Supply Chain Excellence in the Retail Industry

METRO AG – A Case Study

by

Manuela Schranz-Whitaker

B.B.A. in International Business
Golden Gate University, CA 2002

Submitted to the Zaragoza Logistics Center, a Research Institute associated with the University of Zaragoza, in Partial Fulfillment of the Requirements for the Degree of

Master of Engineering in Logistics and Supply Chain Management

in the

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Signature of Author ____
MIT-Zaragoza International Logistics Program
May 20, 2005

Certified by ____
Dr. Jarrod Goentzel, Executive Director
MIT-Zaragoza International Logistics Program

and ____
Dr. Paul Thompson, Professor
MIT-Zaragoza International Logistics Program

Accepted by ____
Dr. María Jesús Sáenz, Academic Director
MIT-Zaragoza International Logistics Program

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Abstract

The retail industry has seen tremendous change over the past two decades. Especially in the grocery sector, the rules of the game have changed. While it still is a rather fragmented industry, it is dominated by a few giants at the top, which squeeze out costs and fight for every tenth of a percentage point of very slim margins.

One of these giants is METRO AG. Like its competitors, it has to cope with changing consumer behavior and taste, increased pressure from deep discount formats and saturation in its home market, Germany.

With its strategy of freshness and product variety, it does not follow the Wal-Mart slogan of "everyday low prices", but carves out a market for itself. Local knowledge, operational flexibility and customer focus is what sets METRO Cash & Carry apart from the rest and makes its supply chain a model for excellence.

Acknowledgements

METRO AG

I would like thank especially Axel Hopp, Division Manager of METRO Group Buying, for his involvement in the SC2020 Project and in this thesis. He has contributed a wealth of knowledge; without his contribution, this thesis would not have been possible.

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Industry Experts

I want to express my gratitude for the input from two industry experts Christian Koch from SAP and Gurdip Singh from i2 Technologies, who added tremendous insights and put industry trends into perspective.

Faculty

Last but not least, I am grateful for the support the faculty has provided me with throughout the writing process. A special thanks to Larry Lapide, Research Director of Supply Chain 2020 Project, Massachusetts Institute of Technology, for getting me involved in this project. My thanks also go to my advisors Jarrod Goentzel, Executive Director, MIT-Zaragoza International Logistics Program, and Paul Thompson, Professor, MIT-Zaragoza International Logistics Program, for their feedback and support throughout my studies.

Gracias también a las personas del Zaragoza Logistics Center que me han ayudado durante mi estancia en España.

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1 Introduction

This paper explores which operating models, metrics and supply chain processes constitute an excellent supply chain within the retail industry, based on a case study of The METRO Group (METRO AG). The thesis focuses on METRO Cash & Carry, the wholesale division of METRO AG. It analyzes existing best practices within the supply chain of METRO Cash & Carry and shows how specific activities support and promote the business strategy of the overall company.

METRO Cash and Carry is uniquely positioned within the retail industry, because it is a wholesaler that acts like a traditional grocery retailer. However, unlike US club stores, it does not allow the general public to shop at its stores. While it is a wholesaler, it does not offer home-delivery like traditional grocery wholesalers, which generally focus on a particular product category and offer delivery service. Due to this unique position in the grocery industry, this supply chain was selected for the case study.

The paper is a contribution to the first phase of a larger research project called Supply Chain 2020. "The Supply Chain 2020 (SC2020) Project is a multiyear research effort to identify and analyze the factors that are critical to the success of future supply chains. This pioneering project will map out innovations that underpin successful supply chains as far into the future as the year 2020."[1] It is a collaborative project between the Massachusetts Institute of Technology in the US and the Zaragoza Logistics Center in Spain. In an effort to identify initiatives, metrics, processes and strategies, which will constitute an excellent supply chain in the future, faculty and students are conducting research in diverse industries, spanning the US and Europe, including Aerospace, Apparel, Automotive, Communications, Computers, Consumer Products, Distribution, Pharmaceutical, Resources and Retail.

During the first stage of this project, the research focuses on internal company processes and practices as well as macro factors. This will provide a foundation for future Supply Chain 2020 research. By understanding existing best practices and

[1] SC2020 Website. Massachusetts Institute of Technology, Center of Transportation & Logistics. 20. November, 2004 <http://web.mit.edu/ctl/www/research/sc2020/re_sc2020.htm>

strategies, future researchers and companies can more readily identify logical extensions of strategies as well as compare and contrast innovative processes and technologies of the future to existing capabilities.

In identifying the initiatives, metrics, processes, and strategies that will comprise an excellent supply chain in the year 2020, the SC2020 initiative hopes to assist companies in various industries with developing plans and policies, that will extend their competitiveness in the future marketplace. Therefore, Supply Chain 2020 wants to lay out a qualitative framework that companies can utilize as a reference.

For SC2020, three distinct sub-segments within the retail industry are being investigated: General Merchandising, E-Tailing (Internet Retailing), and Food Retail. In each segment, leading companies are analyzed. While this paper focuses on distinct characteristics such as product proliferation and multiple product flows of grocery supply chains, related research within the SC2020 project analyzes business processes within Amazon.com and Wal-Mart.

For this paper, information from various articles, databases and websites was reviewed and analyzed. For the industry overview, in addition to the research conducted, supply chain professionals from two leading software developers were interviewed. Furthermore, we conducted interviews with METRO AG and METRO Cash & Carry managers to gain insight into supply chain related processes.

To put the company and METRO Cash & Carry's supply chain into context, this paper first discusses trends within the retail industry. Chapter 3 highlights industry trends and supply chain challenges, with which companies in this industry are faced. It compares the world's leading grocery retailers, Wal-Mart, Carrefour, METRO AG and Tesco and shows how METRO AG is positioned among its competition.

Chapter 4 provides an overview of METRO AG, describing its six sales divisions, its product offerings and sales channels. It, furthermore, compares the top German competitors. Diving a level deeper into the METRO Group organization, chapter 5 looks at METRO Cash & Carry. It discusses the division's supply chain network and its organizational structure. By discussing various activities as pertaining to supplier, distribution and customer processes, it also provides the basis for the analysis in chapter 6.

The paper concludes with an analysis of how three supply chain related processes – market development, purchasing and distribution – are tailored to the division's operating model, thus complement, and enhance the strategy of METRO AG.

2 Literature Review

The literature review comprises of three sections. The first reviews documents regarding business strategies and their alignment with supply chain processes. Topics covered include alignment of supply chain practices with business strategy, collaboration efforts, use of information technology, and operational effectiveness. In addition, the literature review examines articles looking at the future of supply chains, in order to establish a context for the paper and place it within similar foreword-looking literature. The second section reviews literature on retail supply chains in general as well as the grocery industry in particular is conducted. The literature review concludes with a section on literature about METRO AG and its role in the grocery retail sector.

2.1 Business Strategy Review

In order to understand how processes have to be aligned with business strategy, we reviewed the article “What is Strategy?” by Michael Porter. This article provides a basis for the evaluation of METRO AG’s supply chain and how it ties into its overall business strategy. Furthermore, this article was used to distinguish between strategy and operational efficiency.

Additionally, the supply chain related article “What is the right supply chain for your product” by Marshall L. Fisher gave us insights into how the type of product influences the flow. “The first step in devising an effective supply chain strategy is therefore to consider the nature of the demand for the products one’s company supplies.”[2] Fisher distinguishes between functional and innovative products and their requirements. For functional products with predictable demand such as day-to-day items purchased at supermarket, “the important flow of information is the one that occurs within the chain as suppliers, manufacturers, and retailers coordinate their activities in order to meet predictable demand at the lowest cost.”

[2] Fisher, Marshall L. (1997). “What Is the Right Supply Chain for Your Product?”, *Harvard Business Review*, p105-116

To understand how innovations drive businesses and supply chains, we reviewed the article "Deep Change – How Operational Innovation Can Transform Your Company" by Michael Hammer. It illustrates how innovative companies can gain competitive advantage and transform entire industries. "Breakthrough innovations in operations – not just steady improvements – can destroy competitors and shake up industries."[3]

2.2 Industry Review

For a general overview of the retail industry, several databases such as Euromonitor, Datamonitor, Hoover's Online and Factiva were employed. These databases supplied the necessary industry background such as historic developments, statistics and key trends.

Additionally, we reviewed two articles published by Retail Forward, a globally focused management consulting, market research, and executive development firm specializing in retail intelligence and strategy. "Twenty Trends for 2010: Retailing in an Age of Uncertainty" explores general retail trends, which are expected to take hold over the next five years. "European Retailing 2010" focuses on trends within the European markets.

Both articles state how these trends will affect retail supply chains, but do not go into very much detail. Unlike the SC2020 Project, these papers did not perform a scenario analysis and do not look ahead more than five to eight years.

A study regarding success factors and trends in retail supply chain management will be published in trade literature in July 2005 and will be published as a book in October 2005. Professor Dr. Ulrich Thonemann of the Institute for Supply Chain Management together with McKinsey & Company is conducting surveys of 30-40 leading European retailers focusing on the United Kingdom, France, Germany and the Netherlands. However, unlike the detailed analyses conducted by the SC2020 team,

[3] Hammer, Michael (2004). "Deep Change – How Operational Innovation Can Transform Your Company", *Harvard Business Review*, p84-93

this research is based on a standard questionnaire and will show a statistical analysis, while SC2020 wants to lay out a qualitative framework.

2.3 Company Review

To gain insights into METRO AG's and METRO Cash & Carry's operations, we conducted an extensive Internet and literature search. While much is written about METRO AG and its developments in RFID, not much is published about its supply chain. A case study has been conducted around the company's use of reverse auctions (see Beall, Stewart et al.) and a report written by a METRO AG subsidiary has been published about its development of an "internal 4PL" (see METRO MGL Logistics GmbH (October 2002). "Innovation Retail Logistics – Total Supply Chain Management by an Internal 4PL", *METRO MGL Logistic*). In terms of a comprehensive supply chain study, as far as our research shows, this paper is the first to analyze the interdependence of METRO Cash & Carry's supply chain processes.

Additionally to the literature search, we conducted phone and on-site interviews. Without the involvement of four METRO AG managers, this paper would not be possible.

3 Industry Overview

Prior to analyzing a specific company and one of its supply chains, one has to understand the industry in which the company operates. This chapter gives a brief definition of the retail industry and key statistics. It discusses in detail industry drivers and trends and analyses the supply chain challenges faced by companies, who are operating within this industry. Major competitors are discussed and compared.

3.1 Industry Background

The Retail Industry consists of a variety of outlet types and goods. In general, the industry can be divided into two sectors: food retailing and non-food retailing. Food retailers include large sales retailers such as supermarkets, hypermarkets, cooperatives, discounters, convenience stores and food specialists. Non-Food retailers comprise of general retailers such as department and variety stores, mail order businesses and specialty retailers such as apparel outlets, pharmacies, booksellers, toy retailers, etc.

3.2 Key Statistics[4]

In the US, the retail sector comprises 31% of the Gross Domestic Product, which comes to US$3.4 trillion in 2003 (a 5.2% increase over the previous year)[5]. The Western European market saw US$2.35 trillion in revenue in 2004[6], which constitutes a 1.6% increase from 2003. With the introduction of the Internet, more and more retailers have moved into cyberspace, some abandoning the brick-and-mortar concept all together. An industry survey by Standard & Poor's shows that, in 2003, 98% of all US retail companies (includes catalog, store and internet) used either or both stores and the Internet to sell their merchandise.

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[4] "The World Market for Retailing" (February 2003). Euromonitor. Massachusetts Institute of Technology. <http://www.euromonitor.com.libproxy.mit.edu/gmid>

[5] Asaeda, Jason (November 2004). "Industry Surveys: Retailing General", *Standard & Poor's*

[6] "Western Europe Consumer Goods and Retail Sales 2002-2007". Chart. Economist Intelligence Unit (March 2003). eMarketer Extranet. Massachusetts Institute of Technology. <http://www.emarketer.com.libproxy.mit.edu/Chart.aspx?39138>

Non-food sales vary tremendously by region and tend to be closely linked to the economic performance of a country. In a healthy economy, consumers are generally more willing to spend money on large ticket items and non-necessities. Since food is a daily necessity, sales of food items are less vulnerable to economic fluctuations.

From 1996 to 2001, the retail sector globally grew about 3%, while the number of outlets went up by 20%. In 2001, about 56% of sales came from non-food retailers. In terms of growth, non-food sales clearly outpaced food sales between 1996 and 2001 (6.9% increase vs. 2.2% decline). The economic downturn in the US and other countries affected retail sales around the globe. Most of the revenues in 2001 were generated in North America (38.8%), while Asia Pacific and Western Europe brought in 27.1% and 23.7% respectively. The world's leading national markets in terms of Retail Sales (US$ billion) in 2003[7] were

- US 2,861
- Japan 980
- China 566
- UK 406
- France 389
- Germany 367

In general, the market remains highly fragmented with a large number of small-scale, independent retail formats surviving. However, there has been a clear trend toward consolidation at this level due to the proliferation and increased power of international retailers, who are squeezing out the smaller players. In the European grocery sector, for example, a McKinsey analysis found that between 1994 and 1998 the volume of corporate takeovers rose from $2.9 to $12.4 billion[8]. Figure 1 lists the world's largest retailers in terms of net sales[9] in 2003.

[7] "The Top 10 Countries Worldwide for Retail Sales". Chart. Retail Forward (December 2004). eMarketer Extranet. Massachusetts Institute of Technology. <http://www.emarketer.com.libproxy.mit.edu/Article.aspx?1003175>

[8] Gurdjian, Pierre; Kerschbaumer, George; Kliger, Michael and Waterous, Johanna (2000 Special Edition: Europe in transition). "Bagging Europe's groceries", *The McKinsey Quarterly*

[9] "Top 10 Retailers Worldwide". Chart. Retail Forward (December 2004). eMarketer Extranet. Massachusetts Institute of Technology. <http://www.emarketer.com.libproxy.mit.edu/Chart.aspx?42837>

Top 10 Retailers Worldwide, by Net Sales*, 2003 (in millions)

	Headquarters	Net sales
1. Wal-Mart Stores, Inc.	US	$256,329
2. Carrefour Group	France	$79,761
3. Home Depot Inc.	US	$64,816
4. Metro AG	Germany	$60,648
5. Kroger Co.	US	$53,791
6. Tesco PLC	UK	$50,370
7. Target Corporation	US	$46,781
8. Royal Ahold	Netherlands	$44,283
9. Costco Companies, Inc.	US	$41,693
10. Aldi Group	Germany	$40,047

*Note: *based on estimates as of December 2004*
Source: Retail Forward, December 2004

061764 ©2004 eMarketer, Inc. www.eMarketer.com

Figure 1 Top 10 Retailers Worldwide, by Net Sales, 2003

3.3 Overall Trends and Industry Drivers

The industry has seen tremendous change over the past twenty years. Globalization and the Internet are certainly two concepts that have transformed this industry from a very fragmented and local industry to one that is dominated by a few giants at the top, which squeeze out costs fighting for each tenth of a percentage point of very slim margins. Retailers have to stay on top of the supply chain game to reduce costs and make product available to an ever-changing customer base.

Over the last decade, the key characteristic of the global retail market has been intensifying levels of competition. Since markets in North America and Western Europe have matured, retailers find little room for organic growth. In order to attract customers and increase market share, large retailers compete through price-cutting. This strategy is facilitated by their economies of scale, which allow them to survive with lower margins. As smaller retailers are unable to compete in this environment, they are being squeezed out, making the competition at the top even fiercer.

The situation is intensified by the growing strength of low price formats, such as hypermarkets and discounters. Their ability to work on low margins (1.5% in the grocery industry[10]) due to economies of scale and lower prices, leads to an erosion of margins for all retailers. In order to counteract declining margins, retailers try to shift their focus towards non-food items, which carry higher margins, and away from low profit items such as basic groceries. Notably, some of the large retailers are moving into higher priced retail channels such as convenience stores. "The convenience store sector is one that large grocery retailers are keen to break into these days"[11], notes an article in Supply Chain Europe (2004). Sainsbury, a UK supermarket chain, for example bought a local convenience store chain in 2004.

Due to the increasing competition and lack of growth potential in mature markets, many multi-national retailers are continuing their expansion into higher growth markets, notably in China and India. Retailers in the hypermarket and supermarket sector are especially aggressive in seeking new customers outside of their home market. In addition, large retailers are expanding into other businesses sectors. Carrefour, for example, provides insurance, telecom, and travel services.[12] Those retailers historically focused on food-driven sales with diminishing margins are moving away from specific product lines and towards a portfolio of interrelated products, services and information. Many grocery stores in the US, for example, include banks and food courts, making them a convenient one-stop-shop for customers.

With the dawn of the Internet, many companies have expanded their channels to reach customers online. A study conducted by the Aberdeen Group suggests that "for all practical purposes, the single-channel retailer doesn't exist any more."[13] The study found that only 6% of all store retailers currently operate in only one channel. Figure 2 shows that at least 87.20% of all retailers (store and non-store) surveyed used more than one channel.

