept from just-in-time, in which the orders are pulled through the supply chain by customers (Nenni et al., 2013). Christopher et al. (2004) see QR as a way of improving agility in fashion supply chains.

The strategy can oppose the negative effects caused by uncertainty. In an ideal situation, QR would allow the production of different products, colours, and sizes on the basis of sales during the period. The responsiveness created by the strategy could then be used to replace forecasting and/or inventory requirement that would otherwise be critical for handling the operations in the prevailing uncertainty. (Nenni et al., 2013)

3.3.4 Just-in-time

Just-in-time or JIT is seen by some as a holistic philosophy, while other argue it is merely a collection of individual practises (Mackelprang & Nair, 2010). While the exact definition of JIT is seen as complicated, it is generally referred to as "a manufacturing system for achieving excellence through continuous improvement and elimination of waste" (Fullerton & McWatters,

2001). According to Fullerton & McWatters (2001) the implementations of JIT include continuous improvement, waste reduction and quality practises. Vokurka & Lummus (2000) have included improving quality control and vendor performance, reducing lead times, and total preventative maintenance in addition to the prior mentioned. The elimination of waste is done at all levels of the operation. JIT can be used as a way of settling trade-offs between cycle times, quality, and cost efficiency, and it would ideally operate on a pull system, where the product components would be drawn to the final steps triggered by customer orders. (Vokurka & Lummus, 2000) It focuses on long-term improvement, and if implemented successfully can lead to benefits such as short setup times. It is seen to improve competitiveness, through improved customer responsiveness, reduced costs, and lower inventories. (Fullerton & McWatters, 2001)

JIT has been both praised and criticised. While some studies fail to establish a link between JIT and performance improvement, others identify enhancements as response to JIT. The greatest benefits have been seen in those companies that have been able to commit to it in a holistic way, as proposed by Vokurka & Lummus (2000). JIT has not been widely and directly linked to the fashion sector, but mainly to other industries, such as electronic and automotive firms. (Vokurka & Lummus, 2000) One reason for resistance is the resistance to change, which can be caused by several factors within the organisation. However, there are also references in the literature to the fact that JIT is not beneficial to all kinds of companies. (Fullerton & McWatters, 2001)

3.3.5 Linking the approaches to fashion industry in the era of social media

All of the mentioned principles; agile supply chains, lean manufacturing, quick response and just-in-time can help fashion supply chains to respond to fashion industry's complex demand. While each of the four are their own, specifically identified strategies and paradigms, each of which have faced research and evolved over time, they all are trying to improve the same aspect, responsiveness. Each can be seen to have their own focus on a particular aspect. Those are flexibility for agility, productivity for lean, inventory management for quick response and timely production for just-in-time. They however share a lot of the same aspects, even overlapping at times. For example, JIT is often seen to be a part of lean production and quick response (Bhamu & Singh Sangwan, 2014; Nenni et al., 2013). Quick response on the other hand can be seen as a strategy for creating an agile supply chain (Christopher et al., 2004). In addition to these overlaps, there are many individual similarities between the four, as shown in Table 2. The table lists commonly mentioned features of the four approaches mentioned, most of which can be found in more than one of these approaches.

Table 2: Similarities of agile, lean, QR & JIT

	Agile supply chain	Lean production	Quick Response	Just-In-Time
Continuous improvement		x		x
Elimination of waste		x	x	x
Level schedule		x		
Market sensitivity	x		x	
Network-based	x		x	
Process integration	x			
Reduction of costs		x		x
Reduction of inventory		x	x	x
Reduction of lead times	x	x	x	x
Reduction of setup times		x		x
Virtuality	x			

From the table we can see that lead time reduction is a key part of each of the approaches. This aspect is becoming increasingly important in the sector, as globalization of the industry has led to longer lead-times (Nenni et al., 2013). Simultaneously consumers are increasingly demanding shorter lead times (Čiarnienė & Vienažindienė, 2014b). Short lead times are seen as a contributing factor in the success of Zara and H&M, which have managed to consolidate their position in the complicated industry of fashion (Nenni et al., 2013).

According to Christopher et al. (2004) three lead times must be taken into account in order to make success possible in the fashion industry; time-to-market, time-to-serve and time-to-react. Time-to-market involves noticing trends and responding to them as quickly as possible and is key in such short life-cycle markets, as fashion. If a company fails to do so, the disadvantages appear in two ways, loss of sales from the missed opportunity, and the likely situation of mark-downs needed when the product has finally arrived, but the demand is already in decline. Time-to-react has to do with reacting to accurate demand. Usually, the upstream of the supply chains has poor vision of the actual customer demand of the marketplace since the chain includes independent policies for example inventory levels and re-ordering. Time-to-serve is the lead time concerning the order to delivery cycle, which is usually much longer than the time it takes to produce the product itself, which has to do with things such as accompanying documentation, transportation times and production methods. (Christopher et al., 2004)

Characteristics that were mentioned in three approaches were elimination of waste and reduction of inventory. However, it should be noted that each of the approached has faced a lot of research and evolved with the research of the field. There are also a number of features linked

to these approaches that are not found in the table. The table has been compiled of features found in the sources of this thesis that appear in several of these approaches. In addition, the table includes a few individual features that are found in only one of the approaches to help to illustrate the differences between the four. Collected from different sources, the table could look different. The purpose of the table is to create an overall picture of their similarities and differences, using the sources of this thesis.

