



This contribution discusses truly shared warehousing in relation to the existing business models of warehouse-providers and shows the causes of reluctance between parties to collaborate.

# Roadmap to truly shared warehousing

## challenges and benefits

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### ABSTRACT

Truly shared warehousing implies converting inactive, idle, and excess capacity of existing assets, warehousing space, into active revenue and profit by offering them to other parties. Although, truly shared warehousing is believed to be an innovative approach to tackle existing warehousing inefficiencies, it is not common practice yet. This contribution discusses truly shared warehousing in relation to the existing business models of warehouse-providers and shows the causes of reluctance between parties to collaborate. Next, we examine the risks, challenges, conditions, and motivations for warehouse-space providers or facilitators and their customers to further use the concept of collaboration in relation to truly shared warehousing in particular.

The results show that not all conditions and motivations are in place to really work together for logistics providers and platform providers.

## Introduction /reasons

Warehousing has always been an important enabler of globalized production networks. A warehouse is the interface area for production lines, market, customers, suppliers, and the business environment in general (Christopher, 2006; Hiloma & Lorentz, 2010).

Traditionally, warehouses are owned by one logistics service provider who has the knowledge/skill set of warehousing and inventory management. From the total available assets of the warehouse, fixed amount of space, equipment, and personnel are allocated on a contractual basis to (a) client(s), often without considering actual utilization of the space during the contracted period (Gesing, 2017). However, more and more companies recognize that the opportunities derived from the on-demand economy are becoming too big to miss. Like all major disruptions, the on-demand economy is challenging industry incumbents with new business models and new ways of engaging customers (Colby & Bell, 2016). 70% of the warehouses with excess capacity do not have a solution when they have more space than inventory and they just accept it as a cost of running a business. While the warehouse capacity is fixed, inventory varies. Excess inventory could potentially convert the cost of one party into the revenue (Flexe, n.d.).

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Converting inactive, idle, and excess capacity of existing assets into active revenue and profit by offering them to other parties is called truly shared warehousing in this article (Been, de Lange, & Brouwers, n.d.). In truly shared warehousing clients are given a temporary use - as opposed to ownership - enabling pay-per-use billing of space in the multi-customer warehouse. To find partners various methods are being used by different parties in a supply chain (Gesing, 2017). It can be as simple as a phone call or as advanced as a digital platform. In the Netherlands, platform facilitators provide solutions for warehouse capacity issues by finding and connecting all parties in European warehousing through one single, secure cloud-based platform from shippers to owner of goods, importers, exporters, warehouse companies, bulk storage locations and port terminals yards or container depot (Been, de Lange, & Brouwers, n.d.).

By promoting the concept of truly shared warehousing and engaging the parties via a digital platform, not only 3PLs could increase productivity and cut costs in the multi-customer warehouse environment but also their clients can benefit from it by being closer to their market and meet their customer demands quicker (Gesing, 2017).

Although the advantages of applying truly shared warehousing concepts via digital platform providers seem straightforward, i.e., increased efficiency, reduced costs, increased revenues, reduced congestion, and profitable business models, it is still unsure why there is lack of collaboration between parties exist.

In order to find out the reasons for the reluctance/lack of collaboration, the following research questions have been formed (as a part of the Sharing logistics project, see <https://www.rdmcoe.nl/projecten/sharinglogistics/>):

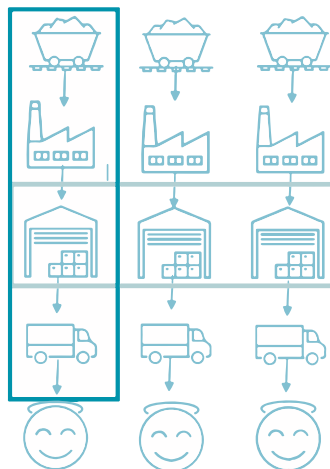
1. What are the existing business models; comparison between platform providers vs. market leader 3PL provider?
2. What is causing the reluctance between parties to create such a collaboration?<sup>1</sup>

To find the answer to the above-mentioned questions, we have conducted interviews with experts and a workshop with a relevant industry party.

### Current trends of sharing

The most used type of sharing within the warehousing sector is traditional sharing. Also called a multi-client warehouse. This type of warehouse has one business owner and within the warehouse there is a fixed amount of space, time, equipment, and personnel available which is allocated to different customers on a contractual basis, often without considering actual utilisation of the space during the contracted period (Gesing, 2017). As example company A will be used. This company consist of one warehouse where goods for different customers, namely customer B, C and D are stored. Within this warehouse it is possible to share space, equipment and for example personnel between the different storage areas of each customer.