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[10] Special Advertising Section (September 2003). "Grocery Distribution - The Squeeze Is On", *Modern Materials Handling*, p.G3-G12

[11] Davies, Claire (October 2004). "Retail's Marriage of Convenience", *Supply Chain Europe - Distribution Supply Chain Management*, p.20-21

[12] Eagle, Jevin S.; Joseph, Elizabeth A.; Lempres, Elizabeth (2000). "From Products to Ecosystems: Retail 2010", *The McKinsey Quarterly*

[13] "The Integrated Multichannel Benchmark Study". Aberdeen Group (August 2004). eMarketer Extranet. Massachusetts Institute of Technology. <http://www.emarketer.com.libproxy.mit.edu/Article.aspx?1003019>

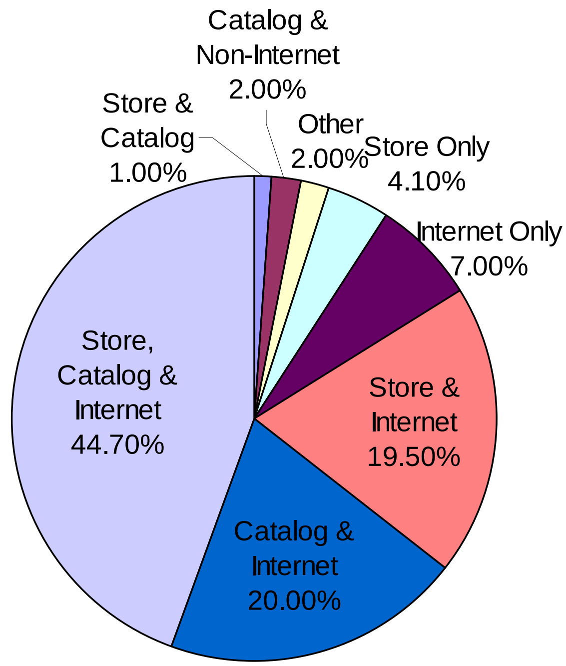

Figure 2 Multi-Channel Retailing

Large ticket sales, such as automobiles and appliances, bought on credit as well as other non-necessity items are highly dependent on macro-economic conditions within each country and region. During times of unemployment and inflation, when consumers are not certain of their income in the near future, consumer confidence falls and sales of large ticket items decreases as customers are less willing to make financial commitments on major purchases. Food sales are affected less by these factors. However, lower consumer confidence may result in higher sales of low cost basics, such as unbranded or discounted items, and decreases in more expensive branded products.

Over the last decade, consumer lifestyles have changed around the globe. In both developed and emerging markets, customers are pressured for time, which has led to two distinct developments within retail. For food purchases, larger families prefer the one-stop shopping of hypermarkets and supermarkets, while the increase in small households augments the need for smaller portions and convenient buys at local convenient stores. Non-food purchases are seen more as a leisure activity, especially in the mature markets of the US and Western Europe, where shopping malls often incorporate entertainment facilities. In recent years, this concept has also taken hold in Asia and Latin America.

The consumer market is splintering into smaller and more diverse segments, which are difficult to identify and predict. “Each consumer is actually many different customers depending on the particular purchase occasion or shipping motivation”. “By 2010, the consumer marketplace will be defined more than ever by shopping behavior and shopping motivation rather than demographics.”[14]

Demand patterns vary greatly across markets and regions, depending on traditions, level of wealth, and product availability. However, some general trends can be observed globally. Consumers are looking more and more for convenience while seeking quality, variety and value, thus favoring retailers with the best price-value merchandise. With more and more women entering the work force and smaller households, customers are looking for time and labor saving products such as

- ready or easy-to-prepare meals
- easy to use household cleaning products
- disposable and portable cleaners, tissues, etc.

Retailers have also turned to a new form of displaying and selling merchandise, called Lifestyle Retailing. Stores or displays are laid out based on the tastes of the target consumer covering a wide variety of product types such as clothing accessories, sports goods, books and/or music. Companies are thus targeting certain groups like teenagers or young adults with a wide product assortment. In Japan and Hong Kong, entire shopping centers are targeted at a specific customer segment.

Popular media in the US and Western Europe has been leading the way to a more health conscious population. With the Internet, increased tourism, and global media (e.g. MTV, magazines), health trends also spread into other regions of the world. Aided by continued lifestyle and work pressures, entire industries around relaxing products, dietary supplements and dieting have emerged. Consumers look for

[14] Hyde, Linda (2003). “Twenty Trends for 2010: Retailing in an Age of Uncertainty”, *Retail Forward* <www.retailforward.com>

products with reduced fat or calories, organic fruit and vegetables, fortified foods, and herbal remedies, etc.

As retailers are facing a more educated and informed customer base, issues like food safety, environmental and ethical concerns come to the forefront. Food safety has become a hot topic after cases of BSE and Foot and Mouth Disease in Europe and Bird Flu in Asia. More and more customers as well as retailers want to be able to trace back the origins of the food they consume or sell. Ethical concerns have become an issue especially in the apparel industry. After cases around Nike and the Gap, many companies include statements regarding treatment of factory workers and the environment.

Legislation in retail generally tries to protect small businesses and, therefore, restricts large-scale retail developments. On the one hand, many markets have seen an easing of restrictions. China under the WTO rules, for example, has lifted its "limits on the number of stores, rules confining them to large cities, and regulations capping the foreigners' stake in local ventures at 65%".[15] On the other hand, most Western European countries still have regulations around opening hours of stores. Over the past decade, stores have been allowed to stay open longer on weekdays and on Saturdays. Sunday opening hours are still under discussion in some countries. "Europe's laws on land development, pricing, store opening hours, and labor compensation will restrict the ability of large retailers to grow and to operate efficiently."[16]

One trend, that will certainly shape the landscape of European retailing, is a move towards a more pan-European approach. "Pan-European distribution will facilitate greater efficiencies and lower prices. By driving redundant costs out of the pipeline, development of pan-European distribution will enable large retailers to offer consumers even lower prices."[17] The challenge in creating a pan-European distribution network, however, is the lack of suppliers and service providers that span the entire geographic region. The largest suppliers to the top retailers – companies

[15] Roberts, Dexter (January 2005). "Let the Retail Wars Begin", *Business Week*, p.44-45
[16] Kalish, Ira (1989). "European Retailing, 2010", *Retail Forward* , p.11. <www.retailforward.com>
[17] Kalish, Ira (1989). "European Retailing, 2010", *Retail Forward* , p.11. <www.retailforward.com>

like Procter & Gamble and Unilever – still run company specific sales offices and pan-European third party logistics providers who are specialists across the board are hard to come by.

3.4 Supply Chain Challenges and Opportunities

Many of the industry trends and drivers just mentioned affect the way retailers configure and manage their supply chains. While there are plenty of challenges (product availability, low cost formats or forecasting), retailers do find opportunities in this cutthroat environment. New technologies such as RFID, efficient channel management and consumer focus will enhance the retail supply chains of the future.

One of the biggest challenges for today's retailers is product availability. This means having the right assortment at the right place at the right time available for the customer where he or she expects it. Because the product also has to be priced appropriately, many retailers have focused their attention on operational efficiency.

In an environment where margins are small and competition is fierce, many retailers are trying to reduce costs within the supply chain in order to keep the costs of end-products low. Wal-Mart with its everyday low prices is certainly the benchmark in this area for the US market. Discounters like Aldi and Lidl are competing on price in Europe and are setting the standard for low price there. Companies who do not want to compete on price have to offer additional value in terms of assortment breadth and higher quality. Thus, they are trying to provide the customer with a better shopping experience.

Another challenge is customer focus. So far, most retailers have been focusing more on creating a network focused towards the vendor.[18] However, now they need to focus on creating better forecasts at the store and item level. Product proliferation and shorter product lifecycles due to changing demand patterns make it very difficult for retailers – whether price or assortment focused – to forecast accurately.

[18] Phone interview with Industry Expert on 7.2.2005 and 25.2.2005

"Aggregate level forecasts are not bad, but converted to units and at the store level they are not that good".[19]

While focusing on operational efficiency has taken costs out of the supply chain, retailers have not been very customer focused. Since the results of the cost-cutting strategy will be less dramatic in the future (i.e., it will generate fewer returns and marketplace advantages), retailers have to become more customer focused. They slowly understand that they have to be more demand driven. Many retailers have historically thought of the supply chain in pieces (supplier to DC; DC to store) instead of acknowledging the constraints of the entire system. This leads to sub-optimal solutions and often does not improve customer service. Looking at the supply chain end-to-end and focusing on the customer will allow retailers to become more responsive to their customers' needs.

These needs are becoming more diverse and hence more complicated to manage, as retailers become more global. "The ability to merchandise across cultural and language barriers will be a competitive advantage." "The fact that many large European retailers are now or will soon be pan-regional makes them better candidates for truly global expansion than many large US retailers. That may explain the fact that European retailers have been more globally successful than US retailers."[20]

Changing demand patterns inhibit forecasting, creating an additional challenge for today's retailers. Retailers and industry experts seem to think that RFID will facilitate inventory control and hence product availability. "RFID offers compelling advantages over the barcode systems currently in use because it delivers a higher level of information and requires a lower level of human intervention."[21] Therefore, they argue, that with better data and increased visibility end-to-end store level forecasting and replenishment will improve. Because better data for sales by customer group and season will be available, this will enhance assortment planning. This, in turn, will also improve forecasting and replenishment.

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[19] Phone interview with Industry Expert, on 8.3.2005

[20] Kalish, Ira (1989). "European Retailing, 2010", *Retail Forward* , p.11. <www.retailforward.com

[21] Hyde, Linda (2003). "Twenty Trends for 2010: Retailing in an Age of Uncertainty", *Retail Forward* <www.retailforward.com>

Because not every product adds the same value to the company, product segmentation is another important challenge for retailers. Depending on the strategic importance, margins and stock-out potential, retailers may want to set up different supply chains[22]. Products with high margins and strategic importance may require a faster supply chain than those with low importance and low margins. For the latter group, a cheap (but potentially slower) solution may be more appropriate. Especially in the grocery industry, where speed and freshness are of the essence, this means separate supply chains for fresh food versus dry goods. While dry goods and slow-movers can be held in distribution centers, fresh and frozen products have to move quickly. Retailers move to "cross-docking to speed the delivery of mixed pallets of high-volume goods to stores and reduce inventory and handling at the warehouses."[23] Since frozen goods need special handling and require different equipment, they cannot be transported with the rest of the goods.

Industry experts agree that channel management is an issue for the majority of retailers. As mentioned in section 3.3, most retailers have more than one channel. However, more often than not employing multiple channels still means operating multiple supply chains. For example, some companies, which sell through traditional channels and the Internet, still maintain separate supply chains for the two business models.[24] "The top challenge facing multi-channel retailers is the need to better integrate order and inventory management processes. Providing a single view of customer history and preferences to disparate sales, merchandising, and marketing organizations run a close second."[25] It is easy to see that combining channels adds complexity to networks but increases visibility to achieve the same service level across the channels.

The same study brings up another challenge for multi-channel retailers: that of channel control. "You better know the value of your customers because they exhibit no loyalty and can shift to another retailer quickly." They also switch channels within

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[22] Phone interview with Industry Expert, on 8.3.2005
[23] Special Advertising Section (September 2003). "Grocery Distribution - The Squeeze Is On", *Modern Materials Handling*, p.G4
[24] Interview with Industry Expert, on 7.2.05
[25] Rosenblum, Paula (June 2004). "The Integrated Multichannel Benchmark Study: Gaining Competitive Advantage by Fulfilling Multichannel Demand", *Aberdeen Group Benchmark Study* <http://www.aberdeen.com/summary/report/benchmark/multichannel_selling.asp>

a company. Therefore, to become more efficient in dealing with customers through multiple channels, a McKinsey quarterly report suggests that companies need to control when and where they interact with customers. The company, therefore, "must understand its channel economics, use incentives to guide its customers to the right channels at the right time."[26] This, however, requires a good knowledge of customers, which may not be possible with the current data.

The grocery industry has seen very little movement towards e-tailing. With few exceptions, early adopters like Webvan in the US have failed. While Internet-only grocery retailers are currently unable to survive, those with backing from a traditional brick-and-mortar company seem to fare well. Royal Ahold, for example owns Peapod. Tesco, the UK supermarket chain launched a successful internet shopping service in 1998.

Acceptance by customers seems to be slow, however. In the US, online sales of groceries are not expected to reach more than 1% of total US grocery sales by 2008[27]. In this regard, the European Market is reacting very similarly. There are three predominant reasons for this sluggish adoption of online grocery sales[28]. In a poll by Forrester Research, more then half of the people surveyed want to touch and see the product prior to purchasing it. Secondly, 29% of them say that the delivery is too expensive. Lastly, 26% of the people asked perceive that ordering groceries online is inconvenient.

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[26] Myers, Joseph B.; Pickersgill, Andrew D.; Van Metre, Evan S. (2004). "Steering Customers to the Right Channels", *The McKinsey Quarterly*

[27] "Online Retail Sales of Groceries in the US, 2002-2008". Jupiter Research (2004); Wall Street Journal Online (May 2004). eMarketer Extranet. Massachusetts Institute of Technology. <http://www.emarketer.com.libproxy.mit.edu/Chart.aspx?39213>

[28] "What's Holding Back Online Groceries?". Forrester Research (March 2004). eMarketer Extranet. Massachusetts Institute of Technology. <http://www.emarketer.com.libproxy.mit.edu/Chart.aspx?37784>

An additional challenge is liberal return policies, which, especially in the US, are putting extra strain on supply chains to handle reverse flows. In recent years, returns have also become a concern due to several "green laws" initiated in Europe and Japan. In Europe, accepting returns at the end of a product's lifecycle in B2B and B2C environments is no longer optional. Green laws require that manufacturers take ultimate responsibility for the disposal of certain products like electronics. In general, these laws deal with recycling, product take-back, design for the environment, and other hazardous substance restrictions that in most cases hold the OEM accountable for compliance.[29]

3.5 Evaluation of Top Competitors

This section compares the leading four food-driven retailers – Wal-Mart, Carrefour, METRO AG, and Tesco – in the world. Due to the varying backgrounds and strengths of the individual companies, a comparison is difficult. Wal-Mart arose from a homogenous US market, which it completely dominates, while its European competitors historically had to expand into foreign markets and deal with a decentralized and culturally diverse customer base. Tesco has had the advantage of a rather sheltered British market with fewer discounters and high price levels. They each dominate varying sectors: METRO AG owns the leading Cash and Carry chain, while Carrefour has been the dominant hypermarket chain in Europe. Tesco leads the British supermarket sector and operates the only profitable e-commerce grocery site.

While a complete analysis of the competitive landscape is outside of the scope of this thesis. The following provides a brief comparison of the four giants in the grocery retail sector to give an indication of its magnitude. As far as possible, a short review of the companies' history, supply chain and strategy is presented. Figure 3 shows their net sales development from 1996 to 2003[30]. Wal-Mart is clearly the world's largest retail chain.

[29] Baljko Shah, Jennifer and Sullivan, Laurie (September 2002). "Firms warned to brace for environmental fallout", *ebn (www.ebnonline.com)*, p.38
[30] Tesco PLC. Hoover's Online. Massachusetts Institute of Technology. <http://premium.hoovers.com.libproxy.mit.edu/subscribe/co/factsheet.xhtml?ID=90426>

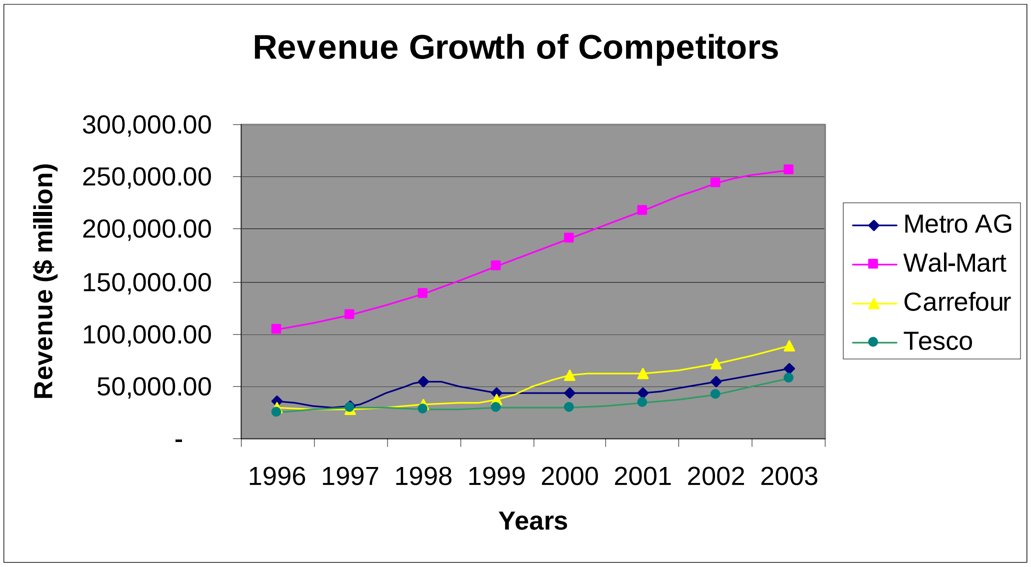

Figure 3 Revenue Growth of Major Competitors in the Retail Industry

While each retailer dominates its domestic market, the battleground for all four seems to be China and the rest of Asia. While Carrefour and METRO AG are not expanding into the US market for the foreseeable future, all eyes are set on the emerging markets of Asia. Figure 4 shows an overview and a comparison purely by numbers.

