



HAL
open science

Retail Tactical Planning: An Aligned Process?

Heidi Dreyer, Iskra Dukovska-Popovska, Kasper Kiil, Riikka Kaipia

► **To cite this version:**

Heidi Dreyer, Iskra Dukovska-Popovska, Kasper Kiil, Riikka Kaipia. Retail Tactical Planning: An Aligned Process?. IFIP International Conference on Advances in Production Management Systems (APMS), Sep 2016, Iguassu Falls, Brazil. pp.415-422, 10.1007/978-3-319-51133-7_49 . hal-01615785

HAL Id: hal-01615785

<https://hal.inria.fr/hal-01615785>

Submitted on 12 Oct 2017

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution| 4.0 International License

Retail Tactical Planning: An Aligned Process?

Heidi Dreyer¹, Iskra Dukovska-Popovska², Kasper Kiil¹, Riikka Kaipia³

¹ The Norwegian University of Science and Technology, 7491 Trondheim, Norway

Heidi.C.Dreyer@ntnu.no

² Aalborg University, Aalborg, Denmark

⁴ Aalto University School of Science, Otaniementie, Finland

Abstract. This paper addresses tactical planning in retailing through a case study approach in one grocery retailing company. The issues are how tactical planning is conducted and how the different plans are connected. The study complements earlier retail planning studies by showing the sequence of planning phases and by studying the fragmented plans as a process. The master category planning is important and sets borders for the other planning phases. This stabilizes overall planning. However, the retailer loses responsiveness to demand. The study proposes better integration among planning phases.

Keywords: Grocery retailing · Planning processes · Tactical planning

1 Introduction

Efficient supply and demand planning is an appropriate solution to ensure product availability in stores at lower costs [12, 4]. Retailers fix some important variables, such as store product segmentation, category management, planograms and delivery patterns and replenishment lead times, at a tactical level and pass the decisions to the execution level as parameters [12]. How the different tactical planning issues affect the retail operations (stores, transportation and distribution) and responds to demand has been treated to a limited extent [12, 4]. Even though the basic structure of a coordinated planning framework in the grocery retail industry has been proposed [7], the interdependency of the planning decisions requires a good balance between individual planning processes and supply and demand management. The need for more integrative retail logistics and collaborative planning has been identified [7, 12].

This study addresses tactical planning processes in retailing. In particular, the purpose is to analyse the planning processes and their aim, and to what extent these are integrated to serve the need for alignment and demand responsiveness. Consequently, the research questions are: (1) How is tactical planning conducted at a retail company? (2) How are the different plans connected and interact?

2 Literature on Retail Planning

The main objective of mid-term, aggregated supply chain (SC) planning is to build a plan that satisfies demand while maximizing profit [2] in a timely manner. Mid-term planning often covers multiple SC stages [11, 6] is based on aggregate demands for entire product families and covers a medium-term horizon. Creating such a collaborative plan could be challenging since different functions may achieve profitability in conflicting ways. Coordination between stages and functions becomes the core element in SC mid-term planning.

Retail operations and SC management in the retailing context have been largely studied [5]. Most studies focus on some aspect of planning, like delivery patterns [12], in-store operations [13], retail store replenishments or reducing waste in fresh food SCs [10]. An overall understanding or syntheses of retail planning are rarely presented, with an exception being the grocery retail planning framework by [7]. Mid-term planning comprises several planning phases conducted by and related to one or more functions. First, mid-term planning deals with category and product-related aspects that are grouped as product segmentation and allocation (covering issues related to procurement, warehousing and distribution) and master category planning, related to sales. Second, mid-term planning covers plans for managing the product flow (inbound planning, production planning and distribution planning) and in-store planning, including capacity and personnel planning.