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**Figure 1** Horizontal and vertical collaboration in the supply chain

<sup>1</sup> Note that expected or even the experienced barriers can result in reluctance, but maybe other reasons can be.

Following the distinction in collaboration, we use two types of sharing as vertical and horizontal. Vertical sharing focuses mainly on coordinating the flow of materials and information throughout the whole supply chain, from top to bottom, by using joint decision making and managing relations between partners to achieve success (Christopher, 2000). As shown in figure 1, the blue part of the figure represents vertical sharing where different companies, within different layers of the supply chain, work together.

In horizontal sharing the focus lies on active collaboration between two or more businesses that operate at the same level of the supply chain as shown in the yellow part of figure 1. When sharing horizontally, the businesses perform, mostly, comparable logistic services (Crujsssen, Dullaert, & Fleuren, 2007).

Truly shared warehousing is a form of sharing that is relatively new. The concept of truly share warehousing is about allocating warehouse capacity assets, such as space, systems, personnel, equipment via a network to enabling pay-per-use billing of this space in multi customer warehouses (Gesing, 2017). As an example: there are two “warehouse service providers” named A and B. Company A is facing empty pallet locations in their racking due to various reasons for the next 28 days which is a cost. On the other hand, company B is looking for extra space for the similar period of time to temporarily store their stock to meet their customer demand. Cost from company A could convert into revenue by offering it to company B and company B could meet their customer demand by using the space from Company A.

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### Successful co-warehousing platform facilitators in warehousing arena:

To find the available and suitable capacity, there are co- warehousing platform aim to link companies together to find and book warehouse capacity and fulfilment services. Below is the list of current global major players in the co-warehousing platform facilitators arena in today's market:

- FLEXE, that offers co-warehousing solutions for e-commerce fulfilment, retail distribution and inventory overflow. The Seattle-based company boasts the largest on-demand network of space, with more than 1,000 warehouses in their inventory throughout the U.S.
- Flowspace is another co-warehousing company with a model similar to FLEXE, providing on-demand warehousing to a variety of users. Flowspace has a footprint of hundreds of warehouses in every major metro area in the U.S. and offers pricing on a month-to-month basis without space minimums.
- Stockspots is European co-warehousing solution provider for warehouse capacity and

fulfilment services to convert idle space and make a profit out of unused warehouse space. They connect all parties in European warehousing through one single, secure cloud-based platform from shippers to owner of goods, importers, exporters, warehouse companies, bulk storage locations and port terminals yards or container depots.

- Compose: Compose is an online platform provider, which helps supply chain managers and shippers to find the right partner to collaborate/share the available space in their warehouses.

Looking at the existing trend in practice and in literature, we have seen there are implications of shared warehousing in different ways. However, it is still unsure why there is lack of collaboration between parties. Therefore, this article is particularly focussing on finding the reasons for the lack of collaborations and the reluctancy of parties to connect with each other to utilize their capacity.

## Research set up

A literature study has been performed regarding the sharing economy within the logistics sector. Most of the sharing-research focusses on the transportation and delivery aspect instead of the warehousing part (Zhang & Xia, 2019), resulting in the fact that the warehousing sector is less discovered.

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Within the last years, more literature became available regarding the topic shared warehousing (Benjaafar & Hu, 2019). But even though more literature is becoming available and platforms providers are ready to support the concept, still not that many companies are attracted to the phenomenon of truly shared warehousing. So, the questions arise, why companies are not starting with truly shared warehousing and connecting with the platform providers. This contribution aims to answer the following questions with the aim to discover the reasons for lack of collaborations.

1. What are the existing business models; comparison between platform providers vs. big 3PL provider?
2. What is causing the reluctancy between parties to create collaboration in a truly shared warehousing?

Within this research different methods have been deployed. Firstly, a literature study has been performed regarding the sharing economy concept. The exiting knowledge made it possible to build on this concept (Sekaran & Bougie, 2017). Also, a literature study has been performed regarding the Business Model Canvas. This method/tool has helped to understand the existing models for parties within the supply chain who has participated in our research.

Secondly, interviews have been conducted with experts in the field of warehousing to get a better understanding of the barriers and enablers of the shared warehousing concept. Besides, the interviews provided insight in why companies might be willing to start with shared warehousing and what could be possible factors which influence their decision of not starting with shared warehousing (via platform providers). Eventually, the interviews were coded and analysed resulting in key factors which serve as input for the workshop.