It is interesting to note that METRO's strategy differs dramatically from that of the other retailers. While all are focused on low prices, METRO tries to distinguish itself by highlighting variety and freshness. Carrefour is expanding internationally rapidly, as evidenced by the large number of stores outside of its home market, France. It has more stores than its two European competitors, METRO AG and Tesco, have combined.

Taking a closer look at the net sales numbers, with €224,000 per year, METRO AG has the highest sales per employee followed by Carrefour. At about €133,000 of sales per employee, Wal-Mart associates generate the lowest sales volume. In terms of sales per store, however, Wal-Mart clearly outpaces its competition with almost

€40.7 million per store per year. METRO AG is a distant second with €23.1 million per store per year.

	Wal-Mart Stores Inc.	**Carrefour Supermarche**	**METRO AG**	**Tesco PLC**
Headquarter	Bentonville, AK (US)	Paris, France	Düsseldorf, Germany	Cheshunt, UK
Strategy	Everyday low prices	Low prices	Variety and Freshness	Low prices
FY 2004 Consolidated Sales	€ 199.5 billion	€72,7 billion	€56.4 billion	€48,1 billion
Formats	Discount Stores, Grocery Stores, Cash & Carry	Supermarkets, Hypermarkets, Hard Discount, Convenience Stores, Cash & Carry	Supermarkets, Hypermarkets, Department Stores, Electronics Stores, Cash & Carry	Supermarkets, Hypermarkets, Convenience Stores, Online Sales
Total Number of Stores	4,906	6,546	2,445	2,318
Domestic Market	US	France	Germany	UK
International Presence	1,355 stores in Asia, Europe, South America	5,020 stores in Europe, Latin America, Asia (30 countries)	704 stores in Europe, Asia, Far East (30 countries)	440 stores in Europe and Asia
Total Number of Employees	1.5 million	430,000	251,556	326,000

Figure 4 Comparison of Major Competitors within the Retail Industry

Wal-Mart was founded in 1962 by Sam Walton in Rogers, Arkansas, and grew into the world's largest retailer with US$256.3 billion in net sales in 2004, which constitutes an 11% increase from 2003. 68% of total sales in 2004 come from Wal-Mart Stores, 13.5% from Sam's Club and the remainder from its international operation. While many of its international competitors have to expand internationally due to mature markets at home, Wal-Mart continues to saturate the US home market with its Discount Stores, Supercenters, Sam's Clubs, and Neighborhood Markets.

Figure 5 shows the breakdown of stores both domestically and internationally. 72% of its stores are located in the US. It employs 1.5 million people worldwide – 1.2 million of them work in the US.

	DOMESTIC	INTERNATIONAL	TOTAL
DISCOUNT	1478	982	2460
SUPERCENTER	1471	257	1728
SAM'S CLUB	538	80	618
NEIGHBORHOOD MARKET	64	36	100
TOTAL	3551	1355	4906

Figure 5 Wal-Mart: Number of Stores Domestic vs. International

Wal-Mart is best known for its business strategy of "Every Day Low Prices" under which it prices its products consistently low, so customers can be confident that prices will not change erratically under frequent promotional changes. Growth occurred organically in the US market by opening stores in small towns (population: 5,000 to 25,000 people) and spurred its international growth by mergers and acquisitions: Woolco (1994 Canada); Werkauf (1997 Germany), ASDA Group (1999 UK). While the acquisition of ASDA was a total success, Wal-Mart is struggling in Germany, where it has no new store openings planned for 2005 and stores are not expected to make significant profits.

To service its stores in the US, Wal-Mart has an immense supply chain, which gets product to the stores quickly. With an inventory turn rate of 6.5, Wal-Mart is above the industry average of 6.2. Within the US, the company owns 90 distribution centers from which it replenishes 80% of its stock[31]. Additionally, it operates 19 cross-docks and runs the world's largest private fleets to transport goods from DCs to the stores. It was one of the first retailers to mandate RFID compliance.

Carrefour was founded in1963 and was the first store to be called a "hypermarket" due to its size. For the first decade, Carrefour expanded in France and surrounding countries, until French legislation limited its growth within its own country. Thus, it

[31] Wal-Mart Stores Annual Report 2004.
<http://www.walmartstores.com/wmstore/wmstores/Mainnews.jsp?pagetype=news&categoryOID=-8775&catID=-8248&template=DisplayAllContents.jsp>

had to grow rapidly internationally to gain a foothold as one of the world's leading retailers.

Now, number two in the world, it achieved net sales of about €72.7 billion in FY2004, almost 50% of which came from its home market, France.[32] The company generates only about 13% of sales outside of Europe. With close to 60% of total net sales, the hypermarket concept is its strongest format, followed by Supermarkets and Hard Discount stores, all of which are promoted under various brand names.

Due to the legal situation in France, which restricts Carrefour's growth, it has an immense international operation with 5,020 stores outside of France. It competes heavily in China, where it currently operates about 90 hypermarkets and discount stores in 20 cities. However, it does not own all stores instead giving licenses and franchises for its 8 à Huit and Shopi convenient store concepts.

Logistics optimization was high on the agenda in 2003, when "Carrefour Italy created the largest Logistics platform for consumer products in Europe, designed for its 37 hypermarkets".[33] In France, hypermarkets each have their own warehouses while supermarket and convenience stores share facilities. In an effort to standardize and optimize logistics processes, Carrefour established worldwide benchmarks.

Tesco's name first appeared in 1924 in form of a private label product called Tesco Tea, which owner Jack Cohen sold through several stands on London. He opened his first store in 1929, but it took until 1947 for the first Tesco Supermarket to open. Since then, Tesco has grown to Britain's number one grocery retailer and now operates a number of different sales formats and sells a wide variety of products. Under the brand Tesco Express, it owns gas stations and provides financial services. It even sells life insurances, offers general insurances for home, car, pet and travel through a joint venture with the Royal Bank of Scotland and provides credit cards and advantageous loan and savings schemes.

[32] The Carrefour Group – History – Profile:
<http://www.carrefour.com/english/groupecarrefour/profil.jsp>
[33] Carrefour Annual Report 2003.
<http://www.carrefour.com/english/actionnaires/rapportsAnnuels.jsp>

Tesco did not begin its international expansion of its retail business until 1992 when it acquired stores in France and Scotland. It now owns 2,318 stores, only 440 of which are located outside of the UK[34]. During the fiscal year ending in February 2004, 80% of sales came from its UK business; the European and Asian operation brought in 11% and 8% respectively.

Tesco is replicating its centralized distribution model present in the UK in its other markets. In 2003, it opened the largest distribution center in Asia. It already operates facilities in Poland, Hungary, the Czech Republic and the Republic of Ireland.

[34] Tesco PLC Annual Report 2004. <http://84.40.10.21/presentResults/results2003_04/Prelims/site/index.html>

4 Industry Position of METRO AG

After discussing the industry background and major competitors within the retail industry, we take a closer look METRO AG. To understand the strategy and business processes of METRO Cash and Carry discussed in chapter 5, it is important to give a background of its mother-company, METRO AG. This chapter establishes METRO AG's position within the retail industry by giving historic and current data, describing its various business units and products and discussing its domestic competition.

4.1 Historical and Current Data[35]

Otto Beisheim opened the first METRO Cash & Carry store serving commercial customers in Germany in 1964. Through financing received from an industrial company, Franz Haniel & Cie, and members of the Schmidt-Ruthenbeck family, Otto Beisheim was able to expand METRO Cash & Carry in Germany.

Its rapid expansion in Europe is largely due to mergers and acquisitions[36]:

- In 1968, METRO formed a partnership with the Dutch Steenkolen Handelsvereenigung (SVH) and expanded into retailing.
- In the 1980s, METRO acquired the German department store chain, Kaufhof AG.
- In 1989, Kaufhof acquired a stake in a computer manufacturer and retailer named Vobis.
- In 1993, METRO acquired a majority interest in the German hypermarket and supermarket chain Asko Deutsche Kaufhaus, which also owned the Praktiker building materials chain.
- In 1996, the METRO Holding created METRO AG by merging Kaufhof, and Asko, which included another German retailer, Deutsche SB Kauf. In the same year, it went public and has since been listed on the stock exchange.

[35] Most of this information comes from Hoover's Online and the company website <www.metrogroup.de>

[36] Metro AG. Hoover's Online. Massachusetts Institute of Technology. <http://premium.hoovers.com.libproxy.mit.edu/subscribe/co/factsheet.xhtml?ID=52620>

- In 1996, METRO AG purchased 58 Wirich home-improvement centers to expand the Praktiker home improvement line.
- In 1998, METRO AG acquired 196 stores from Makro Self-Serve, a wholesale chain owned by Dutch SVH. In the same year, it also purchased 94 stores from the Allkauf hypermarket chain and the entire Kriegbaum hypermarket chain (20 stores), to expand its presence in Germany.
- In 2000, METRO took over German e-commerce business, Primus Online.

By 2000, METRO AG employed 220,000 people in 22 countries and the revenues from operations outside of Germany had risen to 42.2% of total corporate revenues[37]. METRO AG has continued its rapid international expansion since then opening stores in Russia, China, Bulgaria, and India. Currently, METRO AG operates in 30 different countries with most of the expansion happening in Eastern Europe and Asia. METRO Cash & Carry and Media Market/Saturn are the METRO Group's leading divisions and drive the international expansion. From 2003 to 2004, METRO Cash & Carry increased its number of stores by 6% and Media Market/Saturn increased its number of stores by 17%. In 2004, 31% of all stores were outside of Germany and brought in almost 50% of revenues in 2003 (Figure 6 and Figure 7). Revenues in 2003 were €53.6 billion, up 4% from the previous year.

Figure 6 METRO AG: Number of Stores Domestic vs. International

[37] The History of the Metro Group.
<http://www.metrogroup.de/servlet/PB/menu/1000082_l2/index.html>

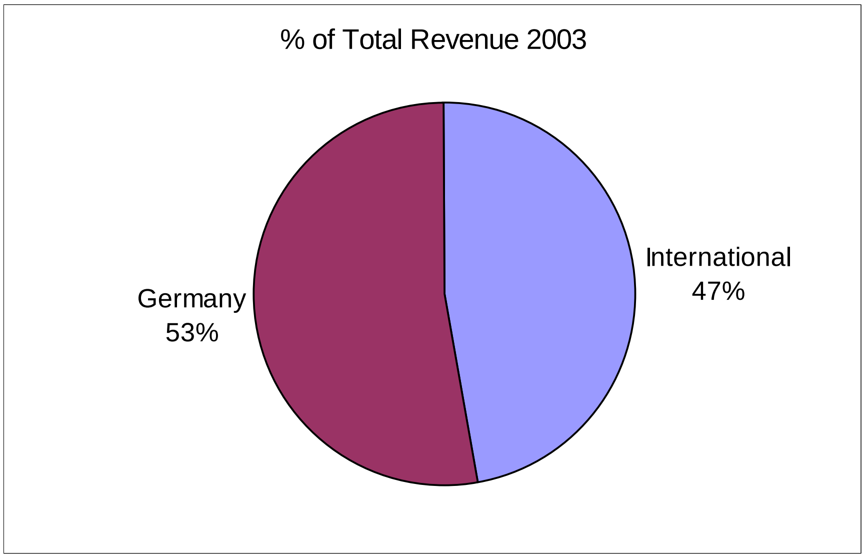

Figure 7 METRO AG: Percentage of Total Revenue 2003 Domestic vs. International

4.2 Business Units[38]

Today, METRO AG is a strategic management holding company, whose products are sold by six very distinct and independent sales divisions operating in four business units: Cash and Carry, Food Retailing, Nonfood Specialty Stores and Department Stores. Cross-functional divisions perform tasks such as purchasing, logistics, IT, marketing, finance and insurance common to all brands.

METRO AG's objective is to "lastingly increase the value of the company". "The major pillars of the strategy of profitable growth are the optimization of the distribution concepts, the optimization of the portfolio and the internationalization of the company. Every sales division is expected to position itself at the market in such a way that its value and profitability go up consistently. METRO Group is active only in business units in which sales divisions of a significant size can operate in sufficiently large market segments. The portfolio thrives on diversity. The business

[38] Information in this section was gathered from the company's website at <http://www.metrogroup.de>

units and sales divisions complement one another."[39] Figure 8 shows the percentage of sales by sales division for FY2003.[40]

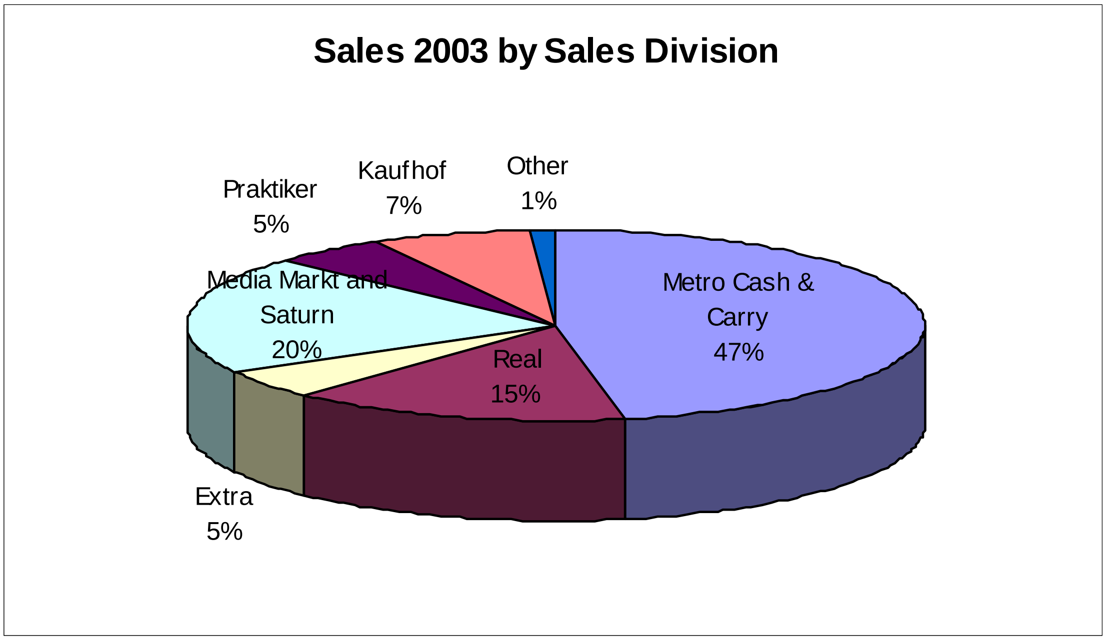

Figure 8 METRO AG: Sales 2003 by Division

Stores of the METRO Cash & Carry International GmbH operate under two names, METRO and Makro, targeting commercial and large-scale customers by offering a wide range of high-quality food and non-food products. Per Figure 8, it is the Group's largest brand (by sales) and the world market leader in the wholesale business. In 2003, it operated 475 stores in 26 countries generating €25.1 billion, which constitutes a 4.7% growth over the previous year[41]. The sales division is growing rapidly outside of Germany: 73% of sales are generated abroad.

Real SB-Warenhaus GmbH, the METRO Group's hypermarket chain, is predominant in Germany where it has a daily frequency of shoppers of up to one million. In 2003, it generated €8.2 billion in sales, 90% of which came from the

[39] Company – Corporate Strategy. http://www.metrogroup.de/servlet/PB/menu/1000083_l2/index.html
[40] 2003 Facts and Figures of the Metro Group (Annual Report). http://www.metrogroup.de/servlet/PB/menu/1009557_l2/index.html
[41] 2003 Facts and Figures of the Metro Group (Annual Report). http://www.metrogroup.de/servlet/PB/menu/1009557_l2/index.html

domestic market where it currently operates 272 of its 306 stores. Sales have been rather stagnant in the last three years and expansion of stores from 2002 to 2003 has taken place only in Germany. Its strengths are a high-quality assortment of goods (up to 70,000 SKUs overall) and its focus on freshness.