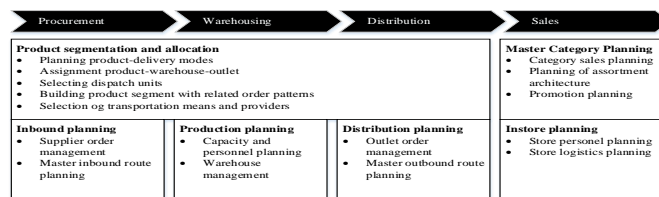


Fig. 1. Grocery retail planning framework at the mid-term level [8] (modified).

Agrawal and Smith (2009) [1] describe a more process-oriented SC planning framework at a (furniture) retailer covering the planning steps, their succession and interrelation. Based on combining the two SC planning overviews, the different planning activities are discussed below. Following the planning process design [8], we identified, based on theory, design parameters (planning horizon and aggregation level), inputs, outputs, objectives and functions involved in each planning phase.

In grocery retail, selection of vendors is more a strategic decision [7]. For products that are carried over multiple seasons, contracts may allow for modifications in order quantities within certain ranges, depending on the observed demand for the product. In addition, retailers can evaluate vendors based on past performance and can be involved in the vendors' production planning more actively or by sharing forecasts and placing purchase orders [1].

The planning of product logistics deals with coordination of flow of products from suppliers to warehousing and to retail stores. These decisions are made on different

planning objects, product-specific and product segment-specific decisions. For inbound logistics, the following planning issues are done at different levels of aggregation: supplier-specific level (related to product ordering) and supplier-segment level (related to transportation issues). Distribution planning deals with decisions to fulfill customer service targets at minimum costs as a trade-off between inventory management policies for each store and delivery policies from the central warehouse. As in inbound planning, the decisions are done at different aggregation levels, some are store (concept) related and others focus on delivery regions.

To summarize, master category planning and sourcing are driven more by the demand and product segmentation and allocation are aimed at balancing demand and supply (and are performed by including several functions); the other mid-term planning decisions are aimed at ensuring supply is driven by lowering costs.

3 Methodology

The aim of the study is to understand the tactical planning processes in grocery retailing. The methodology we chose is a single exploratory case study since this allowed us to gain the needed in-depth insight into the planning process and to enable us to study the planning process in its natural environment [3]. A single case was selected in the grocery sector because of the novel nature of the retail planning process and the wide product range and the mix of product types (fresh, frozen and dry food), which make it relevant from a planning perspective.

Data were collected in two steps. First, site visits and workshops focusing on describing processes and operations, and observations at warehouses and stores were the main means to understand the planning environment. Second, the data about the tactical planning process were collected in structured interviews following a case study protocol [14]. The protocol was designed to cover four topics: the objective and content of the tactical planning process, the structure of the planning processes, planning interconnectedness and performance.

The interviews took place at three levels: retail chain, procurement and suppliers and logistics and it involved key managers with responsibility for tactical planning. The field notes from the interviews were converted to a description of the tactical planning and structured according to the literature in section 2. We asked the key interviewees to review the case description to ensure its validity [14].

4 Results

The case is a Nordic grocery retailer offering a full-range grocery assortment. The organization is structured into three main functions: retail chain (stores), procurement and assortment, and logistics. Altogether, the retailer runs hundreds of stores divided in different store concepts ranging from discount stores and supermarkets to premium stores. Centralised planning tasks include the development of the different store concepts, their assortments, marketing, sales and promotions and various purchasing and supplier network decisions. Managing the logistics consists of the inbound logistics

from suppliers to the warehouses, warehouse operations and outbound logistics to the stores. The main physical operations are the pick-and-pack process at the warehouses together with inbound and outbound transport. All the stores are supplied from the central warehouse, regional warehouses or a combination of the two.