Thirdly, a workshop has been conducted with subject matter experts and decision makers within the warehousing industry from different companies. A workshop was hereby a good method which helped inspiring participants, to brainstorm and to introduce or create a new idea but also a debate between parties to dive deep into the potential reluctancies which causes lack of collaboration. Participants with different interests; big players in warehousing industry and on-demand platform providers. During the workshop, existing BMCs were explored and compared. The reluctance towards collaboration in what is called in this contribution 'Truly shared warehousing', as was observed in practice, as well as found in literature was discussed with industry partners in workshops (in the form of a debate between parties who could look from different angles to the collaboration), where reluctance was operationalized by together identifying the expected or experienced challenges, opportunities (or the lack of), risks and potential s success factors.

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For answering the research questions, the approach as depicted in Figure 2 was used. In the first step the collaboration concepts and the objectives to collaborate were identified. Next, the Truly shared warehousing value proposition for different customers were identified via a business model canvas in step 2. Based on these steps the first research question is answered. Next, these results were presented (via interviews and workshops) to industry stakeholders, and together in step 4 challenges and risks as well as conditions and motivations were discussed (based on discussing what would or what would need to change in the BMC in order to use the Truly shared warehousing concept (as such, the second research question was answered). In the fifth step then mainly conclusions were derived, and directions for further research.

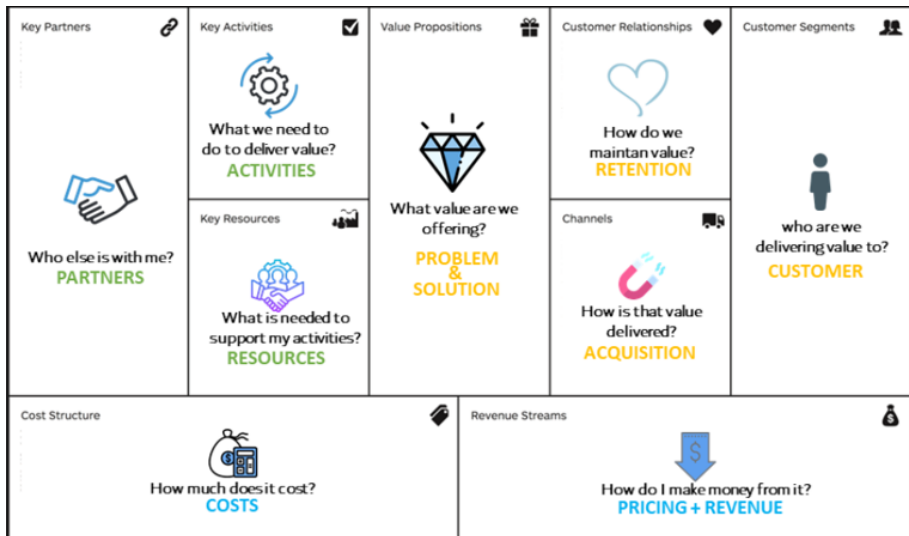


**Figure 2** Research approach

## “As Is” Business Model Canvas

### The business model canvas

The essence of sharing economy in warehousing could potentially convert inactive, idle, and excess capacity of existing assets into active revenue and profit by offering them to other parties. To enable such a conversion specially from a traditional multiclient warehouse to truly shared warehouse, organizational Business Models should be looked at. Every organisation has its own business plan/ model. These plans are a roadmap that enables organizations to achieve excellency (Haag, 2013). Business plans come in different forms and sizes. In this article, Business Model Canvas (BMC) has been deployed as a strategic management tool and a common language for visualizing the existing models. The structure of this model forces people to think about vital aspects of decision making within their organization. The BMC can be divided in nine different elements as shown in figure 3 (Frick & Murshid, 2013).



**Figure 3** Business Model Canvas Template

To answer the first research question, we applied the BMC to three existing companies in order to learn what the value proposition could be for Truly shared warehousing for different customer segments. The three case companies are:

- Syncreon is a logistics service provider which offers their services worldwide. They operate from over 100 locations worldwide with over 16,000 employees (The Company syncreon, 2020). Syncreon mainly focusses on the global technology industry and



the automotive industry. Within the Netherlands they dispose a site in Waalwijk (2 sites), Tilburg, Venray, the Maasvlakte and Schiphol offering different services to their customers such as warehouse services, value added service and transportation management with the aim to offer customers a supply chain and solutions that fit their needs. Diversity in syncreon warehouses (solo client vs. multiclient), clients, and offered services has made the company a very interesting party to this article. Syncreon deploys the concept of shared warehousing not by only renting extra available space to other parties when there are seasonal fluctuations utilizes their space but also, sharing equipment, personnel, and space in their multiclient warehouses when possible. Syncreon partners with their customers to provide specialized logistics, operational excellence, and value-added solutions in warehouse management, inbound to manufacturing, export packing, fulfilment, aftermarket, reverse and repair, and transport management (Syncreon, 2021). Their customers in automotive and technology are big players/OEM of the markets such as: BMW, Canon, Dell, Ford Motor Company, IBM, Volkswagen Group, et cetera. Their warehouses are consisting of solo client to multiclient with long terms contracts. Due to strong partnership, clients have full visibilities of syncreon warehouses to the extent that syncreon offers local offices to the clients at each site (van der Eijk, 2021).

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- Compose is an online platform which helps supply chain managers to find the right partner to collaborate with when it comes to collaborating strategically for sharing warehouse space, transportations means and personnel (Veenstra, van der Kuijl, Aarts, & Schriek, n.d.). Compose aims to organize the supply chain in a more efficient way and increase customer value. This, by offering managers of participating companies the opportunity to start and establish long-term horizontal collaborations within their supply chains. Within the process, both hard factors (like logistic network) and soft factors (like matching company cultures and personalities) are taken into account. The compose platform is an initiative of evofenedex and Tilburg University and is created for shippers within the Netherlands.
- Stockspots is a cloud-based two- sided marketplace with a high-level search engine (Been, de Lange, & Brouwers, n.d.). This application operates as an on-demand digitalized sales network for warehouses. Stockspots, is the specialists in on-demand warehousing and innovators of the new warehousing world by facilitating Warehousing Network, they make it easier to solve warehousing issues and fight warehouse waste for a flexible and sustainable warehousing future. They quickly connect customers, in need of warehousing and fulfilment services, with warehouse providers offering available capacity. They believe in no more warehouse waste as the future of warehousing does not consist of possessing a warehouse but of sharing unused warehouse space and associated fulfilment services.

The existing business models for the three case companies are summarized in the following tables. The BMCs show what the case companies do, what customer segment these companies are targeting and what their current value proposition is

**Table 1** Left side of BMC ‘Visibility ‘Can we do it?’

Companies	Key partners	Key activities	Key resources
<b>Syncreon</b>	Customers in the automotive and technology sector and freight forwarders.	Warehouse management, inbound, outbound, transport management, fulfilment, VAS, and reverse logistics.	Buildings, equipment, WMS, and human resources.
<b>Compose</b>	Users of the platform: Shippers, transporters Developers of the platform: evofenedex, Tilburg University, NWO, TKI Dinalog and Topsector Logistiek.	Facilitating and offering shippers and transporters horizontal collaboration options regarding transportation, warehouse space and personnel.	The Compose platform combined with evofenedex’ network of supply chain managers.
<b>Stockspots</b>	Companies who offer empty warehouse space and companies who are looking for additional space.	Online platform which brings warehouse companies and shippers together to utilize their unused warehouse space by offering end to end solution from match making to invoicing.	Online platform, High-level Search Engine, Warehouse Management System (WMS).

**Table 2** Right side of BMC ‘Desirability ‘Does the customer want it?’

Companies	Value propositions	Customer relationship	Customer segments	Channels
<b>Syncreon</b>	Optimizing the customers’ supply chain by providing tailored, scalable, and progressive solutions which will reduce costs and improve performance.	Good and long-term relationships, long-term contracts.	Automotive and the technology sector.	Targeted media campaigns (LinkedIn and Mailchimp), word to mouth, national and regional development agencies, trade shows.
<b>Compose</b>	Having available a unique platform for shippers and transporters which not only looks at the hard but also the soft factors during the matching procedure.	Good relationships are valuable. That is why great value is attached to confidentiality.	Shippers and transporters in the Netherlands to share their unused warehouse space, transportation means and personnel with other parties.	evofenedex website, email, and website of supply chain collaboration.

<b>Stockspots</b>	Online platform for 'on demand' warehousing in Europe which makes the whole logistics chain digitally visible flexible, sustainable and on-demand for any kind of warehouse operation; inventory overflow, eCommerce fulfilment, Retail distribution, Value Added Logistics.	Partners who own a licence get the opportunity to integrate the application to their website and an administration performance board.	Customers: E-tailers, Manufacturers, Wholesalers, Retailers and Freight Forwarders who wants to deliver their goods in Europe. Warehouse providers: Logistic service providers who operate in warehousing and Wholesalers or Producers with warehousing as additional business.	Commercializing the platform and services throughout a network of trustworthy license holders, promote the platform on websites and visit conferences.
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**Table 3** Bottom of BMC: the costs and benefits: Viability “Can we earn more money that we spend”?