Extra Verbrauchermärkte Deutschland GmbH & Co. KG is an important supermarket chain in Germany, generating €2.7 billion in sales in 2003. 100% of Extra's revenues are generated within Germany, where it currently operates 436 stores (down from 466 in 2003). Due to its poor performance over the last few years – revenues have declined 2.2% and 4.9% in 2003 and 2002 respectively – the company has been undergoing a restructuring process. METRO AG reduced the number of Extra stores and merged Extra and Real's sales divisions to capitalize on commonalities between the two brands. Unlike its larger cousin, Extra is marketed as a neighborhood supermarket with an average space per store of 1,755sqm compared with 7,192sqm of Real.

Media-Saturn-Holding GmbH combines Media Markt and Saturn, two brands under which METRO AG sells consumer electronics. With an increase in the number of stores of 17% from 2003 to 2004 and revenue increases of 10.2% from 2002 to 2003, it is one of the Group's growth drivers. 59% of sales (€10.6 billion in 2003) are still generated in Germany, where Media Markt has the "most dense sales network of all customer electronics centers"[42]. With a selling space of 16,000sqm, Saturn runs the world's largest consumer electronics center in Hamburg. The brand is built on a large assortment with an attractive price-performance ratio customers expect.

Praktiker Bau- und Heimwerkermärkte AG is METRO AG's chain of Do-it-Yourself home improvement centers. Despite difficult economic conditions in Germany in 2003, it was able to increase its market share and bring in €2.8 billion in revenues. While store locations in Germany are actually declining, the brand saw an 11% increase in stores outside of the domestic market. In 2003, 78% of revenues were generated in Germany, 20% in Western Europe and the remainder in Eastern Europe. Praktiker attracts customers with a wide assortment of products (around

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[42] 2003 Facts and Figures of the Metro Group (Annual Report). p.24 <http://www.metrogroup.de/servlet/PB/menu/1009557_l2/index.html>

70,000 SKUs) including building materials, decorating and gardening products as well as wellness products (e.g., accessories for saunas and whirlpools). It also carries private label products on which it grants a ten-year warranty.

Kaufhof Warenhaus AG is the Group's department store concept. Although, METRO AG did not acquire this division until the 1980's, it celebrated its 125th anniversary in 2004 making it the Group's longest running business. Due to the economic down turn in Germany – its largest market – Kaufhof was unable to realize higher sales in 2004 than in 2003. Sales figures dropped by 1.3% to €3.8 billion in 2004. In 2004, the division did not add any outlets to its current 132 stores in Germany and 15 in Belgium.

METRO AG as a holding group also incorporates several cross-divisional service companies, all of which are separate legal entities but 100% owned by METRO AG. The most important ones to mention are

- MGB (METRO Group Buying GmbH)
- MGL (METRO Group Logistics GmbH)
- MDL (METRO Distribution Logistics GmbH)

METRO Group Buying (MGB) was established in 1993. It is responsible for the central purchasing functions of food and non-food items in Germany and internationally (about €43billion per year). MGB negotiates volumes, quality and prices with suppliers and strengthens the competitiveness of the Group. It also defines standards and criteria for quality assurance for all divisions it services. Initially, this cross-divisional company was responsible for purchases only for the domestic market in Germany. However, with the expansion of METRO Cash & Carry and Media Markt/Saturn, MGB now has subsidiaries in Hong Kong, Russia, Poland and Turkey.

The two logistics related companies under the METRO AG umbrella are METRO Group Logistics (MGL) and METRO Distribution Logistics (MDL). From its four locations, in Germany, Poland, Austria and Turkey, MGL is responsible for organizing all direct-to-store movements from suppliers to stores within Europe. On average, it handles a daily volume of 38,500 parcels, 35,000 pallets and 400,000 individual shipments from the supplier directly to the store or via central warehouses and cross-docking platforms. Interestingly enough, MGL is a profit center, unlike many logistics organizations within other companies. When MGL negotiates with vendors, it asks them to lower the price of the goods by the transportation charges, which then are paid to MGL. Thus, the vendor is not worse off then prior to the arrangement, but MGL can gain profits by negotiating better prices with its transportation providers.

MDL, on the other hand, works mainly for Real and Extra and specializes on food logistics. It focuses primarily on warehouse operations and break-bulk facilities. In addition to two warehouses for non-food items, it operates seven central warehouses for dry food, fresh produce, fruit and vegetables and frozen foods in Germany. Furthermore, MDL is responsible for deliveries by METRO's private fleet to about 720 stores within Germany and checking quantities, prices and quality prior to delivery.

4.3 Products and Services

The offerings of METRO AG can be grouped into four major products categories, which roughly correlate to the sales divisions (METRO C&C, Media Markt/Saturn, Extra, Real and Kaufhof) as mentioned in section 4.2: Cash & Carry, Non-Food Specialty, Food-Retail, Department Store. From Figure 9[43], one can see that as a percentage of total sales, sales of department store products have gone down from 2001-2003, while sales of food-retail have increased.

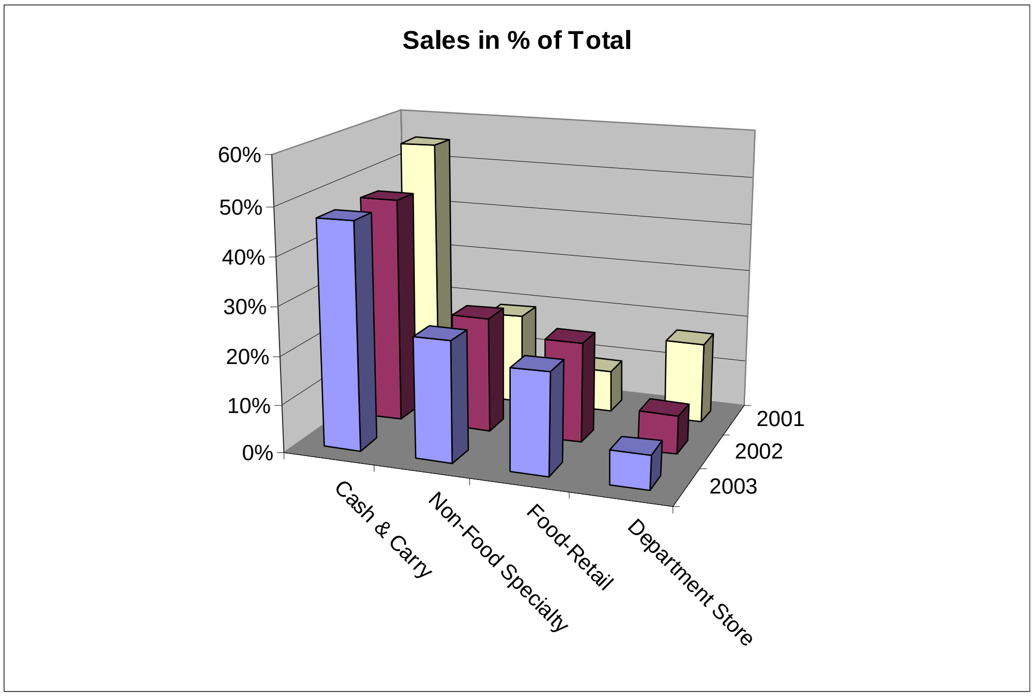

Figure 9 METRO AG: Sales by Product Category in Percentage of Total Sales

A different way to classify products within the Cash & Carry and Food-Retail format is food versus non-food. The food category, in turn, is segmented into dry-food, fish, fruit and vegetables, cooled products like meats and frozen goods. METRO Cash & Carry offers a fast array of non-food items traditionally not found in a supermarket like clothes, electronics, garden furniture and tools. Real, as a

[43] Metro AG. Hoover's Online. Massachusetts Institute of Technology. http://premium.hoovers.com.libproxy.mit.edu/subscribe/co/factsheet.xhtml?ID=52620

hypermarket, has a similar assortment as METRO Cash & Carry, while Extra carries a line of traditional supermarket offerings, while Media Markt and Saturn have a vast line of electronics. In addition to their product assortment in the store, Praktiker and Real sell vacation packages, which can be booked online. Below is a list of Standard Industrial Classification (SIC) Codes[44] carried across the divisions.

3429 Hardware
3634 Electric housewares and fans
3635 Household vacuum cleaners
3639 Household appliances
3651 Household audio and video equipment
3661 Telephone and telegraph apparatus
5031 Lumber, plywood, and millwork
5032 Brick, stone, & related materials
5033 Roofing, siding, & insulation
5039 Construction materials
5064 Electrical appliances, TV & radios
5072 Hardware
5198 Paints, varnishes, and supplies
5211 Lumber and other building materials
5231 Paint, glass, and wallpaper stores
5251 Hardware stores
5311 Department stores
5411 Grocery stores
5651 Family clothing stores
5722 Household appliance stores

Aside from its actual product offerings in the stores, METRO AG and its sales divisions offer the customer services either in-store or on their websites. Extra, for example, lists recipes and offers on-line picture development. It also allows customers to create shopping lists on-line. Data can then be stored and retrieved for the next store visit. As mentioned above, Praktiker and Real offer vacation packages

[44] Metro AG. Hoover's Online. Massachusetts Institute of Technology. http://premium.hoovers.com.libproxy.mit.edu/subscribe/co/factsheet.xhtml?ID=52620

online. METRO Cash & Carry informs its clients about food safety and hygiene. In general, all divisions offer product information, store finders, and information regarding current promotions.

4.4 Sales Channels and Customer Segmentation

Customers are segmented by sales division. Each sales division is targeting a rather distinct customer base. METRO Cash & Carry is focused around commercial customers with small businesses. Media Markt/Saturn targets customers interested in electronics. Extra is focusing on shoppers who go shopping more frequently near their neighborhood while Real is the one-stop shopping location for weekly purchases. Kaufhof, on the other hand, focuses on the high-end consumers looking for brand labels in clothing.

Kaufhof and Media Markt are the only sales divisions, which offer online shopping. All other divisions offer their products in traditional retail outlets only. METRO AG's strategy is to position each division in its individual market and make each division sustainable in its own right. The various sales formats complement each other and offer a wide product assortment to customers.

4.5 Innovation

METRO AG tries to be at the forefront of technological innovation and, therefore, launched the Future Store Initiative in 2002 and the RFID Innovation Center in 2003. For both projects, METRO AG selected key partners from IT and the Consumer Goods Industry. SAP, Intel, IBM, Gillette, Unilever and Coca-Cola were involved in launching these ambitious endeavors. Instead of mandating the use of RFID, METRO worked with its key suppliers to acquire knowledge about this new technology and its benefits. In November 2004, 100 strategic suppliers began tagging at the pallet and case level. By 2006, METRO wants to have more than 250 of its stores on its RFID system.[45]

[45] Hines, Matt (July 2004). "German Retail Giant Opens Test Center to Push RFID", *CNETNews.com published on ZDNetNews.* http://news.zdnet.com/2100-3513_22-5259866.html

The RFID Innovation Center is the laboratory for testing this new technology and its potential future uses and benefits. With this technology, METRO AG hopes to enhance processes in its warehouses and stores. In the RFID center, METRO simulates warehouse activities like sorting of clothes on hangers as well as receiving (the picture shows a portal for incoming and outgoing goods[46]) and picking goods. It also tests potential technologies for in-store activities: for example, the "Virtual Catwalk", where shoppers can view various combinations for an item he or she is trying on. In addition, it explores future personal uses such as the refrigerator of the future that will be able to alert the consumer when important food items are running low.

In the Future Store, some of the technological advances are implemented in real-life conditions. "The future of retailing lies in harnessing the technologies of the future. In the Future Store, these technologies are being integrated for the first time and tested under real-life conditions."[47]

There, shoppers have the option of shopping with a Personal Shopping Assistant. By swiping a store card, the PSA recognizes the shopper and can retrieve a saved shopping list. Customers can scan the items (currently only by barcode) before placing them into the shopping cart. The PSA can thus keep a running total of the grocery bill. Upon checkout, the customer does not have to put the goods on the conveyor; the store clerk can retrieve all of the information from the PSA. In-store terminals provide product information, give health tips and suggest recipes.

[46] "Booklet: METRO Group RFID Innovation Center" <http://www.future-store.org/servlet/PB/-s/1of0eis133juam1a89mmaaccdvb1cnlrdg/menu/1003394_l2/index.html>
[47] "Welcome to the Future Store: A successful start for the future of retailing", p.4. http://www.future-store.org/servlet/PB/-s/1jz4h4f1inx6cz1yc7u3n11eevj1yv1n5y/menu/1000790_l2/1113433771907.html

Due to the large product assortment carried in all of METRO's stores, the shelves are equipped with centrally controlled electronic price tags. "Price changes are automatically and wirelessly sent to the displays".[48] This technology allows for frequent price changes due to promotions and assures that store personnel can make updates quickly and without omitting any SKUs.

METRO AG has been recognized for advancing retailing not only in terms of technology but also in the way grocery retailers handle their material flows. In 2002, METRO Group Logistics (MGL) received the German Logistics Award for its revolutionizing cross-docking concept. Prior to the implementation, stores received shipments from over 1000 service providers contracted by suppliers and had little visibility over incoming freight. By creating MGL as the central body to take on negotiations with carriers and to organize the majority of the direct-to-store goods movements, METRO created a flexible and responsive network of cross-docking platforms, which reduced transportation costs and gave stores visibility to incoming shipments. Outsourcing the transportation portion, but keeping the expertise and strategic level in-house is truly a powerful tool.

4.6 Top Competitors

METRO AG with its various sales divisions competes with numerous companies. Since this paper focuses on food-retailers, it would be out of its scope to name them all. While the worldwide largest competitors are listed in section 3.5, this part will focus on the domestic competition.

The three biggest competitors to METRO AG in Germany are Lidl, Aldi and REWE. All three companies are privately held and do not disclose their financial

[48] "Welcome to the Future Store: A successful start for the future of retailing", p.4. <http://www.future-store.org/servlet/PB/-s/1jz4h4f1inx6cz1yc7u3n11eevj1yv1n5y/menu/1000790_l2/1113433771907.html>

information publicly. The following overview is based on information found in databases and on the companies' websites.

REWE is Germany's second largest food retailer behind METRO AG operating about 11,665 stores in 13 European countries.[49] About two-thirds of its stores are located within Germany. REWE began its operation in 1927, when 17 German food wholesalers joined forces to create the cooperative (the acronym stands for Revisionsverband der Westkauf-Genossenschaften, or the Auditing Association of the Western Purchasing Cooperatives)[50].

Since then, REWE grew primarily through acquisitions and now sells its products under more than 20 names (including Billa, Kafu, and REWE) in various formats such as supermarkets, hypermarkets, home improvement centers, cash & carry (Fegro/Selgros) and department stores (Karstadt Quelle). To diversify its portfolio it acquired a stake in a German media conglomerate and a 40% share of LTU, one of Germany's airlines. Through its network of about 770 travel agencies, it has a large stake in the German tourist industry.

In 2004, REWE Group reported €40.8 billion in total sales (a 1.62% increase from FY2003), only about a fourth of which is generated outside of Germany. 83% of total revenues come from its food-driven business; its travel agencies generated 10% of sales.

Aldi, Europe's leading hard discounters, specializes in a limited assortment of private label product at the lowest price and high quality. Its 5000 retail stores in Europe, the US and Australia offer a no-frills shopping environment displaying products on pallets and in large bins instead of on shelves.[51] To keep prices low, Aldi

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[49] REWE Group: Facts 2004. <http://www.rewe.de/frameset.asp?lang=EN&ebene0=Gruppe&ebene1=REWE%2DGruppe&ebene2=Zahlen+und+Fakten&content=zahlen%5Ffakten133%2Easp>

[50] REWE-Zentral AG. Factiva. Massachusetts Institute of Technology. <http://global.factiva.com.libproxy.mit.edu/en/arch/print_results.asp>

[51] The Company – "What is ALDI?". <http://usa.aldi.com/about_aldi/print_25.html>

offers 85% of its products under a private label, keeps few staff and builds stores and DCs on cheaply acquired land.[52]

Aldi is a privately held company, owned by two brothers who founded the company in 1948. It thus does not have to disclose its earnings. It grew its business organically and now operates stores in 26 US states, Australia and Western Europe. It has not opened stores in Eastern Europe so far. In the US, it also operates stores under the name "Trader Joe's", which Aldi acquired in 1979.

Lidl is Aldi's biggest competitor in Germany, operating about 5,000 deep discount department stores and no-frills supermarkets.[53] About 2,000 of its supermarkets are located in German, making it one of Germany's largest grocery chains. Currently, the company is expanding into Denmark, Hungary, Norway and Slovenia. Emulating Aldi's low cost concept, it limits its assortment to about 800 items, mostly its own brand, and offers a no-frills environment.

In many ways, Lidl seems to have outpaced its local rival. However, like Aldi, Lidl & Schwarz Stiftung is a privately held company and does not disclose its earnings or operational activities, making a comparison based on figures impossible.