Figure 2 illustrates the tactical planning process, while Table 1 includes a more detailed description of each activity. The tactical planning process takes place at all three functions (Figure 2), but contrary to what is illustrated in the framework presented by [7], the process begins at the retail chain. The tactical planning process can be described as follows: (1) The retail chain decides the main profile of the chain concept and the product categories (category, profile, depth, price, etc.) and promotions for each concept. The decisions are made at an aggregated level covering a time horizon of 12 months, with two main objectives: revenue and profit per chain concept. (2) This plan is afterwards disaggregated into specific products, volumes and time periods for the promotions. (3) Additionally, the specifications of each profile act as an input to the procurement and assortment function, which disaggregates the master category plan into specific products and suppliers while (4) negotiating and making the final contract with the suppliers. The suppliers' contracts regulate the terms and conditions for the purchase and deliveries (price and discounts, volume, frequency, promotions, packaging size) for a 12-month period, while the planograms for each store or store concept are updated every 4 months. Planograms define where specific products are placed on shelves and the stock level. (5) Based on the volumes specified in the contracts and the expected sales in each area (can be derived from the sizes of the shelf in the planograms), the inventory structure is decided upon. This may be adjusted during the year. Hereafter, (6) to ease inventory management decisions, all products are divided into different logistical product groups, which should share the same service level before (7) the final inventory policy and delivery plan is finalized. By grouping the suppliers into smaller regions, the inventory and delivery plan specifies when and how much to collect from each supplier. Lastly, the plan for outbound deliveries from warehouse to stores is made on two hierarchical levels, also with a varying time horizon. Based on the profile of each concept or the store revenue and the inventory structure, (8) guidelines are provided for the number of weekly deliveries for three high-level product groups: a) frozen/dry/fresh food, b) fruits and vegetables and c) products from the central warehouse. Large stores get more frequent deliveries than smaller stores. Finally, (9) the individual routes from the warehouse to the stores are calculated by balancing the delivery plan with the utilization of each truck.

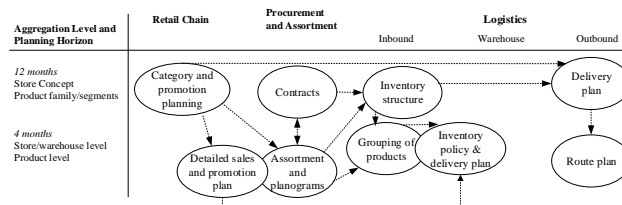


Fig. 2. The sequence of tactical planning phases in the case company.

Figure 2 shows that planning is top-down oriented by starting at an aggregated level and letting the aggregated decisions be the premises for lower level planning. We observed two layers in the tactical planning: one that focuses on a 12 months horizon and is aggregated (store concept and product category) and the second that focuses on product family and individual products and has a 4-month time horizon.

The planning is functional, and the output from one function acts as the input and sets the premises for the next function. Limited feedback loops and interaction between the planning steps are apparent. At the tactical level, there is no joint planning team that joins and coordinates the main planning areas to integrate and align between the functional plans. However, the company does apply different types of meetings to discuss cross-functional issues between the plans.

For each tactical plan there are objectives that serve the aim of the function. Revenue and profit are the objectives of the retail chain, and logistics is measured according to the cost and service level. At this level there do not appear to be any cross-functional objectives that align the SC.

Logistics planning is done under the constraints set in former planning steps, and the aim for logistics is to focus on cost and delivery service to stores given the assortment decided on. Similarly, the stores operate on decisions made by the retail chain and procurement and assortment.

5 Discussion

Content and sequence in a tactical planning process. Planning in the case company has several of the characteristics described in the literature. We observed the functional structure of the planning described by [7], but we also found the planning was process oriented, including different steps and sequences as [1] describe. The planning in the case company started in the retail chain, which decided the master plan for the chain and assortment concept, followed by the assortment and sourcing decisions before logistics decided how and when to move products. Additionally, decisions taken on a higher level is the input from lower planning levels, the planning follows a sequence and is repeated every 4 or 12 months.