<b>Companies</b>	<b>Cost structure</b>	<b>Revenue structure</b>
<b>Syncreon</b>	Fixed cost: buildings, assets, equipment, and employees. Variable cost: maintenance, paying carriers and employees of the employment agency.	Payments of customers for their used services will provide revenue streams.
<b>Compose</b>	Fixed costs such as labour costs and the costs for the online matching platform.	Compose is a project. Currently costs for this project are absorbed by provided investigation budget. Revenue stream exists of membership fees.
<b>Stockspots</b>	Variable costs: Assets, employees, marketing, outsourcing and digitalisations.	Revenue is provided by customers who pay for services, transaction fees and licence holders.

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The use of business model helped to examine whether the major players in the market have similar values as they are all attracted to the concept of truly shared warehousing. Tables 1-3 show illustrate that the three cases are different and target different customer groups, and different value propositions (see Table 2), but all three cases have elements of Truly shared warehousing in their proposition. These differences make it interesting dive deeper to find the answer to the second research question of: What is causing the reluctancy between parties to create such a collaboration?

## Risks and challenges: discussion/debate in a form of workshop

Syncreon a global logistics service provider with 7 warehouses in the Netherlands, Stockspots a Dutch market leader in on- demand warehousing and an extended market in EU and Compose a Dutch co-warehousing platform facilitator focusing on shippers were brought together in a form of workshop to brainstorm to find out what are the causes of reluctancies in terms of collaboration between parties and whether or not more collaboration could be created between the parties by creating similar values and objective on the concept of truly shared warehousing.

The literature review showed that before being able to share, it is important to determine the risks and challenges (Robbertz, 2017). According to previous research, interviews with experts and surveys; risks and challenges could vary from data/information sharing, mutual trust in each other, competing market segments/ businesses, responsibility, insurance, unfamiliarity, visibility of the own assets to regulations, and storage requirements. These potential risks and challenges were introduced to the participants of the workshop for the discussion.

### **Recognized risks and challenges for syncreon (market leader “automotive - technology” in Logistics service provider).**

What does truly shared warehousing mean for syncreon?

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- Utilizing space, personnel, equipment temporarily when there is an overflow (peak period).
- Renting space to other parties on a temporary basis (seasonal peak) without being involved in any operational activities.
- Using other parties to store the temporarily overflow (locally) with full visibility and accessibility to the storage.

Syncreon uses the local/own network that might be even one of their competitors.

### **Which risks and challenges does syncreon recognize?**

- Distance: distance of the potential warehouse during overflow/peak seasons should not be too big from our current location. When the distance is too large, it will be hard to transfer goods between both locations and hence, the transport costs will increase. To store locally, we have our own network which are exchanging space (van der Eijk, 2021).
- Costs: cost of renting a potential warehouse during overflows can be higher due to administration via a 3rd party when using a shared business model for warehousing. If and when necessary, space is needed via a 3rd party (platform facilitator) the total costs should obviously be lower than current costs.
- Exchange of data: data exchange is a great risk especially when multiple systems are being used during the usage of a shared business model concept platform when

systems are not well integrated (van der Eijk, 2021). Meantime, only relying on a 3rd party to provide the data of your stock seems losing control which brings fear.

- Regulations and requirements: requirements to store goods are very specific for syncreon customers/partners to ensure all standards including human health and safety are well met. Due to product types, only available space is not the added value. Therefore, other parties who know their business and disciplines are vital. For example, some customers demand a certain type of sprinkler installation or that the storage area is approved by FM Global (van der Eijk, 2021). Some insurance companies have restrictions in which goods can be stored together or stipulate maximum quantities to be stored of certain products. In some countries bonded goods cannot be mixed with non-bonded goods.
- Visibility: this is one of the core values. Lack of visibility causes fear of losing control and being dependent on third party distribution channels. Furthermore, syncreon has built such a unique relationship with their partners where most sites/warehouses have partners office (van der Eijk, 2021). Therefore, not being able to physically monitor their partner stock is a big challenge.
- Legal liability: it plays a major role in syncreon partnership with their client. syncreon is contractually not allowed to store goods at a subcontractor by their customers, or only after their approval. Furthermore, in many cases syncreon still needs to take out additional insurance coverage in case goods are damaged or get lost (van der Eijk, 2021).
- Competing market segments/ businesses: syncreon's partners /clients are very strict on where their goods are being stored (van der Eijk, 2021). Some of the customers do not want to have their goods stored next to a competitor and in the Technology vertical syncreon is also faced with many new product launches which need to be kept extremely confidential.
- Trust between parties: trust is an important element in doing business. syncreon would need to be certain that the platform facilitator is neutral and will handle the data from our customers and us confidentially and in line with EU regulations like GDPR for example.