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[52] ALDI Group. Factiva. Massachusetts Institute of Technology. <http://global.factiva.com.libproxy.mit.edu/en/cqs/cqs-results.asp>
[53] Lidl & Schwarz Stiftung & Co. KG. Factiva. Massachusetts Institute of Technology. <http://global.factiva.com.libproxy.mit.edu/en/cqs/cqs-results.asp>

5 Specific Supply Chain of METRO Cash & Carry

Thus far, we have analyzed the retail industry and METRO AG's position therein. This chapter studies one particular division, METRO Cash & Carry, the self-serve wholesale division of the company.

There are three reasons for selecting this division. First, because a major portion of METRO AG's revenues and most of its international growth come from it. Second, as this chapter will point out, product flows within Germany, its home market, and in emerging markets are very different. Lastly, METRO Cash & Carry offers a rich model for study because it operates like a retailer, although it is in the wholesale business.

This chapter provides a brief background of METRO Cash & Carry and then dives deep into the organizations operations. First, the supply chain network is analyzed. Special attention is given to the various product flows the division is using. Secondly, we study the organizational structure and the placement of supply chain management within the division and the company's framework. Lastly, the chapter examines various business processes pertaining to the supply and customer side as well as internal business processes such as distribution.

5.1 Background

In 1964, at a time when "traditional home delivery wholesale was no longer capable of meeting the demand of the continuously growing medium-sized businesses"[54] after World War II, Otto Beisheim founded METRO Cash & Carry (MCC) in Germany. It is the original brand of all divisions, which make up today's METRO AG. It first expanded into the Netherlands by signing a partnership with Dutch Steenkolen Handlesvereenigug. Between 1970 and 1996, MCC expanded within Europe by opening stores from Great Britain to Hungary and Poland. Being the first retailer to obtain a license for the countrywide expansion across China, MCC opened its first store in Shanghai in 1996 together with a partner, the Jinjiang Group.

[54] Metro Cash & Carry International: The Company – Background
<http://www.metro-cc.com/servlet/PB/menu/1008080_l2/index.html>

Since then, MCC has rapidly been opening stores in Eastern Europe, Russia and the Far East.

In 1998, METRO AG purchased Makro Self-Serve. Together these brands operate under the umbrella of the METRO Cash & Carry International GmbH, which is the international market leader in self-serve wholesale. It is one of several divisions run as separate legal entities (but wholly owned by METRO AG), which make up the METRO Group. In 2004, MCC operated 114 stores in Germany and 390 in 26 other countries posting revenues of €25.4 billion – 5.4% more than in FY2003. MCC thus constitutes 46.9% of METRO AG's total sales, which in FY2004 was €56.4 billion, a 5.3% increase over FY2003. Over the last 3 years, MCC has posted a 5% average growth in revenues primarily driven by its international expansion. Worldwide, MCC employs 83,000 people.

Figure 10[55] shows the revenue distribution in 2004 by region. 47% of MCC's revenues are generated in Western Europe (excluding Germany), making this its largest market. Germany, the division's home market, generates only 27%, only slightly more than the Eastern European market.

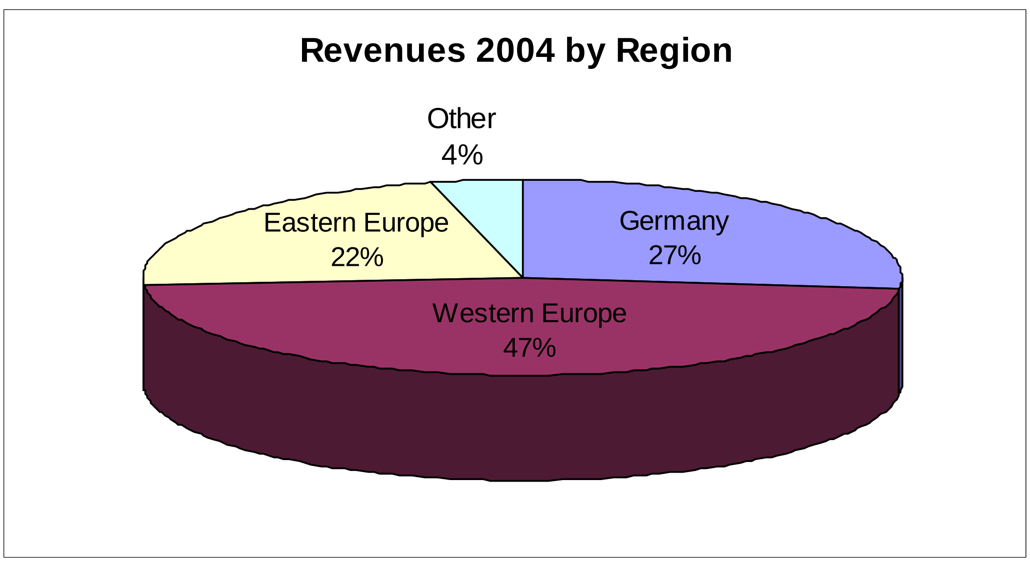

Figure 10 METRO Cash & Carry: Revenues 2004 by Region

55 Metro Group Annual Report 2004. <http://www.metrogroup.de/servlet/PB/menu/1012807_l2/index.html>

MCC faces little competition within the self-serve wholesale business. Neither US-based Club Stores like Sam’s Club (Wal-Mart) or Costco nor European cash & carry stores like Promocash (Carrefour) have a strong foothold in MCC’s current markets. Delivery wholesalers, which deliver goods to their customers, are generally small, local businesses. While they supply 50-60% of the market in France, Germany, Italy and Spain, they are specialized and do not have the size nor reach of MCC.[56] Therefore, MCC’s competitors are hypermarkets and supermarkets as described in section 3.5 and 4.6.

5.2 Operating Model and Supply Chain Network

MCC builds its strategy around the self-serve concept and, therefore, offers its products only through its retail stores. As such, MCC is a single channel retailer. Figure 11 shows the worldwide distribution of METRO Cash & Carry stores as of the end of FY2004. The highest concentration of stores is in Germany, followed by France and Italy. China, where retailers have been focusing their attention, retail locations are mushrooming. MCC operates 23 stores there, which constitutes the highest number of stores among its emerging markets.

[56] Castrillo, Javier; Martinez, Jose Manuel; Messner, Dieter (2003). “ A Wholesale Shift in European Groceries”, *The McKinsey Quarterly*, Number 1

METRO Cash & Carry Stores Per Country (at the end of FY2004)[57]

Austria	12
Belgium	8
Bulgaria	7
China	23
Croatia	3
Czech Republic	11
Denmark	4
France	83
Germany	114
Great Britain	33
Greece	6
Hungary	13
India	2
Italy	42
Japan	2
Marocco	6
Moldavia	1
Poland	21
Portugal	10
Rumania	21
Russia	14
Slovakia	5
Spain	30
The Netherlands	16
Turkey	9
Ukraine	4
Vietnam	4

Figure 11 METRO Cash & Carry: Stores per Country 2004

The brand operates two websites, one for MCC Germany (www.METRO24.de) and one for MCC International (www.metro-cc.com), which provides links to country-specific sites. These websites offer relevant information to local MCC customers regarding current promotions, food safety and the overall product assortment in the local language and in English. However, it is not possible to order from these websites. Order fulfillment takes place only in the stores, also called Distribution Centers due to their layout and size.

[57] Metro Group Annual Report 2004.
<http://www.metrogroup.de/servlet/PB/menu/1012807_l2/index.html

MCC fits perfectly into the expansion strategy of METRO AG. In fact, MCC is the internationalization driver of the company. "It is often the first organized sales format in a country overall because business develops first. MCC acts as a gate opener for the organized food business."[58] Thus, MCC not only creates a market for other sales divisions of METRO AG, but also helps emerging countries to "develop efficient trading structures leading to a considerable improvement in the supply situation of the relevant region"[59]. Prior to entering Romania, for example, small and mid-sized businesses were not able to rely on a consistent supply of perishable goods, which they had to purchase from street traders in congested urbanized areas.

The self-serve wholesale concept translates well into other markets. Due to its focus on commercial customers, it provokes less hostile reaction from local grocers and faces fewer competitors. Because it has a "no-frills" layout, like a DC, the start up costs for a MCC store are less than for a hypermarket and each store realizes economies of scale due to its size.

When opening new stores, MCC makes the strategic decision to enter a new market with one of three store formats, – Classic, Junior, and Eco – which differ in terms of store size and assortment. Classic, the predominant format in Germany, has a selling space of 10,000 to 16,000sqm with the widest product assortment. Junior stores with 7,000 to 9,000sqm are more focused toward fresh food. With 2,500 to 4,000sqm, Eco stores are the smallest in size concentrating predominantly on fresh food items. These stores are mainly found in France.

The company's motto is "from professionals for professionals". Unlike club stores in the US, MCC requires that its members be commercial customers, who usually run small to medium sized businesses like restaurants, service companies, cafeterias, hotels, etc. Its over 20 million customers are categorized in three distinct target groups:

- HORECA: Hotel, Restaurants, Caterers, and Cafés/Bars
- Traders: Kiosks, Small Retailers, Gas Stations, and Drug Stores

[58] Quote from Axel Hopp, Division Manager, Metro Group Buying GmbH, on-site interview, Düsseldorf, Germany, March 22, 2005
[59] Metro Cash & Carry International: Company Background. "Internationalization as a growth engine", <http://www.metro-cc.com/servlet/PB/menu/1008121_l2/index.html>

- Complementary Business Users: Freelancers and Services Companies

Customers select their merchandise at the store, pay at the time of purchase and transport the goods home themselves. MCC does not provide home-delivery services. Large customers may pre-order and pick-up the arranged pallets at the store's dock.

Depending on the size of the store, the product assortment can include up to 20,000 food items and 30,000 non-food items. The range of food products is not only geared to the needs of the respective local customers, but also includes an international assortment to satisfy the needs of minority groups and culinary trends. In Germany for example, stores carry an array of Turkish goods. Non-food items focus on household and office supplies to satisfy the needs of commercial customers. This assortment includes kitchenware, office supplies, electronics, computers, textiles and shoes, furniture, jewelry, toys, and tools[60].

MCC focuses on freshness and bases its success on its differentiated food assortment. Because MCC does not have the costs of a traditional wholesaler (e.g., home-delivery) it can offer a better wholesale price and price-performance ratio to its customers. It also offers products in a wide variety of sizes to appeal to small as well as large customers. Aside from national and international brands, MCC also sells goods under its private label brands "aro" or "Watson", which makes up about 10-15% of the product assortment.

Due to MCC's strategy to offer products geared towards local tastes and to create trust and acceptance in new markets, it sources 80-90% of the product assortment from within the country in which a store is located. In Germany alone, MCC has around 3000 suppliers; each additional country has about 1000 suppliers. Within Europe, the amount of suppliers in each country is higher because large companies like Procter & Gamble and Unilever still do not have one central European contact, but offices in each country.

[60] Metro Cash & Carry Germany – Unser Sortiment (Our Assortment). (Website in German only) <http://www.metro24.de/>

Because of decentralized demand, local sourcing, and variances in product requirements, it makes little sense for MCC to create a centralized supply chain at this time. Thus, its localized network design reflects and supports its strategy of offering various products around the world and sourcing predominantly locally. The network depends on the product type (non-food vs. dry food vs. fresh or frozen food) and local legal requirements (e.g., refrigeration laws). To handle the volume of merchandise required in MCC stores, together with MGL and MDL (now known as METRO Group Logistics Warehousing[61]), the division has developed a unique network of DC's, cross-docking platforms and Third Party Logistics providers.

Within MCC, one has to distinguish between two different flow types: direct from the vendor to the store and indirect from the vendor via a MCC owned facility. Figure **12**[62] depicts these two flow types. About 30% of shipments (based on product value) flow via company owned facilities. Only a small amount, about 10%, of the overall product moved is actually held in a traditional DC. The remainder flows through break-bulk facilities or directly from the vendor to the stores.

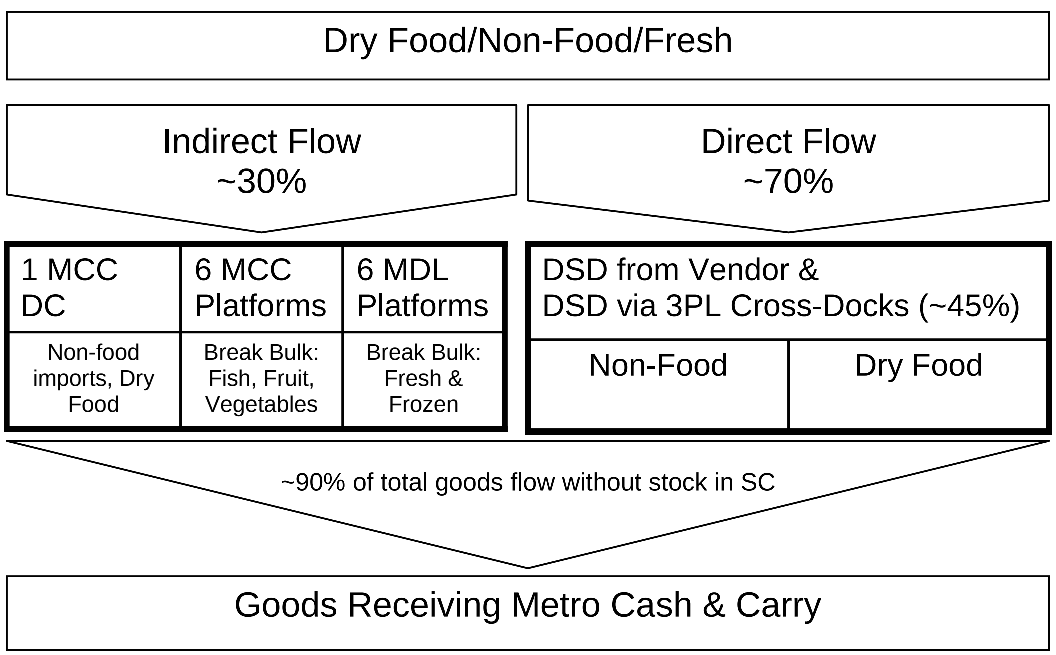

Figure 12 METRO AG: Product Flow

[61] Press Release 2005. "METRO Group intensifies internationalization of its logistics arm", <http://www.metrogroup.de/servlet/PB/menu/1013951_l2/index.html>
[62] Adapted from a presentation provided by Metro Cash & Carry Germany

The indirect flow follows the traditional retail logistics model: the vendor receives orders from the DC or for multiple stores and puts together a combined shipment, which is then either stored in the DC or broken out by store at the break-bulk facilities. Within Germany, for example, MCC owns one DC for non-food items and imported goods, two break-bulk platforms for fish and five platforms for fruits and vegetables. In addition, MCC uses six break-bulk facilities run by MDL for fresh and frozen foods. MCC decided to use this network of break-bulk platforms for fresh food to guarantee freshness and frequent deliveries to the stores. At these platforms, product is checked for quality and allocated by store, but it is never taken into inventory.

On top of this traditional retail network is layered a more flexible Less-Than-Truckload (LTL) network, which METRO AG conceived and designed in Germany. More than 45% of direct-to-store traffic is routed via Third Party Logistics cross-docks, where pre-allocated pallets are combined to one store delivery. METRO Group Logistics (MGL) manages and monitors this "home-grown" LTL network, which is being expanded into other European countries. Because no strong pan-European 3PL exists at this point, MGL works initially with carriers that have the local expertise to develop a national network, which then is connected to other existing national networks by so-called gateway hubs to create international product flow.[63] MGL selects only those carriers, which are the leaders in the region and experts for transportation of specific product types. Within the MGL network, product types segment the flows. MGL contracts different vendors for parcel shipments, palletable food items, palletable non-food items, refrigerated goods and hanging garments[64].

To induce efficiency on the part of the logistics providers and vendors, MGL designed rules by which cross-docks can be circumvented. While the network is set up to route shipments via two cross-docks, 70% of pre-allocated orders pass through only one based on a rule that if a shipment exceeds nine pallets the closest cross-dock

[63] On-site interview with an expert of Metro Group Logistics, Düsseldorf, Germany, on March 23, 2005

[64] Metro MGL Logistics GmbH, (2004). "Innovative Retail Logistics", Presentation by Metro MGL Logistics GmbH.

is skipped. Figure 13[65] visualizes this concept. This LTL network, although common in the US, is revolutionary for Europe and won the German Logistics Prize in 2002.

