CONTROL AND MONITORING FOR E-FULFILLMENT IN FASHION

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ABSTRACT
More than before fashion is sold through e-channels and this implies an increase in e-logistics. Shop selling stagnates. But as fashion sales handled through e-channels is becoming a substantial part of the business, successfully managing such a channel is a challenge for almost all fashion retailers. This research maps the logistics structures of the different fashion e-tailers, and obtains insight in the patterns how products are distributed and returned. The involved logistics structures differ strongly from the logistics structures towards fashion shops in the High Street, especially for its return flows. We describe which parts of the logistics flows are most vulnerable, and which KPI's are applied to meet these challenges. We found that Dutch fashion e-tailers use a wide variety of distribution structures for e-business and sometimes use different KPI's as compared with regular supply chains. Delivery appears to be an important part of the total customer experience. Controlling, applying KPI's and improving efficiency during the e-fulfilment phase is considered essentially by companies to become more competitive and financially successful. We found that the number of KPIs seems to be related to the width of the product range and the price level. Our research gives a clear view how fashion chains are coping with e-logistics and how this relates to existing theoretical models. Especially the control on goods returned, which has not been done much before in-depth. This is important to know, as fashion chains urgently ask for a better understanding of the questions how to manage e-tailing and which KPI's may suit to what conditions. The research offers several practical recommendations to the industry on this aspect.

Keywords: fashion e-channels, key performance indicators, E-fulfilment, returned fashion goods

INTRODUCTION

Whether fashion products are sold from a store or through a web shop, for every fashion company logistics is a hot topic. A fashion company which fails to get the right items at the right time at the right store or at the right delivery address, will find itself quickly out of customers or out of profit. For decades, all fashion companies are improving their logistics, in order to determine the success of the company. Zara still is the leader in fashion logistics, with a longstanding sales and profit growth of around 20 percent per annum (Inditex, 2013). For the first time, the Half Years Results of 17 September 2014 reported a sales increase of "only" 6% and a profit increase of "only" 4.5%. Few fashion businesses can design a whole new fashion line, produce, distribute and offer it in its stores within 16 days, like Zara does. But in recent years, almost all fashion companies have been able to shorten their lead times considerably. For fashion companies selling via the High Street store still forms the focus for their main logistics concepts.

In the Netherlands since 2008, we see High Street retail sales stagnate. Especially the fashion industry has been hit hard. Some Dutch High Street fashion retail organisations have lost 30% of their turnovers since 2008. Not only independent retailers, but also large High Street retail chains such as De Bijenkorf had to close shops, and some retail chains collapsed, like the Schoenenreus, Hans Textiles and Bandolera. At the same time, overall fashion sales increase - even considerably. Partly driven by new providers or new potential competitors, fashion companies have started to open web shops. These web shops generate not only more turnover for the retail chain, but also increase brand awareness.

PROBLEM SKETCH

The decision to start selling fashion online alongside a physical store, is usually driven by competition - there are more and more competitors on the market - and is aimed at maintaining or increasing a market share. The front of the e-business - towards the

consumer - is generally realized quickly, the back - the logistical structure and the physical realization – has often been no easy aspect for fashion e-tailers. In fact, the logistics of their e-commerce activities has proven to be a major challenge for these companies. E.g. a large fashion retailer like Zalando only made a profit in 2014 after 6 years of continuous losses (Oude Elferink, 2014; Zalando, 2015). But fashion store chains mainly seem to use web shops as a mean for not losing market share and generating brand awareness, rather than using it to generate more profit. But the logistics costs of e-fulfilment are invariably extremely high, so these costs always put profitability under pressure. On average, the logistics costs of a web shop consists for 2/3 of transportation-related costs (last-mile distribution, return transport) and for 1/3 of warehouse fulfilment costs (Lenders, 2014). Many fashion companies wish to organize and control e-fulfilment of web shop sales better. How can this be done best?
We have formulated on the basis of this analysis the following research question:

How do fashion companies in the Netherlands organise the e-fulfilment concerning web sales and how can they improve the control and monitoring of these processes?

By doing this research we want to help the fashion business to understand under what conditions certain KPIs are appropriate, and we want to give our students more insight into the question how the logistics of the Dutch e-fashion fits with existing theories, and how this e-fulfilment can be improved.