One feature that distinguishes agile supply chains and quick response from the other two concepts is market sensitivity. Market sensitivity can help fashion companies capture emerging trends and identify changes in customers' behaviour (Christopher et al., 2004). Zara has succeeded in this by having dedicated staff to scour the market for new ideas and trends (Christopher et al., 2004). Market sensitive companies are able to identify needs for new products and react to market's demand by tracking it (Masson et al., 2007). As the effects of social media are still partly unclear, and are driven by a wide range of factors making it difficult to predict their impact, it can be suspected that market sensitivity would be a key factor for fashion supply chains trying to improve their responsiveness to respond to the changes in consumer behaviour brought about by the social media.

These approaches, when implemented successfully, allow for a number of improvements that enhance responsiveness. Depending on the company, the best option may vary, or be a combination of two or more approaches. Managers must see the importance of implementing integrated concepts of supply chain management rather than operating on individual programs (Vokurka & Lummus, 2000). It is therefore important that a company understands the nature of demand and the needs to satisfy it, and starts to improve responsiveness on that basis, avoiding adherence to the definition of a particular paradigm.

4 Conclusions

Social media has evolved from simple applications used to share images and texts, to widely commercialized and complex platforms, creating new phenomenon such as cancelling and social media influencers. It affects both, consumers, and companies of fashion industry. It affects consuming through advertising and networks, through which fashion is known to spread (Easley & Kleinberg, 2010). Fashion is used to form our identities, which are constructed in relation to others (Čiarnienė & Vienažindienė, 2014b; McNeill & Venter, 2019). Social media gives individuals a platform in which it is possible to continuously compare oneself to others, at the same time exposing themselves to trends, which in themselves are very central to fashion consumption. The fashion sector already requires responsiveness because of its characteristics, which highlight the importance of speed and make it difficult to predict (Christopher et al., 2004; Čiarnienė & Vienažindienė, 2014b; Shi et al., 2021). The demand of the industry is complex and influenced by several factors both outside and inside the company's sphere of influence. The characteristics which make the industry volatile and unpredictable are highlighted because of social media and its platforms. The social aspect of fashion is complex, and social media makes the modelling of these effects even more difficult. It makes trends and advertising accessible to all, leaving the reactions to these stimuli up to each individual.

While social media makes customer requirements continuously more diverse and complex, the supply chains must modify themselves to meet these requirements while acknowledging the surrounding market. The nature of the industry, with its globality, variety, and transition towards more segmented fashion, make the supply chains of the industry highly complex. Companies of the industry need to devote their attention towards supply chains and their management, because of two reasons. Firstly, the complexity of them and secondly, the fact that the ability to meet the intricate demand is crucial for sustaining competitiveness in the fashion industry. It is a determining factor of the industry's overall success.

The success of fashion can be therefore seen widely dependent on the success of the supply chain. Especially since the competition between companies has shifted to being between the supply chains themselves (Vonderembse et al., 2006). Timely delivery is key for the success of the industry, and many characteristics such as short cycle times, impulse buying and being trend-driven underline why time is of the essence in the industry. These characteristics are in controversy with the often-long lead times of the industry (Nenni et al., 2013). Anticipating demand with the help of forecasting is not feasible because of the nature of fashion industry (Christopher et al., 2004; Nenni et al., 2013). Since forecasting is extremely hard, and even seen as impossible by some, the ability to respond to these time-sensitive characteristics falls upon the supply chain.

This thesis explored the impact of social media on consumer behaviour in fashion, and how they emphasize the need for responsiveness within the industry. It also explores how responsiveness can be improved in these supply chains. It takes a hypothetical situation where a company would ideally respond to all demand that arises in the market. However, it does not consider the aspect of sustainability, which is a very central issue today for both, companies, and consumers in the industry. In addition to the fact that satisfying all demand is often not possible, responsibility should be taken into account when dealing with such decisions. This literature review takes a process and supply chain perspective to the issue of social media affecting consumption of fashion. Adding the sustainability perspective would require more research to explore the interlinkages between social media and consumption behaviour, sustainability and social media as well as sustainability and supply chains together in a holistic way.

The aim of the thesis was to discover the relationship between social media and supply chains of the fashion industry, using consumption behaviour as a pathway. The first research question addressed how social media highlights the need for responsiveness in fashion supply chains. Since fashion products are innovative, they call for rapid reaction (Fisher, 1997), which can be achieved with responsiveness (Christopher et al., 2004; Holweg, 2005; Nenni et al., 2013; Singh, 2015). Responsiveness allows organizations to rapidly identify shifts in the market, reconfigure their operations and processes according to these new conditions (Singh, 2015), which can be seen extremely important to this industry. If the supply chain fails to function responsively, the volatile and unpredictable demand most likely cannot be met.