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### **Recognized risks and challenges Stockspots/Compose (market leader “Co-warehousing platform provider”)**

Both Compose and Stockspots are online platform providers who help supply chain managers/shippers to find the right partner, right space, and at the right price. Stockspots mainly focusses on 'on-demand' warehousing within Europe whereby they facilitate logistics companies with finding unused warehouse space or finding companies which could make use of their unused warehouse space (Been, de Lange, & Brouwers, n.d.). Compose focusses more on the Dutch market to find partners (more of a match maker with limited activities) to their members only. However, Compose focuses not only on warehousing section but also on the shared transportation and personnel (Veenstra, van der Kuijl, Aarts, & Schriek, n.d.). Both facilitators believe they bring a Win-Win situation to companies by using other

warehouses capacity and provide their extra capacity too. Both facilitators believe they bring a Win-Win situation to companies by using other warehouses capacity and provide their extra capacity too.

What does Truly shared warehousing mean for platform facilitators?

Truly shared warehousing for platform providers means acting as a 3rd party between companies collaborate with each other via an online platform. More specifically:

- Finding space, personnel, transportation for companies who are in need on a temporary or ad-hoc basis.
- Providing solution to companies who have access capacity à converting cost into profit.

### **Which risks and challenges do platform facilitators recognize?**

Both Compose and Stockspots work together with many different customers to find the right partner for them when it comes to shared warehousing (Schriek, 2021; Been, 2021). From their point of view, they have a good understanding of what companies see as risks and challenges when it comes to starting with shared warehousing. According to the formulated risks, Stockspots can relate to all of them (Been, 2021). They agree that all these risk and challenges are acknowledged by the parties with which they cooperate.

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The following risk were addressed:

- **Unfamiliarity:** being unfamiliar with the concept of truly shared warehousing among warehouse providers, is the main challenge that platform facilitators are facing. This has to do with the fact that shared warehousing via a platform facilitator, even though is not a new topic, is still not that commonly used in EU. The same can be concluded when it comes to city distribution (Schriek, 2021). This topic is a main discussion point already for approximately 15 years. Unfortunately, now this topic has showed its relevance and people became more aware. The same goes with shared warehousing. It takes some time for people to start with it.
- **Exchange of data:** when looking at the market, companies are not willing to exchange data with other parties. This is one of the risks with which platform facilitators need to deal. To tackle this problem, only necessary data is shared such as the amount, type of products, invoices, and prices. According to Compose the exchange of data between the two parties is confidential (Veenstra, van der Kuijl, Aarts, & Schriek).
- **Mutual trust:** for companies to work together with facilitating parties, there is a need to trust. Because when companies do not trust the facilitator, they will not use their services. Therefore, trust is an important factor when doing business. To accommodate this, both Stockspots and Compose work as a neutral and confidential party when it comes to facilitating.