For this study, we posed two sub-questions:

1. What are recent developments concerning physical flow of delivery and returns setup in e-fashion in the Netherlands and which logistics basic patterns can be distinguished?
2. What kind of PIs are used by the surveyed fashion companies and what conclusions can be drawn from this?

We were asked to investigate how control of e-fulfilment eventually could be translated into Performance Indicators (PIs). During this investigation, we discovered that the focus of e-fulfilment was on delivering goods towards the customer. This was strange as during the interviews many remarks were made by the respondents on the problems caused by goods returned by the customer. The lack of interest in returned goods also can be found in many publications on managing e-business (e.g. Chaffey, 2014) and even in a book written by professional experts on the new Dutch e-business customer (Van Welie, 2015). In this book returns are discussed as an aspect of customer relationship and a legal EU obligation and not as a profit cruncher.

METHODOLOGY

After an extensive study of literature, we asked 21 fashion chains for this research. 7 fashion chains - who represent the diversity of fashion companies in the Netherlands - accepted. We did a thorough qualitative study, based on in-depth interviews with logistics and supply chain managers. One of these companies only operates on the internet based on a long tradition of direct marketing; 6 are traditional High Street retailers who have setup a new internet distribution channel as a supplement to their main High Street activities. They vary in assortment, market segments and price-levels.

If we look at the type of business we can categorize them as follows:

- 100% e-shop (="clicks") : company A
  - has a brand platform in addition to his own collection
- Wholesale + e-shop and High Street (" bricks" : company E
  - sells its brand collection to other retailers
- Department store (bricks and clicks) : companies B and C
  - carries a wide range of products including fashion
- High Street chain (bricks and clicks) : companies D, F and G

- only sells its own collection

Table 1 below provides a breakdown of the different companies in the number of employees, number of stores (brick-stores) and how long the organization has been active in e-business (set date September 1st, 2014). Finally, we made a classification by the width of the fashion range offered on the company's website: XL for a very large range; L for a wide range; M for a medium range; and S for a limited range.

Company	Number of employees in NL	Number of brick-stores in NL	Years active in e-business	Width fashion range
A	500 – 750	0 – 25	>15	XL
B	7.500 – 10.000	500 – 750	8 – 15	L
C	10.000 – 12.500	50 – 100	6 – 8	L
D	1.000 – 1.250	100 – 200	4 – 6	M
E	1.000 – 1.250	25 – 50	2 – 4	M
F (*	7.500 – 10.000	750 – 1.000	2 – 4	S
G (*	5.000 – 7.500	500 – 750	2 – 4	S

Table 1 breakdown of participating companies in this study

(* Range with a low price density per item

First we needed to identify recent developments and characteristics of e-fashion. This was needed in order to create a basis for understanding the market and its logistics processes. Our field study in fashion companies started with mapping the different fashion retail distribution and return flows. Then investigated which PIs are used in order to monitor and supervise these logistic flows. On the basis of this analysis conclusions were drawn about the current use of PIs in the surveyed companies. We focused on fashion, especially the product groups clothing and shoes. We did not include high-fashion, given that in terms of scale and price category, this forms a special segment of the market. On basis of the findings of these interviews, we also set up an internet survey which was held under students and ex-students which were also asked to forward the survey to acquaintance. We wanted to understand how they valued the logistics of their internet fashion purchases, and how sustainability influenced their approach towards home-delivery and returning goods. In the 3 weeks of the survey 396 persons responded. Some of the questions asked in the survey relate to reasons for customers for returning goods, and provide insight in the question how to prevent goods being send back.

FINDINGS

In order to understand the physical flow of delivery in the e-fulfilment-structures, we used the model of Van Loon, Deketele, Dewaele, McKinnon & Rutherford (2014). This model - as shown in figure 1 below - shows which channels can be used for e-fulfilments.