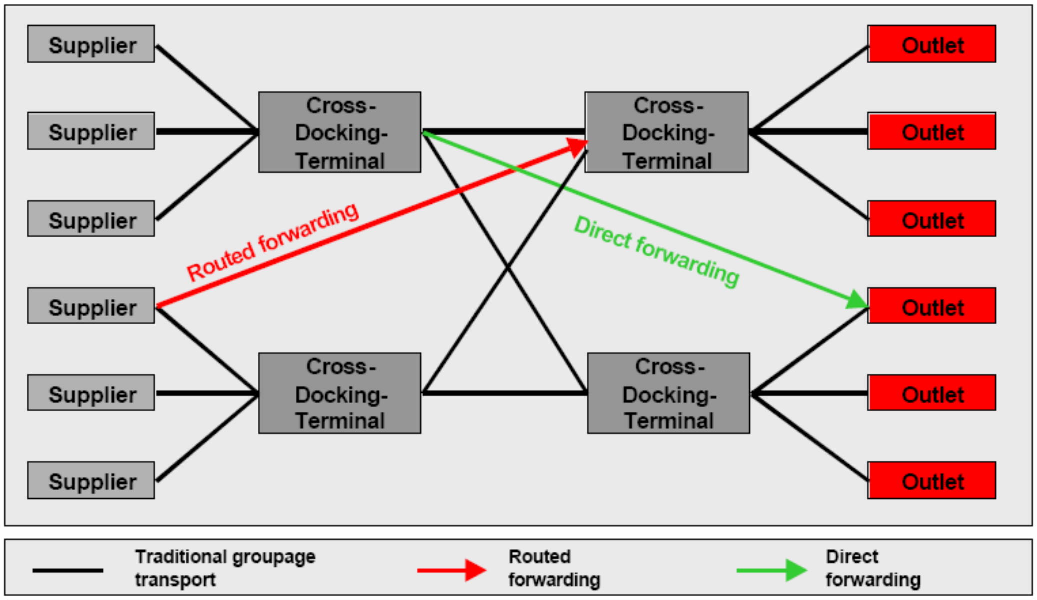

Figure 13 METRO Group Logistics: Cross-Docking

One additional uniqueness about this network is that MGL works with the transportation providers to secure a backhaul. Across sales formats, MGL assists its vendors in finding a backhaul in 80% of the cases. This helps MGL to achieve lower transportation prices across sales divisions, which in turn increases margins.

[65] Metro MGL Logistics GmbH (October 2002). "Innovation Retail Logistics – Total Supply Chain Management by an Internal 4PL", *Metro MGL Logistic* <http://www.metrogroup.de/servlet/PB/show/1004261/QG_Logistikpreis2002-eng.pdf>

5.3 Organizational Structure

The Supply Chain Management (SCM) organization plays a pivotal role within MCC and METRO AG overall. This is apparent by the organizational structure illustrated in Figure 14[66]. A board of five representatives – one from each of the areas depicted below – heads every country in which MCC operates: CEO, HR, Administration, Buying and Operations. This structure is also replicated at Corporate Headquarters in Düsseldorf, Germany, to which all country boards report.

SCM takes a central role between the buying and the store operations organization. As part of the administration department, SCM coordinates the whole cycle from ordering to the shelf. It helps to drive process and systems standardization and works with buyers to determine the best flow for products. Additionally, supply chain management includes in-store functions such as goods receiving, shelf storage and ordering.

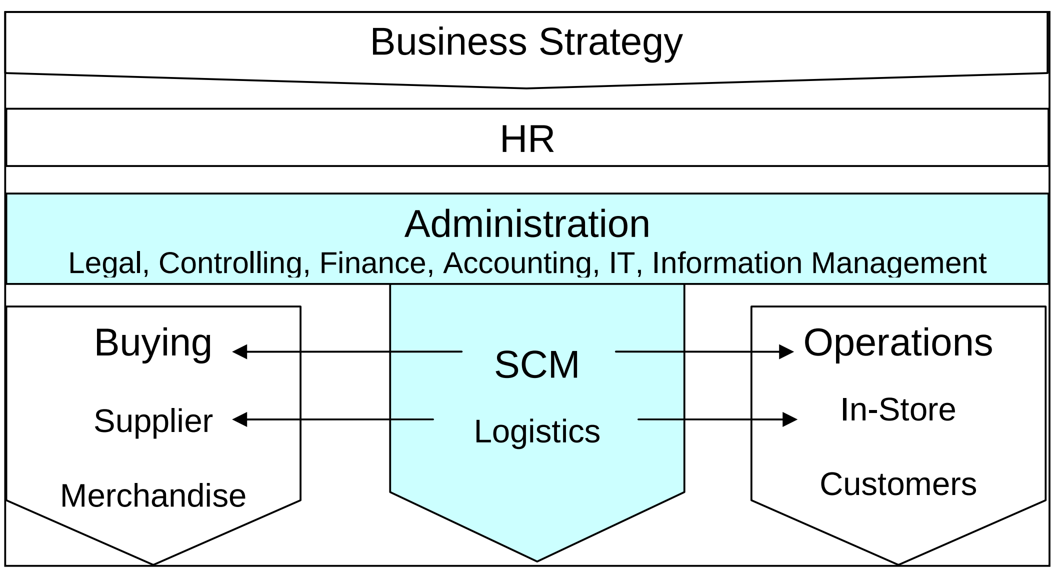

Figure 14 METRO Cash & Carry: Organizational Structure

[66] Adapted from a presentation provided by Metro Cash & Carry Germany

The SCM organization was a vital part in a recent project termed "Operating Model" to create a process road map for the entire company.[67] MCC wanted to develop the necessary knowledge in-house and hired a consulting company to help define the scope. The project described and standardized important processes, which were self-developed by employees. Processes were documented and compared across countries to develop a "best of bread" selection.

However, one year into the project the participants discovered that the systems with which the individual stores were working were not consistent. Based on these findings, the objective of the project was changed to focus first on the alignment of applications before standardizing the supported processes. By the beginning of 2005, five countries had been fully harmonized in terms of their systems. Every year more countries are being integrated into this harmonized system.[68]

As part of this process, the project team also identified all necessary applications necessary to support the sales division. It created a detailed map of existing and missing applications, which will be vital in assisting MCC's operations.

As mentioned previously, additionally to the SCM division within MCC, METRO AG created MGL and MDL to carry out transportation and warehousing functions. These are cross-divisional activities provided to all sales divisions.

5.4 Supply Side Business Processes

MCC has a vast network of suppliers in Germany as well as in all other countries in which MCC operates. It currently works with about 3000 suppliers within Germany and about 1000 in each of the other countries. In general, it does not purchase through other wholesalers, but deals with suppliers directly where law does not require agents.

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[67] On-site interview with Logistics Expert of Metro Cash & Carry Germany, Düsseldorf, Germany, on March 21, 2005

[68] On-site interview with a Manager of Metro Cash & Carry International , Düsseldorf, Germany, on March 23, 2005

Supplier selection depends mainly on the product type: local suppliers are generally chosen for frozen and cooled foods while national and international brands are used to appeal to regional and global tastes. Because MCC does not purchase for global distribution, size of the supplier is less of a concern, especially in emerging markets.

As mentioned previously, over 90% of products are sourced locally to guarantee freshness and the highest quality. Because most of the goods are sourced regionally, the availability of suppliers is a key consideration when entering new markets. MCC wants to offer the lowest wholesale price possible, but while product cost is of importance, it concentrates more on freshness and quality as the key indicators.

As mentioned in section 5.2, the network designed to connect suppliers and MCC stores is built by country based on the regional suppliers. While in Western and Eastern Europe distances are rather short, they can reach up to 1000 km in China. In markets outside of Europe, MCC has not opened any DCs. Products are delivered either directly to the store or via cross-docks. Throughout the entire supply chain, in all markets products flow through different facilities based on their handling and refrigeration requirements. 3PLs are selected based on their existing network and expertise with certain product categories.

Supplier Scorecards have historically been more merchant-driven. In 2005, MCC is rolling out a new scorecard, which includes reliability and on-time performance, service rate, fill rate, turns and stock availability. However, it is difficult to use the same scorecard around the globe since expectations of suppliers may differ slightly. In China and Russia, for example, it makes little sense to hold vendors to 3-hour time windows at the store, because it is often difficult to get the required product at the right quality and quantity at all.

To facilitate the interaction with suppliers, MCC segments them primarily by geography, size and product type:

- Local/National vs. International
- Large vs. Small
- Food vs. Non-Food

In Germany, Hong Kong, Russia, Turkey and Poland, MGB consolidates non-food purchases with large companies and handles import goods, while food purchases are decentralized around the world. Since most international companies are non-food vendors with larger volumes, MGB has strategic alliances with some of them. As is usual in retailing, MCC selects category captains (i.e., one or two important suppliers in each category), with which it aligns itself more strategically.

MCC's product portfolio strategy is clearly differentiation. Buyers handle the product assortment planning within MCC and collaborate with these category captains to develop the appropriate mix by using the 8-step ECR model: definition, role, assessment, performance measures, strategies, tactics, implementation, review. Through this process, MCC can take advantage of manufacturers' experience in the industry.

MCC tries to standardize processes to make supplier management uniform across all countries. At this time, MCC interacts with its suppliers via a web-based application called METROLink, which was created in-house. However, not all suppliers receive the same information. Demand forecasts, for example, are not yet shared with most vendors. While MCC simply shares order data with less strategic vendors, it collaborates closely with others. Category Captains are the highest level of supplier and receive the most detailed information. Via EDI, they obtain full access to sales data and receive important data pertinent to the entire category of goods.

Additionally, GNX's supply chain collaboration tool is used to collaborate with and give analytical functionality to important suppliers, with whom MCC employs CPFR (Collaborative Planning Forecasting and Replenishment). By collaborating with these suppliers, MCC has been able to increase service level, decrease out of stocks, and reduce inventory at the end of promotions. At this time, MCC does not employ other collaboration methods such as VMI at the store level.

Where supplier expertise may not be at the required level, MCC actively supports local farmers, manufacturers and suppliers in developing modern cultivations, production and distribution methods.[69] In India, for example, MCC started a training program for 14,000 local sheep farmers and 1,000 fishermen to train them on animal hygiene and husbandry as well as food processing. Because large shares of perishable goods are still lost to spoilage in India, MCC is passing along its expertise of refrigeration methods and supply chain efficiencies.[70]

In addition to training, MCC develops export knowledge in some suppliers to source goods for other countries. After market entry in India, MCC began exporting US$ 45 million worth of goods in 2002[71] for its stores worldwide. Since 2004, MCC is focusing on agricultural commodities like rice, salt, pepper and honey especially for its European markets.

Due to the sheer size of METRO AG and the amount of SKUs carried across the sales divisions, MGB organizes a yearly sample meeting at which buyers from all sales divisions can look at products. For non-food items, MGB has created an online-catalog, which can be accessed via the Intranet.

10-15% of MCC's products are Private Label. As mentioned previously, private label products are sold under the names "aro" and "Watson". MCC develops these products primarily in what it calls "me-too categories" to compete with discounters and to take advantage of increased margins. Private label development depends heavily on supplier competency. In general, MCC creates private label products in easy to produce canned or dry goods, such as noodles. Within Europe, MCC works with one supplier predominantly. Over the next few years, MCC plans to increase its private label offerings and increase the export quote.

Ordering within MCC varies widely depending on product type. Some food and many non-food purchases are centralized through MGB, whose buyers negotiates with vendors, consolidates purchases in Germany, Russia, Poland and Turkey and sets standards for quality assurance across all sales divisions. Most food purchases are

[69] Metro Cash & Carry International: Company Background – Tastes are different. <http://www.metro-cc.com/servlet/PB/menu/1008084_l2/index.html>
[70] Metro Group Annual Report 2004. <http://www.metrogroup.de/servlet/PB/menu/1012807_l2/index.html>
[71] Executive Briefing (January 2004). "India Retail: Metro Cash & Carry's bumpy ride", *The Economist Intelligence Unit Ltd.*

handled locally to ensure freshness and quality. The stores also order promotional articles directly. For items carried in a DC, the DC places orders based on forecasts.

10-15% of items are purchased via GNX auctions, a business-to-business online marketplace for the retail industry. Auctions are set up with the intention to award business. METRO's e-buying process begins with the internal pooling of demand. The second step is the request for information and thirdly the request for quotation. The process concludes with a reverse auction.[72]

MCC went a step further and was one of the first to take advantage of GNX's CPFR platform with complete data integration functionality, which enables suppliers and retailers to feed data automatically into their ordering and replenishment process. MCC started this implementation in 2002 with strategic vendors like Procter & Gamble, Kimberly-Clark, Colgate Palmolive, Henkel, SCA, Lever-Fabergé and Johnson & Johnson. Benefits became clear after the initial implementation: improved forecast accuracy and reduced store inventory levels[73].

In general, MCC wants to create paperless transactions (via EDI) with all vendors. Current EDI penetration is 90% for orders. However, MCC also wants to integrate electronic invoicing and dispatch notices to avoid manual handling and increase data accuracy. RFID will help drive this paperless environment.

5.5 Inside Business Processes

The amount of SKUs and volume handled within MCC presents tremendous problems for its supply chain. Local demand and the various requirements of the different product types force MCC to manage multiple supply chains. To avoid high fixed costs and long-term investments and to gain more flexibility and scalability, METRO AG made the strategic decision not to open full-scale DCs for all product types and in multiple locations. In Germany, for example, MCC owns and operates only one distribution center, in which product is warehoused. All other company

[72] Beall, Stewart et al. (2003). "The Role of Reverse Auctions in Strategic Sourcing", *CAPS Research* <www.capsresearch.org/publications/ pdfs-public/beall2003es.pdf>
[73] Gisler, Melissa (June 2002). "Metro AG extends CPFR to nine Suppliers, proves scalability of GNX Solution with largest single CPFR implementation", *GlobalNetXchange Press Release*

owned facilities are break-bulk platforms, in which goods are not taken into inventory.

Instead of operating full-scale distribution centers, MCC owns and operates several break-bulk platforms dedicated to specific product categories like fruits & vegetables, fish, fresh and frozen foods to speed up processing and guarantee freshness. Additionally, MCC uses facilities operated by MDL and the 3PL network of MGL. In emerging markets like China and India, MCC, exclusively, uses direct to store or cross-dock operations.

As mentioned previously, inventory is segmented by product type, since products have to travel at different temperatures. Due to the perishable nature of most food products, stores have to be replenished daily. Since almost 90% of total goods flows occur without stock at a DC, replenishments have to be planned carefully and frequently so the stores are not overstocking their backrooms. Close proximity to suppliers' facilities enable this policy. High service levels are necessary to avoid stock-outs.

Which products follow which flow has been determined through years of operation. However, where multiple options for product flow exist (e.g., dry food), buyers insist on holding stock in the DC, or new product is introduced, the supply chain management division of MCC can run adhoc simulations to see how changes in the product flow affect a country's operation.

To avoid long lines at the store docks, MCC schedules 3-hour delivery windows with the stores where this is feasible. As explained earlier, in places like Russia and India where resources and transportation may not be as reliable, it makes little sense to adhere to a strict arrival schedule. As the reliability of suppliers and transportation partners improves, MCC will introduce this practice in the future because it gives stores visibility into arrivals and allows store personnel to be deployed efficiently and effectively.

In Germany, MCC made the strategic decision to keep the transportation from the DC to the store in-house. It, therefore, operates its own fleet of trucks to provide exceptional service to its stores in Germany. These trucks also ensure that recyclable material is returned from the stores to the DC. Backhaul fill-rates are around 60% for recyclables.

To control inventories at the DC level, MCC uses the SuperWarehouse software package from SAF. "SuperWarehouse focuses on the integration of customer demand with the supply chain and the use of advanced forecasting and optimization techniques."[74] MCC can be more customer-focused by integrating store and SKU data into the DC replenishment process. SAF's forecasting system is integrated into SAP Retail, which MCC uses for merchandise planning.

5.6 Customer Side Business Processes

MCC sells products solely through its retail stores. Customers must come to the store to select and pick up the merchandise. MCC offers information on its websites as described in section 5.2. To complement its products it offers several services to its commercial customer base such as longer guarantees beyond those of the manufacturer, short repair times or delivery of electronics and beds. The latter is provided for a fee and includes installation assistance, removal of packaging material and the old equipment. In addition to these rather traditional retail services, MCC also offers registers and telephones for rent and a freezer emergency service, which can be reached seven days a week.

Customers are segmented by the types of products they may purchase:

- HORECA: Hotel, Restaurants, Caterers, and Cafés/Bars
- Traders: Kiosks, Small Retailers, Gas Stations, and Drug Stores
- Complementary Business Users (CBU) : Freelancers and Services Companies

Customers in the HORECA will generally focus on food items while traders might prefer dry-food items in particular. CBUs most likely focus on non-food goods.

MCC employs a sales force, who visits large customers such as restaurants, hospitals and independent retailers and utilizes catalogs and discounts for these

[74] Press Release. SuperWarehouse to Rescue Metro AG.
<http://www.saf-ag.com/presse_events/spiegel_details.asp?id=45>

specific target groups. Through its merchandising system, MCC can offer distinct discount schemes for various customers. Large customers may pre-order quantities and pick up merchandise at the dock of the store. About 5% of sales are full pallet quantity.

Stores are restricted to commercial customers; therefore, stores do not market to personal consumer needs specifically. However, existing members also purchase for their personal use. This makes marketing and creation of the perfect product assortment difficult. MCC, therefore, offers a wide variety of package sizes that would appeal to large restaurants as well as the personal shopper.