The initial planning phases seem to be driven by demand management objectives [2], while the later phases are driven by supply management. The start of the planning process is the master category, store profile and sales and promotion decisions, which set important premises for the rest of the planning. The retailer obeys the practice presented by [12] as it fixes some important variables, such as store product segmentation, category management, space management and planograms and delivery patterns and replenishment lead times, on a tactical level and passes the decisions down to the execution level as parameters. The next planning step also focuses on demand management decisions as procurement and assortment decides on the products and suppliers. When logistics is brought into the planning process, then supply management aspects are brought into the planning, e.g. inbound and outbound logistics and transportation and warehouse capacity.

Table 1. Description of planning process

Activity	Aggr. / Horizon	Input	Output	Objectives	Functions
(1) Category and promotion plan	Store concept Product family	Limited restrictions	Profile of each concept, including price range and promotions	Profit Revenue	Retail Chain
(2) Detailed sales and promotion plan	4 months Product level Concept	Input from master category planning Demand forecast or similar promotions	Specify products - Volume, time and period - Price/promotion per product/concept - Input to inbound logistics call-offs	Revenue Profit Waste	Retail Chain
(3) Assortment and planograms	4 months Product level Store/concept level	Profile of the concept	- Specify products - Shelf allocation (planograms)		Procurement Spacing
(4) Contracts	12 months Product/family	Assortment	Supplier contract (yearly volumes, delivery frequency, discounts)		Procurement
(5) Inventory structure	12 months/Triggered by season/as needed Product level	Warehouse capacity, Store demand, Seasons, Locations of suppliers	Storage/location plan (where to locate each product)	Warehouse capacity	Logistics
(6) Grouping of products	4–12 months Product level	Planograms	Allocation of individual products into A,B,C,D,E categories for planning decisions–service level		Logistics, Procurement
(7) Inventory policy and delivery plan	4–12 months Product/Category level	Product shelf life Balancing transportation cost and inventory cost Demand uncertainty Discounts	Quantity Time/frequency Safety stock Grouping suppliers into regions and delivery frequency	Service level Warehouse waste Tied-up capital	Logistics
(8) Delivery plan	12 months High product family level	Profile of the concept/Store revenue Inventory structure	Delivery structure for stores - Delivery frequency - Delivery time	Service level Waste & cost Dry, Inv. turnover max 12 days	Logistics
(9) Route plan	4 – 12 months Store level	Delivery plan Size of trucks	Routes for deliveries to stores		Logistics

The planning process makes the planning inert since the outcome of the higher level planning is fixed for a long time horizon (12 months) and it is top-down oriented. This makes the planning more predictive and less sensitive to disturbance and market changes and makes it easier to focus on resource utilization and efficiency. However, this makes the planning less dynamic and adjustable to the actual demand situation. Long-term assortment planning and promotion planning (12 months) actually stabilise the planning, and other plans are adjusted.

5 Interplay between organizational functions. Constraints are decided by the objectives of the retail chain and procurement and assortment function, and the main role of logistics is to make a plan that optimizes cost and service level. The 'what' decisions are managed by the retail chain and assortment and procurement, leaving the 'when' and 'how much' decisions of warehouse, transport capacity and delivery frequency to the inbound and outbound logistics planning. The store profile and assortment planning constrains the following planning phases to an extent that the other plans keep the role of implementing the plan.

The overall tactical planning process is fragmented as it consists of a set of sequential plans that are only loosely integrated. First, coordination is done when needed and there is no common arena for integrating all the functions that are involved in the process in order to have consensus in the planning. When planning is done in quite separated loops that serve different demands, they can easily end up in sub-optimising. Second, the planning objectives are different in the main planning functions; some obey commercial objectives, revenue and profit, and others cost and service level. The planning is driven by several goals, but it remains unclear how the planning quality is defined and measured.