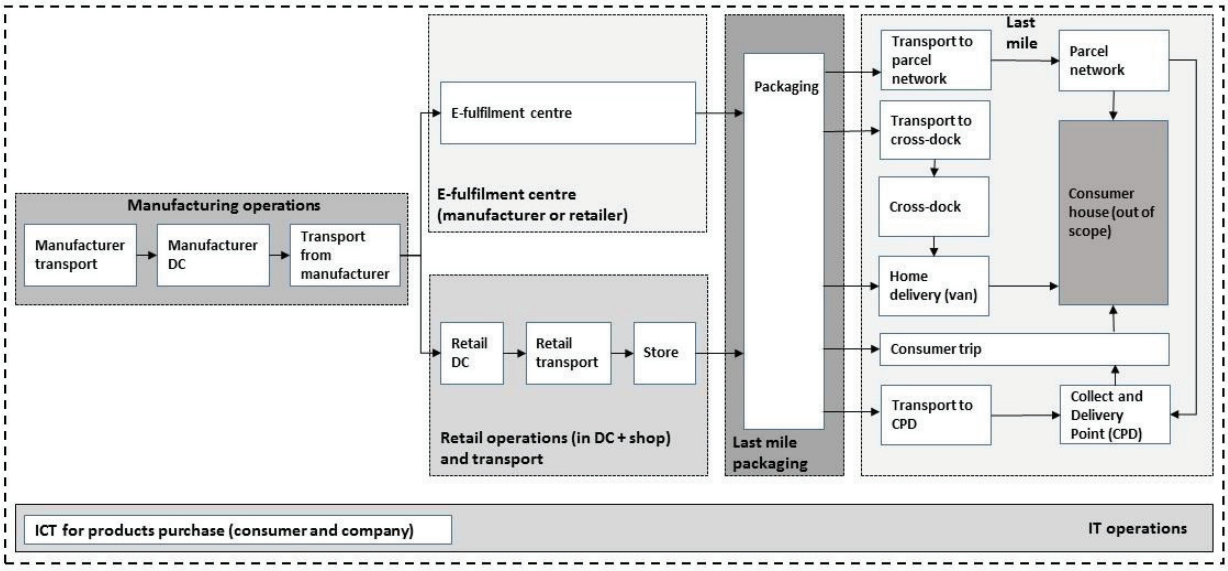

Figure 1 E-fulfillment: the different logistics channels from production to delivery to the customer (Van Loon et al., 2014)

The model depicts the various flows of goods and information for different combinations of bricks and clicks. As we are interested in the control and monitoring of these flows on the basis of PIs, we have to look deeper into the operation. Obviously, PIs should relate to the ordered goods in the right composition, in the desired quantities, at the agreed location, within the agreed time, with the right information and, provided with the correct invoice (Van Mook, 1995; Van Goor, Ploos van Amstel & Ploos van Amstel, 2014), and at least submit an image to deliver the reliability, completeness delivery, return policy, and the back office (Kotler & Armstrong, 2014).

Based on our interviews we found that fashion e-flows appeared to take a different routing in business practice than expected, and we had to redesign the model of Van Loon et al. (2014) in order to depict the situation for e-fulfilment of fashion in the Netherlands:

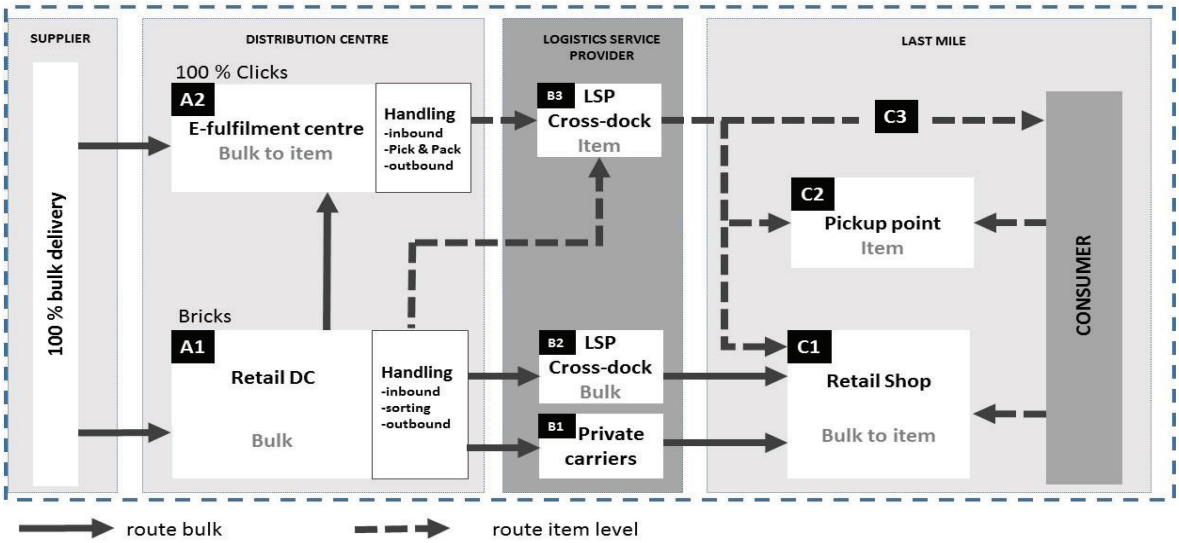

Figure 2 E-fulfilment in business practice for fashion in the Netherlands: the different logistics channels from production to delivery to the customer

On the basis of our analysis of the investigated fashion chains, we distinguish the following different structures for delivering goods to the e-consumer:

1. **Companies that implement e-fulfillment processes in their regular retail DC** (A1 in figure 2). Some fashion companies handle the products in the same way for both bricks as for clicks. The products ordered over the web, are stored individually, or packed as a whole consignment, and delivered via a logistics provider (B3) to the e-consumer (C1 to C3).
2. **Companies that, besides their own DC for the extradition towards shops, use a separate e-fulfillment warehouse** (A2). In this e-fulfillment center, all bulk streams are divided at lot level. After pick and pack, shipments also are delivered via a logistics service provider (B3) to the e-consumer (C1 to C3).
3. **Companies that pick e-commerce orders out of the stocks for the High Street stores** (A1). The logistics provider (B1) or the company's own trucks (B2) comes along at the end of the day to pick up the parcels destined for the e-consumers out of the regular – bulk- deliveries for the chain High Street shops (C1).

For the last mile / the final delivery to the consumer, we found we can distinquish four main variations. The first two options already are included in the model of Van Loon et al. (2014), the other two (c and d) are added by us:

1. **On item level:**
    a) delivery to the home address of the consumer (C3);
    b) or to a pickup point (C2) where the consumer picks up the ordered parcel;
    c) or to a specified High Street store (C1) where the consumer picks up the ordered parcel.
2. **On bulk level:**
    d) or to a specified High Street store (C1) where the consumer picks up a fashion item from the regular store stock. This construction increases the turnover of the store inventory and reduces the chance that clothes should become obsolete and end as a sale item. In this variation, the following problems can occur (Daukuls, Leeuw & Dullaert, 2013):
        - Store staff may lack time, or is not properly trained to handle e-sales;
        - When there is a lack of oversight of the available shop stocks, there is a chance that the product ordered is not in stock at the store and the customer goes home empty-handed.
        - If the company uses a sales bonus system for shop staff, it lacks an incentive to participate in e-sales.

As we saw, many fashion companies fully outsource their e-business to specialized e-fulfillment companies. Outsourcing the whole process, including handling and transport, can be noticedespecially at fashion companies that have a national coverage. For a large number of logistics service providers, e-fulfillment is a substantial part of their activities: e.g. Norbert Dentressangle, DHL, CB Logistics, TNT and Belspeed. In addition, a number of service providers in the Netherlands has specialized fully in e-fulfilment, like Docdata, Pondres and Misi. For a fashion business, outsourcing of e-fulfilment is obvious, given the great pressure on the company to lower costs, and its completely different character, compared to the regular flows of large bulk. When outsourced, fashion flows leave the retail DC (A1) in bulk to the fulfilment party's DC (A2), where the pick & pack activities takes place on a unit level, and fashion products subsequently are shipped (B3) to the e-consumer. Here again, we have the ability to deliver the goods to the delivery points C1 to C3.

The physical return flow is partly a reversal of the flow like the ones shown in Figure 2, with a number of modifications. Depending on the chosen "return formula" the product is send back to the DC, or to the store. The fashion chains that participated in our survey use the following formulas to facilitate the return by the consumer:

1. **The consumer returns the clothes to a High Street store** (C1 in figure 3). Thus the company avoids transportation costs. The shop either is re-selling the product in the shop, or destroys it. For the e-consumer this formula is reasonably

accessible. The customer must leave his own home but he/she can swap or match different clothes at the store. In practice, consumers do buy additional items. A number of companies recorded growth in retail sales after the introduction of this formula. Especially fashion retailers with a nationwide coverage offer this formula;

2. **The consumer returns the goods to a pickup point** (C2) being a post office or parcel point. From there on, the products are send (B3) to the DC. As a rule, to the e-fulfillment center (A2), but in some cases also to the – bulk – DC (A1). In both cases, the returned goods are re-evaluated for marketability, repaired if necessary, stored, or destroyed.
3. **A logistics service provider picks up the goods at the consumers home** (C3). After this, goods are send (B3) to the e-fulfillment center (A2) or the retail DC (A1).