- **Visibility:** definition of visibility to most retailers or warehouse providers is to have a full control over every step of the transaction within their supply chain. As for example where the stock is, what the current stocks level is, when good(s) are distributed et cetera. Stockspots offers both parties good visibility (digitally) in their own assets which they believe should bring mutual trust as accuracy of data is guaranteed (Been, de Lange, & Brouwers, n.d.).
- **Competitors:** one of the risks/ challenges facilitators are also facing, is that companies which want to start with shared warehousing, do not want that their products are stored near the goods of a competitor. Besides that, other companies, especially pharmaceutical and technological companies do not want other parties to know that their goods are stored in a specific warehouse. In contrary, Stockspots shares the opinion that they do not see those developments within their organization (Been, 2021).
- **Legal contracts:** making a legal contract between parties (platform facilitators and major players (3 or 4 pls) is a great challenge. Facilitators believe time is money and it should not be wasted on complicated legal contracts. This due to the fact that there is lack of knowledge to review such complex contracts. A standard short contract should be sufficient as it serves the purpose of temporary usage of the space. Unused space should be filled in as fast as possible on order to convert the idle capacity to profit. However, big players in the market do not agree with this way of working as they have their logistical contract where many legal aspects should be looked at before storing any box anywhere. Therefore, different types of legal binding are the major challenge (Been, 2021).
- **System integration:** system integration has to do with the technical aspect. Since every customer of the facilitators platform needs to share data to collaborate and wants to have insights in their stock levels, it is important to have good system integration. To achieve this a connected network should be designed. Due to lack of Api driven systems on the facilitators side, it becomes more difficult and time and money consuming to setup a good integration against the right investment (Been, 2021).
- **Supply chain maturity/urgency:** To deploy the concept of converting the idle space to others and store the stock elsewhere via platform facilitators (digitally) requires a certain supply chain maturity and urgency. For the major players, their upstream (clients) are the decision makers on most cases. Those clients should feel the urgency and the need of using this concept in their supply chain. Furthermore, enough margin in the supply chain, would be another valid reason where parties will not like to take a risk (not urgent).
- **Create network and network connection:** It is not difficult to create the network on the digital platform as its free and easy to become a network member. However, connecting this network together is a big challenge as a lot of parties expecting a one-way revenue by only providing space which means facilitators have to find partners for them. In return, most big players are reluctant to use other parties' space to store their stock though.

Eventually the risks are there to overcome and the challenges should be faced. Only then an organisation can make a strategic change. From a positive point of view, overcoming these barriers, will lead to the many benefits which are accompanied by the sharing philosophy. In the next section, parties are worked together to find conditions where they could get benefit from each other's existence regarding the truly shared warehousing concept.

## Conditions and motivations:

### **Conditions and motivations leading to truly shared warehousing.**

In the previous section, it has been discussed that there are risks and challenges for the parties to collaborate more with each other (outside their local network). However, this article was seeking to find the answers to: why to collaborate and 'what to collaborate on or how to collaborate?

Change will only come when a company is motivated and there are benefits. Motivations and benefits vary per company when it comes to truly shared warehousing concept. Some would like to participate because of the economic benefits, while other companies might want to create more flexibility within their organization. Determining these benefits and motivations are important to find out which type of sharing would fit an organization.

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### **Leading Conditions/motivations for syncreon (market leader "automotive - technology" in Logistics service provider).**

The main conditions for syncreon to work with a platform facilitator are (van der Eijk, 2021):

- To build initial trust, Certifications such as ISO 9001 and ISO 27001 are necessary.
- To establish a suitable legal liability, the platform partner, or the subcontractor where the goods are stored should have minimum the same coverage as syncreon takes for their clients/partners but cheaper.
- The main motivations for syncreon to work with a platform facilitator are (van der Eijk, 2021):
- Low cost of acquisition, the platform should serve as an extended salesforce for syncreon.
- The platform will have access to more decision makers and industry verticals than syncreon would ever have.
- Syncreon is mainly focussed on the Automotive and Technology vertical and they have access to the main stakeholders, however when they have some temporary available space in one of their warehouses, they would love to fill it up with products coming from other verticals.



- Ease of doing business. If the platform would be up to date and would show all the available warehouse space in Europe from all participating parties, this tool could replace partly the role of the real estate brokers.
- When there is enough added value provided by that facilitator; the return (via the facilitator) should be bigger than the effort. Adding value is defined as: low effort in making agreements, time spent on negotiation and inspection to begin to collaborate.
- Provide the latest view on available space in the market or territories which are unfamiliar to use or for complicated searches.

This comes down to the following types of collaboration that can be expected when motivations and conditions are met:

- The platform facilitator should act as “Service engine” to find partners for syncreon and provide rather a direct contact without having a party in between and/or an exclusive membership with other known partners (in the same business sector) to use a joint warehouse been coordinated and facilitated via a platform provider.
- Acting as a space provider to other companies via platform facilitators.

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### **Leading Conditions/motivations for Stockspots/Compose (market leader “Co-warehousing platform provider”)**

When it comes to motivations for the facilitators, it is obvious that it’s a business for them to connect companies and earning money from it. Therefore, in this section the focus is given on what facilitators believe that supply chain managers/shippers/warehouse owners should consider as motivation to collaborate.