The literature review reveals that the way social media emphasises the need for responsiveness stems from its ability to influence people's consuming behaviour. Social media is reinforcing certain key features of the fashion industry. These features make the industry one in need of rapid responses, and this need is growing as social media highlights the features. Social media affects consuming behaviour in multiple ways, that can be linked to fashion industry characteristics that call for responsiveness. Characteristics of the industry that social media is seen to highlight include complexity of consuming, impulse buying, novelty of products, being trend-driven and fashion spreading through networks.

Social media enables communication and constant interaction with other individuals and groups, which are linked to the fact that fashion consumption is not just about satisfying basic needs but is driven by a much wider set of factors, making it difficult to model. Social media also enables fast communication and information flow, which is linked to the fact that product novelty fades quickly on social media (Ekström, 2010). Another time-related factor is that fashion is spreading faster than ever before, thanks to social media and internet-enabled networks (Ekström, 2010). In addition to these time-related factors, social media has the potential to influence impulse buying (Djafarova & Bowes, 2021; Shamim et al., 2024), which

is a key part of the industry's consumption. Consumption of fashion is dominated by trends, and social media can create them with the help of its networks. In addition, social media has highlighted consumer awareness and sensitivity to trends (Chetioui et al., 2020; Jin et al., 2021). These mentioned interfaces are illustrated in Figure 7.



Figure 7: Social media highlighting the need for responsibility in fashion

The second research question addressed how fashion supply chains should improve their responsiveness in order to respond to the growing need of it. According to literature, four strategies and methodologies were found, by which fashion supply chains can improve their responsiveness: agile supply chain, lean manufacturing, just-in-time and quick response. All four have their focus on slightly different areas, but all aim at the same thing - responsiveness. In some of the literature, agile and lean are seen as larger paradigms than JIT and QR, since JIT is occasionally seen as a part of lean production (Bhamu & Singh Sangwan, 2014), and QR can be seen as a way of improving agility in fashion supply chains (Christopher et al., 2004).

All four aim to reduce lead times, which is key for the fashion industry, especially with today's fast-moving customer preferences and global supply chains. Other characteristics that

were found in at least two of the mentioned are market sensitivity, being network-based, elimination of waste, continuous improvement, reduction of inventory, reduction of setup times and reduction of costs. It can be concluded that all of the four bring their own perspectives and methods, while aiming for the same goal. It is very important to understand both, the market around the company, as well as the demand it is facing and the reasons behind it. This understanding should be the basis for improving responsiveness and choosing the methods for it. Responsiveness should be a foundational paradigm, rather than just a single indicator of operations.

One feature that distinguishes lean from the other three is maintaining a level schedule. While lean has many other characteristics that suit the industry, steady production is not one of them. If the customer demand is uncontrollable by the supply chain, lean manufacturing is unfeasible (Ben Naylor et al., 1999), which is seen in industry characteristics such as volatility in demand and the industry being highly trend driven. The changing demand can't be met if the supply chain is already loaded with the previous schedule, made according to the previous demand (Fisher et al., 1994). However, this doesn't mean that lean production approach is not at all appropriate for the fashion industry. It has qualities that support the time-sensitive qualities of the industry, such as reduction of inventory, lead times and setup times.

Besides the steady production of lean production, the four strategies do not seem to exhibit characteristics that are intrinsically harmful to supply chains of the fashion sector. They have features that are improving the supply chain in general, or specifically in the context of the fashion industry. Things like continuous improvement and reduction of costs are not directly linked to the fashion industry but are generally accepted features of the supply chain. Issues such as market sensitivity and reduction of lead times are essential for the fashion supply chain to remain competitive. It is important to understand the evolution and weaknesses of the company in question together with the requirements of the surrounding market, aiming for responsiveness as a baseline concept, rather than just adding a specific strategy to its operations.

Although the applicability of these practices in the context of the fashion industry in the era of social media has not yet been explored, it can be examined in the light of the mentioned characteristics. Market sensitivity is mentioned in both agile and qr. Since the phenomenon of social media is still partly unclear (Carr & Hayes, 2015), market sensitivity can be seen as a particularly important feature. This is due to its ability to detect emerging trends and market changes, which social media can be seen to create (Christopher et al., 2004; Masson et al., 2007).

Overall, this thesis is providing preliminary examination of a subject that should be further investigated. Fashion is a large industry with major impacts on multiple areas. The impact of social media on different industry characteristics could be studied separately, allowing a deeper look into the complex equation of social media, consumption behaviour and supply

chains' response to these. Overall, this subject is an intricate combination of several subjects, since it is a complex combination of intersections of different subjects such as sociology, psychology, consuming behaviour, communication, marketing, and supply chains. In addition, future research could be beneficial to explore differences in changes in consuming behaviour across generations. It could provide valuable insights to companies that clearly target a specific age group, generation Z in particular, who use social media as a tool to consume fashion (Djafarova & Bowes, 2021).

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