Some improvement proposals emerged. First, the different plans can be better coordinated and integrated in general. Second, there need to be efficient feedback loops from implementing the plan to tactical planning. This is essential for keeping the plan responsive to demand and achieving alignment. The company needs to have a practice to update the plan between planning rounds if needed. Third, the whole process, particularly the operational part, could benefit from adopting more formal practices. Instead of the reactive way of operating, with ad hoc meetings and fire fighting, the company could operate in a more proactive manner. Furthermore, we suggest that differentiated planning [9] can be realised to some extent.

6 Concluding Remarks

The operating environment of retail business increases competitive pressure because of multichannel operations, global sourcing and increasing number of product variants. To survive in this competitive environment, retailers need to ensure product availability at stores and at the same time operate efficiently. Our study examines how a retail company has implemented these challenges in its planning solution.

The case company uses a solution for defining retail store assortments for a long period of time and ensuring the supply of products by supplier agreements. This prac-

tice stabilises the planning and sets targets for the operations. The downside of the practice is the low level of demand responsiveness. In this paper we suggest that the company, if better demand responsiveness is desired, could realise formal feedback loops from operations to assortment planning. This would allow adjusting the assortment. This could be applied when planning the next 4-month assortment but also between the planning rounds. The company could also benefit from more formal planning practices and integration mechanisms in realising integrated planning.

This study reports initial results from an on-going research project concerning one retail company. The next steps are to collect more data, particularly on outbound logistics and store planning in order to look deeper into demand responsiveness.

8. Reference

1. Agrawal, N., Smith, S.A.: Supply Chain Planning Processes for Two Major Retailers. In: Agrawal, N., Smith, S.A. (Eds.). Retail Supply Chain Management. Springer US, 11-23 (2009)
2. Chopra, S., Meindl, P.: Supply Chain Management: Strategy, Planning and Operation. Pearson Higher Education (2013)
3. Eisenhardt, K.M., 1989. Building Theories from Case Study Research. *Academy of Management Review*, 14 (4), 532-50 (1989)
4. Ettouzani, Y., Yates, N., Mena, C.: Examining Retail on Shelf Availability. *Int. J. Phys. Dist. Log. Manag.*, 42 (3), 213-43 (2012).
5. Fernie, J., Sparks, L., Alan C. McKinnon, A.C. Retail Logistics in The UK: Past, Present and Future. *Int. J. Ret. Dist. Manag.*, 38 (11/12), 894-914 (2010)
6. Fleischmann, B., Meyr, H., Wagner, M.: Advanced Planning. In: Stadler, H., Kilger, C. (Eds.). Supply Chain Management and Advanced Planning. Berlin: Springer, 71-95 (2008)
7. Hübner, A.H., Kuhn, H., Michael G. Sternbeck, M.G.: Demand and Supply Chain Planning in Grocery Retail. *Int. J. Ret. Dist. Manag.*, 41 (7), 512-30 (2013)
8. Ivert Kjellssdotter, L et al.: Contingency Between S&OP Design and Planning Environment. *Int. J. Phys. Dist. Log. Manag.*, 45 (8), 747-773 (2015)
9. Kaipia, R., Holmström, J.: Selecting The Right Planning Approach for a Product. *Supply Chain Management – An International Journal*, 12 (3), 3-13 (2007)
10. Kaipia, R., Dukovska-Popovska, I., Loikkanen, L. Creating Sustainable Fresh Food Supply Chains. *Int. J. Phys. Dist. Log. Manag.*, 43 (3), 262-76 (2013)
11. Kreipl, S., Pinedo M.: Planning and Scheduling in Supply Chains: Overview on Issues in Practice. *Production and Operations Management*, 13 (1), 77-92 (1994)
12. Kuhn, H., Sternbeck, M.G.: Integrative Retail Logistics: An Exploratory Study. *Operations Management Research*, 6 (1), 2-18 (2013)
13. van Donselaar, K. H. et al. Ordering Behavior in Retail Stores and Implications for Automated Replenishment. *Management Science*, 56 (5), 766-84 (2010)
14. Yin, R.K., 2014. Case Study Research. Thousand Oaks, Sage (2014)