On the basis of their sales and marketing approach, fashion chains determine which of these opportunities are offered to consumers. Offering the ability to return products for free, is often quoted as an argument to stimulate online buying. The different options are summarized in Figure 3.

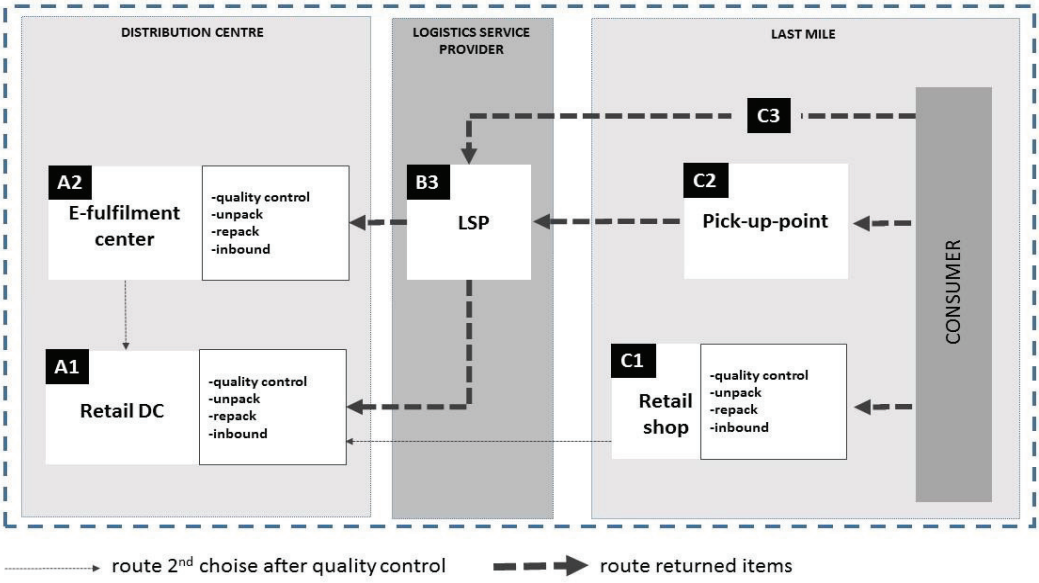

Figure 3 The different return channels for E-fulfillment in fashion, from customer towards DC

In table 2 a total overview is given of the PIs as used for delivery and return:

Company	A	B	C	D	E	F	G
PIs for delivery	17	17	16	16	18	10	10
PIs for returns	13	14	7	11	11	0	2
Total PIs	30	31	23	27	29	10	12

Table 2 Number of PIs used in delivery and return flows per company

Our research showed the following findings for PIs dedicated to monitor e-fulfilment processes:

1. All surveyed companies appear to deploy PIs. Many different ones, we counted a total of 39 different types of PIs.
2. Some companies use a lot of PIs – up to 31 – and some relatively few: 10 to 12.
3. Fashion companies with a narrow range of products and with products in the low price segment seem to apply few PIs, compared to fashion companies with a broad assortment in the higher price array.

4. Companies with an average and a wide product range apply relatively many PIs for the return flows. Companies F and G that are active in the low price segment and have a narrow product range, barely use any PIs for the return flows. At these companies, their High Street stores play a central role for their returns.
5. A number of PIs involve the same business process, but companies use different units of measurement, such as "cost per extradition ',' cost per item" or "cost per order".