- To utilized warehouse space which improves the occupancy rate and efficiency within the warehouse.
- To find extra needed warehouse space to store the products, which leads to more flexibility. Besides that, especially e-commerce businesses have the possibility to store goods closer to their end consumers leading to a faster delivery times when an order is placed. Another motivator to start with shared warehousing is that smaller companies could store their goods at various locations around Europe, without building new warehouses.
- The platforms are up to date and easy to use businesses. Stockspots for example shows right away where warehouse space is available and compose also looks at possibilities regarding sharing transportation modalities (Been, de Lange, & Brouwers, n.d.).
- Both facilitators have their own privacy policy which eliminates the risk when it comes to sharing information or data, resulting in more transparency.
- Working together with a facilitator also results in better integration of the systems, this since both facilitators have lots of experience within the IT sector. This results in fast scalability.

- Not only do facilitators help with the matching process, but they also help with the contracting, stock-control, and invoicing process (Been, de Lange, & Brouwers, n.d.).

Next, the following arguments are used by Compose and Stockspots on how to find good collaboration partners for the parties who use the facilitators services.

- The facilitator will help by finding the right partners based on the companies wishes. The matching tool of Compose even selects the best possible partners based on a survey the company filled in. Based on the given answers, Compose tries to find the best possible match.
- Both facilitators have a big network and community which contribute to finding the right partners to solve the warehousing issues.

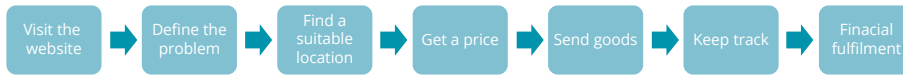
Nevertheless, each facilitator is taking different steps when it comes to the eventual collaborations. Compose is taking the six steps below, showed in figure 4, to come to a perfect match (Veenstra, van der Kuijl, Aarts, & Schriek, n.d.). The first step is to find out why companies consider collaborating on a horizontal level. After that, the explore phase begins and different collaboration partners are selected. When the right partner is found, both parties will become acquainted leading to the next step, namely the analyse phase. In this phase there will be analysed if the collaboration is profitable for both parties, how the contractual settings will be, et cetera. In step 5 all the details will be discussed and eventually the collaboration agreement will be implemented in both organizations.

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**Figure 4** Compose Process Map

Stockspots on the other side, takes different steps when it comes to the matching process (Been, de Lange, & Brouwers, n.d.). As shown in figure 5, the first step for a company to find or offer warehouse space is to go to the website and define the problem. For example, that they are in need for 300 pallet places for period X near to location Y. Eventually, some suitable locations will be showed, a price can be determined, and the company can send their goods to the chosen warehouse. Meanwhile they can keep track of their goods and Stockspots will help facilitate the financial fulfilment.



**Figure 5** Stockspots Process Map

Based on the process steps each facilitator takes, there can be concluded that Compose focusses more on long term relationships between companies. In accordance, Stockspots facilitates fast solutions and is not facilitating in the long-term relations. They only 'offer' companies who offer warehouse space and can be seen as a tool which shows the possible matching companies.

## Conclusion

This research, as part of the Sharing logistics project, focussed on the concept of shared warehousing. The research examined the existing trend of shared warehousing (in line with other sharing concepts in the Sharing logistics project, such as: urban distribution, construction logistics, transport & warehousing, care logistics and service logistics, see e.g., <https://www.rdmcoe.nl/projecten/sharinglogistics/>). This research part of sharing logistics examines the current level of collaboration between Logistics providers and on demand platform facilitators.

This contribution focussed on two main questions (as part of the shared-warehousing research in Sharig logistics), i.e. what is the existing value proposition concerning Truly shared warehousing and what is causing the reluctance between parties to create collaboration in a truly shared warehousing?

The existing value proposition was identified within three different cases, using a business model canvas analysis. Besides, the Business Model Canvas which was used as a common language/tool showed although there are similarities in values between parties, differences are much bigger specially in value propositions, key activities, key partners, and customer segments.

It was learned that parties are reluctant to collaborate with each other even though they were still attracted to the concept of shared warehousing by deploying the concept per their own network.

Risks and challenges such as: legal liability, mutual trust, regulations, and requirements for storage that parties were discussed during the workshops recognized as the main reasons for their reluctance to collaborate. To overcome those risks and challenges parties have

set certain conditions and motivations such as: standard certifications, different services, lower cost and effort. Furthermore, it was discovered that mainly small to medium size enterprises/start-ups are attracted to the solutions being provided by platform providers. Major market players such as syncreon have already established their own network from which they can get benefit from with a minimal effort.

Therefore, it is concluded that topic of shared warehousing is being practiced by parties in the market to certain extend However, as needs/requirements per company and their partners/clients differ, collaborating on a concept of truly shared warehousing via a platform provider is limited to certain segments of the market.

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