In western and eastern Europe, MCC bundles its sales activities by creating regional business units. It thus takes advantage of synergies among the markets. Currently it is focusing its efforts on Spain/Portugal, Czech Republic/Slovakia, Austria/Croatia/Serbia, and Romania/Moldova.

In part, MCC attributes its international success to the recruitment of qualified local personnel. The objective is to hire local citizens to fill all posts from clerks to managers because the division feels that these people know the needs of local customers and their purchasing patterns and will be able to adapt MCC's standardized processes to local requirements. To ensure uniform qualification standards worldwide, MCC takes advantage of four training facilities created by METRO AG in Paris, Shanghai, Düsseldorf and Moscow. These "Houses of Training" educate employees in areas of purchasing and distribution and offer courses on personality development and management skills. This ensures that MCC's distinctive image is maintained worldwide. While it implements its standards across the world if adapts them to the local markets.

Due to their size and product volume, stores are DCs in their own right. The layout is simple and offers a "no-frills" environment. Frozen food drives a high volume of business, but space is limited and replenishments occur rather frequently: three to four times per week. Most dry goods are stored on racks as one might find in a DC. An average sized store has about 3,000 pallet positions. Goods are displayed within reach while higher levels are used as storage. Shelf allocation in this environment is more complex. While shelves hold more products, the amount of SKUs and variety of package sizes creates problems.

One issue, which also drives the Group's investments into RFID, is the "last-mile" from the backroom to the shelf on the sales floor. While the required goods may be located in the backroom, store personnel may not be able to find them due to congestion. Thus, additional orders may be placed or shelves remain empty. Among other things, MCC expects greater visibility into store inventories from RFID.

MCC is currently working on implementing a Stock Location Management System, which one might traditionally find in a warehouse setting. At this point, only gap checks are performed to identify where goods are low and require replenishment. The system checks if more product is on-hand and reorders if necessary.

Reordering is fully automated through SAF SuperStore. Store personnel have only limited options to review orders and make changes. Headquarters decides which orders stores have access. SAF begins by forecasting demand by SKU based on historic information, promotions, price and seasonal information. SAF tracks errors, calculates safety stock at the store level and works with minimum order quantities to determine the optimal order quantity. Orders are electronically sent to almost all vendors. Figure 15[75] shows a SAF order cycle. In the future, MCC hopes to integrate these forecasts into a space planning application to determine the optimal space allocation for products.

[75] SAF SuperStore. <http://www.saf-ag.com/english/products/superstore.asp>

Figure 15 SAF Order Cycle

MCC forecasts at the store and item level and prides itself in high forecast accuracy (70-85%) even for promotional items. Probably due to this fact, MCC does not have policies like VMI (Vendor Managed Inventory) or consignment inventory in place at the store level. To avoid congestion in the back room, stores work with the DC or the vendor to spread promotional shipments out over the promotional period. While for regular merchandise 15 day is the rule of thumb, for promotions, stores generally carry 30 days worth of supply[76]. Due to their short lifecycles, seasonal items are pushed to the stores. This means that stores must cope with large shipments – often the entire forecasted demand for a season – and manage their backrooms appropriately.

The product and thus the product flow determine how vendors receive orders: individual orders from stores or bundled from a DC or MGB. Figure 16 shows how the different flows affect order placement, order preparation at the vendor, DC or Cross-Dock involvement, invoicing processing, and quality checks. Receipts at the store are handled by the merchandising system but are governed by standards established by the supply chain management organization. Long-term, MCC wants to eliminate quality checks at the store. This means more products will flow through

[76] Phone interview with Manager of Metro Group Buying GmbH, March 3, 2005

break-bulk facilities. Additionally, after the implementation of the scorecard, stores will be able to avoid detailed quality checks based on the vendor's score.

	Direct to Store	**Pre-allocated Cross-Docking**	**Break-Bulk Cross-Docking**	**Centralized Stock**
Product Type	Non-food, dry food	Non-food, dry food	Fish, Fresh & Frozen Food, Fruits & Vegetables	Imports, non-food, dry food.
Order Placement	Stores place individual orders when necessary.	Stores order on the same day for a particular supplier.	Stores place individual orders, which are bundled at the CD. Only one PO is sent to the vendor.	MGB or DC places order based on forecasts of multiple stores.
Order Preparation	Vendor prepares order by store.	Vendor prepares orders by store.	Vendor prepares one combined shipment to the CD.	Vendor prepares order by DC.
DC/CD involvement	Shipments circumvent all intermediate facilities.	CD combines all orders for each store.	CD performs quality checks and splits order by store.	DC stores goods and picks per the store order.
Invoice Processing	Each supplier sends one invoice per store.	Each supplier sends one invoice per store.	Each supplier sends one invoice to the CD.	Each supplier sends one invoice per DC.
Quality Check	Detail checking per supplier is necessary at the store level.	Detail checking per supplier is necessary at the store level	No detailed order checking at store level	No detailed order checking at store level

Figure 16 METRO Cash & Carry: Flow Types

Stores accept returns while goods are covered by warranties. On other products, the customer is expected to inspect the product for quality while in the store.

Protection of the environment is viewed as a strategic task as corporate and thus is very important for MCC. Guidelines regarding recycling have been in place since 1997 when the recycling program "Wertstoff Circle Service" (product circle service) was created[77]. At that time, MCC was able to recycle 85% of all waste, of which more than half consisted of paper and cartons. To improve on this successful recycling program, in 2003, METRO AG developed key parameters for energy and water consumption as well as acceptable waste volumes around the world. These parameters are used to benchmark stores around the world.[78]

[77] Metro Cash & Carry Germany – Recyclingkonzept WCS. <http://www.metro24.de>
[78] Metro Group Annual Report 2004. <http://www.metrogroup.de/servlet/PB/menu/1012807_l2/index.html>

6 Framework of METRO Cash & Carry

So far, this thesis has summarized METRO AG's general business background and outlined METRO Cash & Carry's supply chain. The following constitutes an analysis of how key activities mentioned in the previous chapter interlink and complement each other and the overall business strategy. First, this chapter discusses METRO AG's business strategy and operating model. Then, it examines three key activities.

6.1 Business Strategy

"Strategy is creating fit among a company's activities."[79] Competitive advantage arises from deliberately chosen activities that support and enhance each other and deliver a unique mix of value. The following shows how METRO AG successfully employs this framework.

METRO AG wants to utilize excellent processes and technology to be the leader in emerging markets. It tries to achieve these goals by optimizing its portfolio through investments in diverse but complementary sales divisions, which can sustain competitive advantage and exhibit profitable growth. Optimization of the distribution concepts and its portfolio of sales formats as well as the internationalization of the company is what drive this growth strategy.

As a division of METRO AG, METRO Cash & Carry must support the group's overall strategy and goals. METRO AG only gains competitive advantage if it can leverage MCC's competitive strength. Business processes like those mentioned in chapter 5 performed by MCC support the company's strategy and, therefore, make it successful. Figure 17 shows how various activities support METRO AG's strategy of expansion and efficiency and how innovation supports it. While many of these activities support more than one strategic area, for clarity of the graph only few are shown.

[79] Porter, Michael E. (1996). "What is Strategy?", *Harvard Business Review*

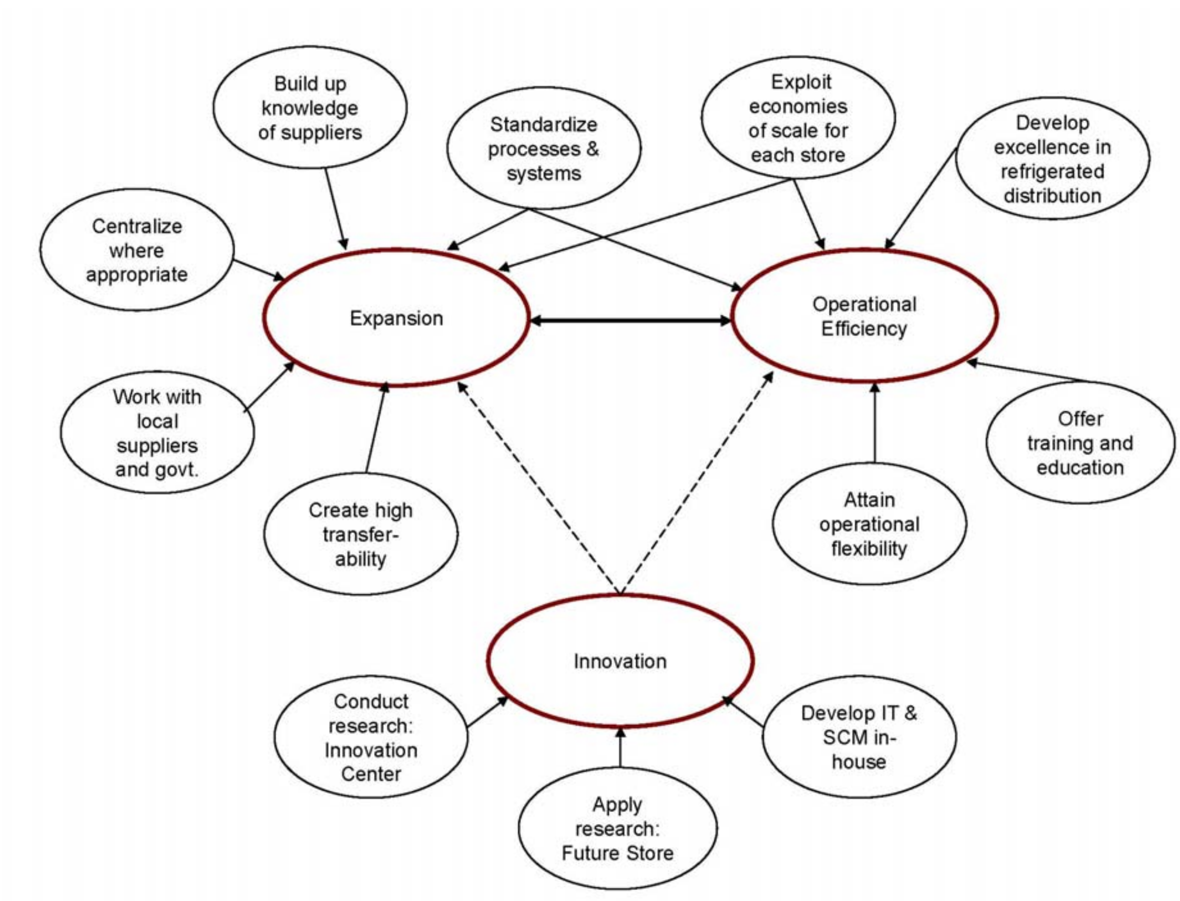

Figure 17 METRO Cash & Carry: Activity Map

METRO Cash & Carry is the sales division with the highest degree of internationalization within METRO AG and drives (along with MGL) the global expansion and optimization of the operation. MCC wants to be the international market leader in self-service wholesale; it tries to achieve this by delivering the best value to customers for the total package of products and services provided by METRO Cash & Carry.

MCC might not always offer the lowest price or carry the lowest risk products, but it aims to offer the best value-based product assortment.[80] The supply chain strategy, therefore, focuses on guaranteeing "systemized freshness and permanent quality

[80] Lapide, Larry; Shen, Ting (2004). "Proceedings of the Supply Chain Project's European Advisory Council Kickoff Meeting", Madrid, Spain, September 8, 2004

controls of all merchandise in every country."[81] As one can see, the focus is distinctly different from Wal-Mart's, which focuses on providing products at the lowest price.

To gain competitive advantage, MCC makes strategic decisions on activities it needs to perform to achieve its objectives. For example, it clearly focuses on commercial customers. Unlike many club stores in the US, MCC does not allow non-business owning customers to attain a membership to its stores. This gives the company a clear focus and allows it to target only specific customer segments. This needs-based positioning defines which tailored sets of activities the company performs to serve this particular customer base best.

6.2 Complementary Operating Model

"A business model should enhance a company's special strengths and core competencies: […] how it leverages the capabilities of suppliers and business partners and earns profits."[82] MCC, therefore, collaborates with its internal and external supply chain partners to create a unique and efficient network, which best serves its customers.

In doing so, it supports and complements the strategy of METRO AG, which focuses on three key areas: operational efficiency, expansion and innovation. In order to support this strategy, the company follows an operating model, with which it attempts to build and maintain an efficient, standardized and harmonized supply chain, in which centralization and standardization are key components.

An efficient, standardized and harmonized supply chain allows MCC to gain operational efficiencies, which it can pass along to its customers as lower prices. This in turn increases its sales at one hand and allows the company to expand quickly internationally on the other hand.

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[81] Wübben, Peter; Jacobsen, Sven; Schäfer, Petra (2004). "Metro Cash & Carry – International Market Leader in Self-Service Wholsale – Business Concept".
[82] Sutcliff, Michael (May 2004). "Creating an Operating Model for High Performance: The Role of Outsourcing", *Accenture: Research & Insights.* http://www.accenture.com/xd/xd.asp?it=enweb&xd=ideas\outlook\pov\pov_role.xml

Through MCC's expansion and growth, it gains new skills and knowledge. This drives process and technology innovation, which is vital to the company's growth strategy. This evolution is essential to support the supply chain over time and sustain the company's operational efficiencies. Figure 18 shows how vital the operating model is for the strategy of METRO AG. While it is not actually part of the business strategy, one should note that it acts as a catalyst for all three areas.

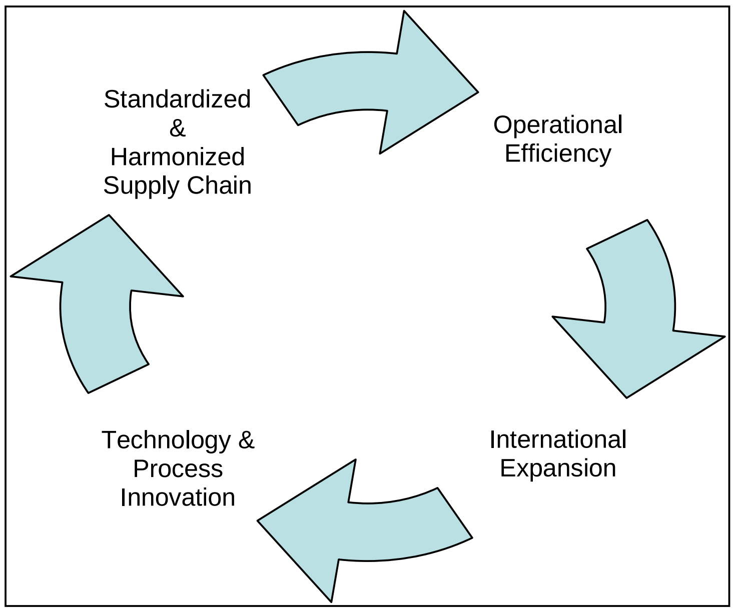

Figure 18 Strategy Loop

6.3 Operational Objectives

The operational model sets clear guidelines for the underlying activities, which have to be performed to achieve the overarching goals of the company overall and the division in particular. As such, it achieves specific, measurable results, which can be evaluated against a balanced set of stated objectives and associated metrics that are consistent with the business strategy. Figure 19[83] shows how companies may focus their objectives: companies that focus exclusively on one of the three areas will fall

[83] Lapide, Larry; Shen, Ting (2004). "Proceedings of the Supply Chain Project's European Advisory Council Kickoff Meeting", Madrid, Spain, September 8, 2004, p.8

into the associated portion of the chart; companies that focus on all three equally, would fall into the middle of the triangle.

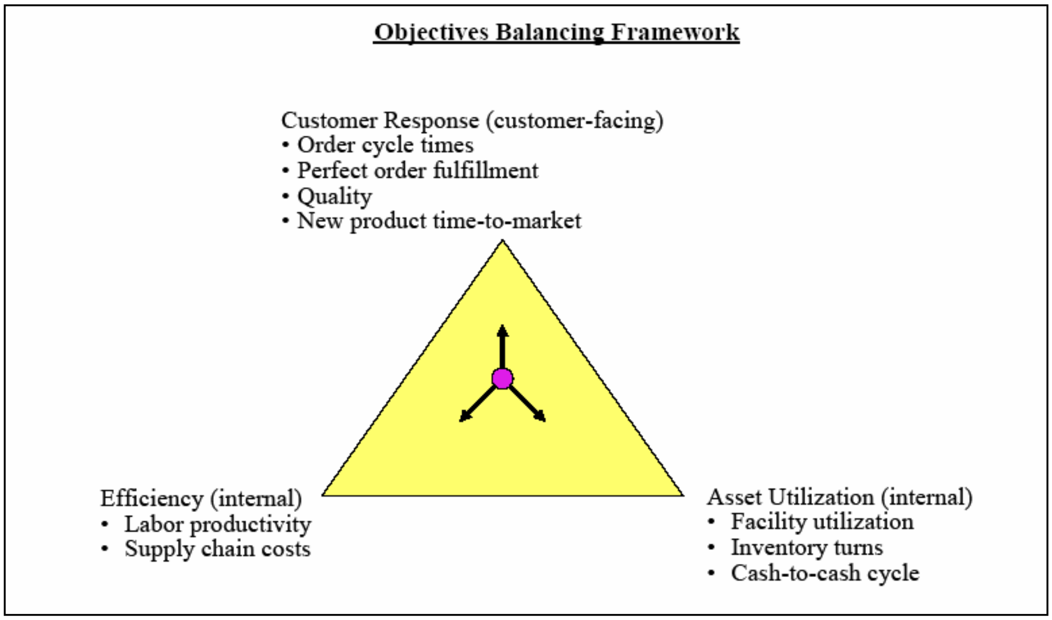

Figure 19 Objective Balancing Framework

The focus varies by industry. Low margin industries such as the grocery industry tend to focus more on operational efficiency to generate additional margin and remain profitable. METRO AG in general, as we will see, falls more between efficiency and customer response due to its simultaneous focus on cost reduction within the supply chain and the quality and brand image it wants to offer its customers.