Returns have a substantial impact on the profitability in e-business and should be well monitored and controlled. If possible, they should be avoided. Online fashion shops make it very easy for consumers to return any merchandise. Often easier as European legislation requires, which allows consumers to return e-purchased products within two weeks without giving a reason. Zalando in the Netherlands even offers a 100 days window for returning any goods bought with them (Zalando.nl). In business practice return rates amount to 30 to 40% for clothing, and 70% for shoes, as shown in our research. For various reasons a part of these returns no longer can be resold, and has to be discarded or priced down. From a customer's point of view our senses play a greater role in purchasing clothing and footwear than in many other purchase experiences. Even with clothes or shoes well photographed, the actual feel, look and even smell of the purchase prevails. In addition, the fit should be good and last but not least, the article should match other products that the consumer has already in his/hers wardrobe. Together, these elements form a substantial risk for the consumer to be disappointed with his purchase and to take the step to send the product back to the e- shop. Therefore it is interesting to understand the reasons behind the behavior of the e-customer for returning his purchase. The Dutch Knowledge Distribution Centre Logistics Gelderland conducted a survey (autumn 2014) on finding the reasons why e-customers were satisfied or not with e-fulfilment related to their fashion purchases. (Verbeek, 2015). We have found many aspects which do influence the goods being returned by e-customers; some are discussed in this paper, but the bulk will appear in a future article on e-fulfilment, fashion and sustainability. 301 of the 396 people surveyed did buy fashion online. The survey shows that 72 % of online fashion customers in most cases gamble about what size may fit them. And 86% of online-buyers of fashion products return the buying because they claim it does not fit. From the survey, there seems to be a correlation between the way a product is described on the web, and the rate of satisfaction with the purchase as is shown in table 3.

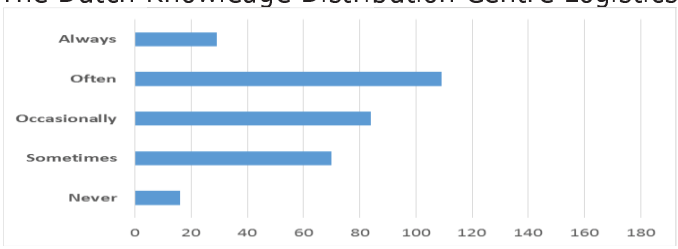

Figure 4 How often do you gamble that the chosen product will suit/fit your size?

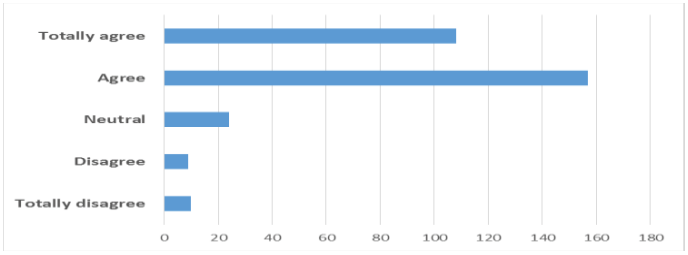

Figure 5 I return products due to the fact that they do not fit

		The information on the website was clear				
		Totally disagree	Disagree	Neutral	Agree	Totally agree
Satisfied with most recent purchase	Totally disagree	6	2	2	1	0
	Disagree	0	6	7	5	0
	Neutral	0	4	10	18	1
	Agree	0	6	22	140	8
	Totally agree	0	0	4	25	34

Table 3 Relationship between information on the website and customer satisfaction

CONCLUSIONS

We did this research to understand how fashion companies in the Netherlands organize their e-fulfilment, and how they control and monitor these processes.

We found that the surveyed Dutch fashion e-tailers have organized their e-fulfilment in a substantial different way as described by earlier – in part theoretical – models. This is due to the nature of the products, the market and the right of customers to return any purchased item.

Dutch e-fashion shops do appear to use PIs in order to monitor and control their e-fulfilment processes. Companies with an average and a wide product range apply relatively more PIs for the return flows, as compared to those companies that are active in the low price segment and have a narrow product range. But as the logistics costs are relatively higher for this low price segment, as compared to the items sold in higher price ranges, returns for the low price range should be avoided even more, as for the higher price range. It is therefore important that the fashion e-tailers operating in the lower price range not only should control and monitor their returns effectively: as all return products may cause enormous return cost, and as some returned products cannot be re-issued for new sales, it is vital that any return should be avoided as much as possible. Proper description and information and appearance on line is vital, as many customers do gamble with sizes, colors, etcetera, when ordering fashion items on line. More research is needed to get a better insight into these aspects concerning e-fulfilment for e-fashion.

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