The company achieves the goals set by the operating model (efficiency, standardization and harmonization) by focusing on three key objectives. To support its rapid internationalization and meet customer requirements, the company coordinates a flexible and scalable supply chain network (efficiency). Secondly, it works to standardize processes and harmonize systems, in order to replicate this system all over the world and provide the same high standards of quality (customer response) globally. Thirdly, to advance the company and gain operational advantage, METRO AG researches new technologies (asset utilization) and through its divisions and with its partners develops new skills and knowledge.

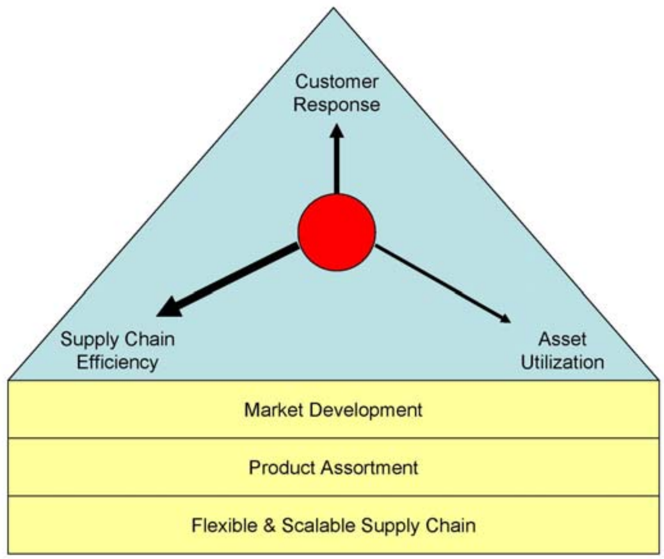

Figure 20 METRO Cash & Carry: Objective Balancing Framework

Figure 20 shows the Balancing Framework for METRO Cash & Carry (arrow size shows relative importance to the strategy; supply chain efficiency, for example, is the most important objective). It early focuses on supply chain efficiencies, due to the low margin business in which it operates. It makes clear trade-offs, however, between asset utilization and customer response. Market development, its local and international product assortment and its flexible and scalable supply chain are the enablers of METRO Cash & Carry's strategy.

6.4 Tailored Business Processes

METRO AG and METRO Cash & Carry perform many activities in support of their strategy and operational model. This section focuses on three key areas: Market Development, Purchasing and Distribution. These processes support not only the operating model, but also the overall strategy. Figure 21 illustrates how these tailored business processes fit into METRO AG's strategy and operating model.

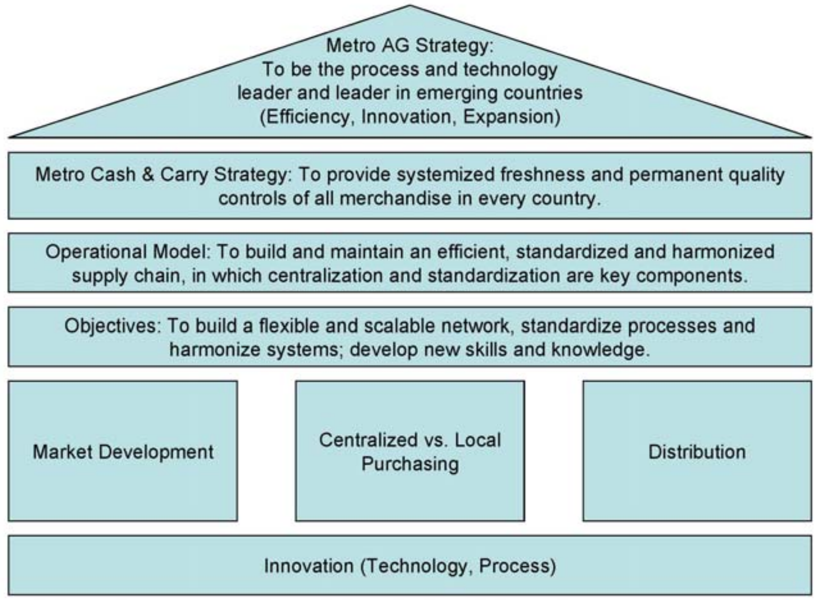

Figure 21 Tailored Business Process Map

Creating synergies and harmony between these activities is what gives the company competitive advantage over its competition. This section also shows that process and technical innovation is the underlying driver, without which these activities and thus the competitive advantage would not be sustainable.

MCC not only creates synergies between the activities, but also within each process. This section points out how MCC creates synergies between centralized and decentralized approaches, which gives it more flexibility and allows it to tailor the processes to local circumstances.

6.4.1 Market Development

METRO AG's expansion strategy arises from the fact that the company faces a mature market in Germany and, therefore, has to enter new markets. This internationalization consciously takes place with METRO Cash & Carry as the driver. As evidenced by the increasing sales figures and continuous growth, this expansion has been greatly successful and fits well with the company's strategy.

METRO AG leads with the METRO Cash & Carry concept to enter untapped markets, which are underdeveloped and inexperienced in modern food distribution. Because a structured food supply chain is important for the development of other businesses like restaurants, bars, smaller retailers, etc. and vital to the tourism industry, MCC gains competitive advantage by being one of the first food-driven retailers in an emerging country.

Entering a new market with the cash & carry format is advantageous because existing local businesses see it as less of a competition. Because MCC collaborates with local suppliers to pass on knowledge and new skills, governments look rather favorably at the establishment of a store. Although this entry strategy may require more initial investment, it enables MCC to quickly establish trust among the local population and creates a brand image. At the same time, MCC can begin sourcing more products at a lower cost, by developing the exporting expertise of these new suppliers.

In addition to supplier development, MCC, as quickly as possible, hires local people for all levels of the local operation. Although this practice may entail the need for change management on MCC’s part and a steep learning curve on the part of the local employees who are unfamiliar with western work ethics and standards, this again builds trust and establishes the company as a local enterprise. This also allows the company to get a better feel for the customers’ tastes and allows it to create a more customized product assortment.

In its effort to create standardized processes, the company looks internally at best practices from around the world. This creates an environment of collaboration and values the best achievements within the company.

To promote the same standards around the world and provide its employees with upward mobility, METRO AG created four training centers around the globe. Through training programs for its employees, it can easily introduce and maintain standardized processes around the world. Thus, it gains not only operational efficiency quickly it also establishes its own quality standards and can reduce the cost for some products throughout its network. At the same time, MCC realizes the strength of a multi-cultural and dynamic environment and leaves room for local differences. This generates a common vision and induces ownership.

MCC gains knowledge of the local market and spreads its standards around the globe by developing its markets. It thus secures control of the quality of its suppliers' products and its brand image.

MCC realizes that an efficient supply chain network must be enhanced by standardized processes and harmonized systems as well as knowledgeable suppliers and employees. This improves not only operational efficiency, but also the brand image. To create one customer-facing picture, quality and service have to be held to same high standards around the world. Therefore, the supply chain division has been working tirelessly to put together procedures, such as receiving or in-store replenishing that can easily be adapted to all markets around the world. MCC's rival, Wal-Mart, who "is still prone to do things the Wal-Mart way without enough consideration to local customs"[84], has had little luck with its German operation. This shows that while standardization is important, being able to leave enough room to adjust for cultural differences is essential and separates this company from others.

6.4.2 Centralized vs. Local Purchasing

The combination of centralization and localization is also apparent in the way the division purchases goods. On the one hand, it centralizes the purchases of imports and dry goods within the subsidiary METRO Group Buying (MGB), which can realize economies of scale and combine purchases from all of METRO AG's divisions. On the other hand, MCC purchases fruits and vegetables as well as fresh and frozen food in the regions, in which the stores are located.

To achieve high market transparency and increase the efficiencies of the buying process for high volume products like imports and dry goods, MGB introduced GNX reverse auctions into the organization. The main advantages of this process as described in section 5.4 are the following. First, because the auctions require certain

[84] Ewing, Jack (April 2005). "Wal-Mart: Struggling in Germany", *Business Week Online*

data, buyers have to prepare detailed information for each auction making purchases more standardized and harmonized across the company.

Secondly, the demand of the organization is pooled, so the suppliers bidding for the order receive higher purchase orders and, therefore, give deeper discounts. Suppliers are also competing with each other for the order, reducing costs even further.

Third, since the auctions are automated, GNX increases the efficiency of negotiations. The company can achieve five to 20 negotiation rounds in 90 minutes.[85] Because purchasers do not have to visit the supplier for each negotiation or spend lots of time on the phone, this allows each buyer to be more effective and devote time to other more strategic tasks. At the same time, employees from various departments may attend the bidding process, because it takes place via the Internet from the purchaser's computer.

While MCC tries to increase the number of SKUs and the purchase volume it acquires via these centralized processes, it understands that local sourcing is necessary and actually beneficial to the company because, as already mentioned, it can establish itself as a local retailer, which supports local businesses.

However, even with decentralized purchasing, the company ensures that appropriate standards and guidelines are in place and followed. In fact, orders placed from the store directly to a vendor are system generated. To ensure the quality of the data and keep transaction costs down, employees have very limited possibilities to override the system.

Accommodating both centralized and local purchases allows MCC to gain cost advantages through reduced product cost on the one hand and reduced transportation cost on the other hand. It also allows the company to handle the various product types with the highest efficiency and with high quality standards in mind. By employing both approaches, it can offer a wider array of local and international products with the highest freshness and quality.

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[85] Beall, Stewart et al. (2003). "The Role of Reverse Auctions in Strategic Sourcing", *CAPS Research* <www.capsresearch.org/publications/ pdfs-public/beall2003es.pdf>

6.4.3 Distribution

Because METRO Cash & Carry operates in an industry with low margins, it must focus on operational efficiency. It does so by reducing variable cost and increasing asset utilization. The amount of SKUs, vast network of MCC stores, and diverse supplier base have to be supported by a flexible and scalable yet adaptable distribution network. It has to be flexible because, due to the large assortment, MCC has to create different processes and flows for its various items. While it centralizes many non-food and dry goods as well as the majority of imports in a traditional DC, it moves fresh goods via its company owned break bulk facilities as described in section 5.2 to ensure the highest quality and absolute freshness as well as frequent replenishment to the stores.

For about 45% (based on product value) of direct to store (DSD) shipments, MCC uses its Third Party Logistics (3PL) network. Instead of investing additional money and resources in distribution centers and carrying lots of inventory, MCC works with 3PLs who are specialized in certain product groups and geographic regions. MCC thus can reduce fixed costs and inventory carrying costs, while gaining flexibility and efficiency.

The supply chain network has to be scalable because as METRO AG adds new stores or expands the assortment, the supply chain has to be able to accommodate that shift. Additionally, it has to be adaptable to new markets. Where 3-hour time windows for arrival at the store make sense in Germany, they may be unachievable in Russia.

While a portion of their supply chain is outsourced, METRO AG also made the strategic decision to keep certain processes in house for now: it still owns and operates bulk-break platforms for fresh and frozen food items. Its objective to develop excellence in cool chain management complements its focus on quality and on fresh food items. It is a clear fit with the objective of delivering value to its customers. MCC clearly makes trade-offs between customer service and asset utilization, since this emphasis on customer response and high quality standards, may lead to lower asset utilization and higher costs than its competition. However, while

MCC may not always offer the cheapest goods, it is able to offer a wide variety of high quality food and non-food products.

6.4.4 Technology and Process Innovation

Standardized processes cannot function without harmonized systems. Therefore, MCC has a large project underway to bring each store and every country onto the same platform. MCC already runs a large data warehouse, which provides everyone with access to the same information for decision-making and analysis.

Without this standardization of processes and harmonization of systems, large-scale expansions would hardly be possible. For METRO Cash & Carry to expand quickly into new markets and act as gate-opener for METRO AG's other business formats it has to build a strong brand image and create customer loyalty. With disparate processes and systems, MCC would be unable to create a single face towards the customer and set the same high standards of quality and customer service.

Many of the innovations, which act as catalyst for METRO AG's growth, come from within the company. Realizing that off-the-shelf software would not suffice for a large-scale retailer like METRO AG, they develop their own software in many areas. For example, the merchandise software (METRO Merchandising System) used as the store application has been developed in-house. These applications are then enhanced and linked by best-of-breed systems purchased from software vendors such as SAF and SAP.

Additionally, METRO AG created an internal Fourth Party Logistics Provider, its wholly owned subsidiary MGL, to create and retain specialized logistics knowledge in-house. It was thus able to develop and implement a unique LTL network within its own walls.

Shelf availability is an important issue, which drives one of METRO AG's newest ventures. It has been testing several cutting-edge innovations such as RFID to improve operational performance, especially in moving goods from the store backroom to the shelf, and further reduce costs. In an effort to gain full insight into the technologies potential and future benefits, METRO AG has assembled a unique team consisting of company personnel, researchers as well as software and consumer goods companies. It also established the Innovation Center, where it tests RFID and tries to improve read-rates and deployment techniques.

The knowledge gained in the Innovation Center is then put to use in the Store of the Future. METRO AG selected one of its Extra stores in rural Germany (about thirty minutes from its headquarters) as a test store for new technology. There RFID is used to monitor shelf space for three brands of products. This tests not only the new equipment and software, but also how personnel and customers react to it. Learning from this real-world test will later facilitate widespread adoption. In addition, to RFID, new technologies like “smart scales” and information terminals are tested to see how they enhance customer service and possibly tie in with RFID and other applications.

While the technology can easily be replicated by its competition, the knowledge the company gains by leading the innovation with its suppliers, stores and experts will differentiate how METRO AG employs and exploits the technology. RFID will provide massive amounts of data; how this data is analyzed and what benefits the companies gain from data will set companies like METRO AG apart. METRO allows even its competitors to tour the RFID Lab, because the company knows that only widespread use of the new technology will allow it to reap the benefits.

By retaining technological and operational innovation in-house, METRO can create systems and techniques that are difficult to copy. Testing and advancing new technologies and collaborating with suppliers instead of handing down mandates create an environment of collaboration and exchange of new ideas, thus increasing barriers to entry and creating competitive advantage.

7 Conclusion

METRO Cash & Carry is uniquely positioned within the retail industry. It is the leading company in the cash and carry concept and part of one of the world's largest retail chains. The company strives to be the thought leader in terms of employing new technologies and reinventing retail logistics. With its strategy of freshness and product variety, it does not follow the Wal-Mart slogan of "everyday low prices", but carves out a market for itself. Local knowledge, operational flexibility and customer focus is what sets METRO Cash & Carry apart from the rest.

While operational efficiency is still a must in the retail industry, due to very low margins, successful supply chains of the future will focus on the customer. While METRO AG does not explicitly state this in its strategy, many of its processes in support of an efficient, standardized and harmonized supply chain result in a better shopping experience for its target customers and establish METRO Cash & Carry as a brand.

Due to its early expansion outside of its home market, its employees have a good feel for other cultures and can reap the benefits of a diverse thought and knowledge base. While market forces oblige it to become more efficient than its competitors are through standardization and harmonization of its processes and systems, being able to adapt these to the unique situations of each country, sets this company apart.

Making trade-offs between centralization and localization, also is a strength of METRO Cash & Carry. Centralization allows the company to gain economies of scale and lower product costs. Locale purchases of fresh food allow it to offer the highest freshness and quality and establish it as a local company.

As Europe moves towards a more unified market in terms of distribution, but remains localized in terms of demand, supply chains have to be flexible and scalable. METRO Cash & Carry is in a unique position to adapt to market changes, due to its flexible and scalable direct to store network. It will be in a better position to reap the benefits of a pan-European distribution network.

Through its close relationship and collaboration with important suppliers, METRO Cash & Carry will be able to adapt to changes in demand quickly and offer products and services customers request. Keeping the company “local” through its employment policy and supplier development also allows it to tap into important local market knowledge.

Local knowledge, operational flexibility and customer focus is what makes METRO Cash & Carry’s supply chain a model for excellence today and gives the division competitive advantage. Based on industry trends these factors continue to be important in retail in the coming years, making Metro Cash & Carry a strong competitor in the future.

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