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## **Collaborative Consolidation Centers:**

### **Exploration of horizontal collaboration as an emerging supply chain trend in the physical distribution network of Procter & Gamble.**

**Public version of report**

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## Preface

The last requirement of my masters Innovation Management was to conduct a research study, which I decided to conduct in a business environment. During the course of my studies I was especially fascinated by the development of products and processes, especially in the form of discontinuous innovation due to the impact these developments can have on an organization. After approaching Procter & Gamble in Brussels I was informed of a logistics sustainability research study and I saw this study as a unique opportunity to learn more about the field of logistics. I was strongly attracted to the organization from the first day I entered.

However after one month on the assignment and a lot of reading and interactions with P&G employees working in physical distribution, I discovered a topic that I considered more suitable as a thesis subject: horizontal collaboration in the supply chain. This was an emerging trend that was not considered at P&G at that time but was already applied by other companies in Fast Moving Consumer (FMCG) Goods. I believed this emerging trend would be a great research topic. For the remaining five months I decided to analyze horizontal collaboration in the supply chain of Western Europe, analyzing the feasibility of increasing distribution efficiency by working together with other FMCG suppliers. It took me at least another month to define my research focus and familiarize myself with how horizontal collaboration can be applied. I decided to focus on the concept of “collaborative consolidation centers”. I soon realized that with my minimal logistics background and ambition to bring innovation to the highly developed supply chain of P&G throughout Western Europe I had challenged myself tremendously. However by continuously setting short term goals for myself, conducting interviews with P&G employees and logistic providers, and traveling to P&G distribution centers I pushed and motivated myself during the five remaining months in Brussels.

The success of my research assignment has been made possible by the flexibility and freedom that Procter & Gamble gave me in my work. For this I am very grateful to my sponsor Sergio Barbarino, understanding the challenges of my thesis but also pushing and challenging me at every meeting to deliver results. Also helping to create awareness within P&G of this emerging supply chain trend and giving me the rare opportunity to present to the lead team of the transport director of Western Europe. Working independently on a research study in a team of logistic experts was a challenging working atmosphere; I simply did not understand the majority of concepts the first month of my internship. For supporting me then and during the rest of my internship I have to thank my daily supervisor Lieven Deketele, he always showed an active interest in my research, regularly gave suggestions on how to structure my work and

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colored the working atmosphere with his strong sense of humor. I also received great support from all the employees in Adrienne Plaisier central outbound logistics team. She adopted me in her team and helped familiarize me with the field of logistics both for my research study and job ambitions. Last but not least, my internship in Brussels was really enjoyable due to the presence to a great number of interns, nice roommates and relaxing coffee breaks with other P&G employees.

Being in another country for a master thesis and finding a balance in the research requirements is not always easy. I especially want to thank my university professors for their flexibility and understanding. Rick Middel who assisted me in structuring my ideas and taking time in his busy schedule to attend my final presentation in Brussels, each meeting and conversation motivated me in my research. Dries Faems really assisted and guided me in structuring the final university report.

When I started my internship in Brussels I thought it was the end of my student period, it however turned out to be a remarkable period both in terms of learning experiences and social events. I am very satisfied with my choice and grateful for the opportunity to be able to work in the pleasant working environment of P&G. I not only had a great time but more importantly I finally found what intrigues me in a job and where my ambitions are for in the future!

Oscar van Lavieren

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## Executive Summary

Procter & Gamble produces, markets and sells leading brands around the world and is known for continuously improving their logistical capabilities and retailer service. For some innovative developments P&G has been able to take a more careful approach due to its scale, being second in the race to the market or second in adopting a process development. This is therefore an introductory research study that explores the trend towards horizontal collaboration in the supply chain and the impact it has on transport efficiency and delivery frequency to the retailer in Western Europe for P&G. This includes the option of potentially working with competitors in the supply chain to compensate for rising transport prices and retailer demands. This study acts as a first building block in building an awareness of this emerging supply chain trend and the possibility of transforming the existing distribution center setup into facilities fit for horizontal collaboration.

For this broad investigation three sub-research questions explored the risks & requirements, areas of interest in Western Europe and general operational impact to analyze the feasibility of implementing this concept in the P&G supply chain. The main research question that was answered is: *For horizontal collaboration in Procter & Gamble's outbound logistics operations what are the key focus points and potential savings that could be created with collaborative consolidation centers?*

This study concludes that horizontal collaboration in the form of collaborative consolidation centers (CCC), which are shared distribution centers to facilitate pooled distribution, offer significant room for improvement in transport (truck fill rate) and retailer service (delivery frequency). The size of the savings differs per country and characteristics of the CCC structure. First a list of conclusions have been made, which support and guide P&G towards transforming their current supply chain setup in the future. The requirements and drivers for a successful horizontal collaboration between FMCG suppliers are:

1. Definition and alignment of goals and performance measurements
2. Definition rules and contractual agreements
3. Selection of suitable partner(s)
4. Creation of a detailed business plan and monitoring progress

The second part was an investigation into transport efficiency and retailer service in Western Europe. Several countries were indicated as main points of interest for a CCC setup. This analysis produced results

that could be explained and related to the supply chain setup of specific countries, the determining supply chain characteristics that define a region to be of interest for a CCC setup are:

1. Consecutive high percentage of monthly part truck load shipments
2. Low average retailer delivery frequency
3. High dispersion and decentralization of retailer distribution centers
4. Relative smaller regional market share with P&G brands
5. Sub-optimal regional DC infrastructure, dependency on other P&G DC's and/ or haulier platforms

Thirdly, based on the results of the second research question this study further calculates the potential impact on one specific region of interest. This indicated significant theoretical transport cost saving on outgoing retailer deliveries on the main product assortment tradelanes of P&G. By combining loads of different FMCG suppliers to create pooled distribution and using cost redistribution methods to compensate for volume shipment differences the price per pallet delivery can be lowered to new levels. These are savings which are not achievable by independent FMCG suppliers because of the tremendous scale advantages through collaboration. Furthermore it would be feasible for P&G to increase the delivery frequency of shipments to the retailer and attain a preferred supplier status at the retailer without increasing cost; therefore facilitating additional promotions, more influence on product shelf placements and roll-outs of new products.

To wrap up, a CCC setup in select regions of the P&G supply chain of Western Europe offers significant room for improvement in transport efficiency and retailer service through horizontal collaboration. Like any development or change in the supply chain there are risks involved. However P&G should now seize the opportunity to further investigate the practical risks of implementing CCC's and search for potential partners before the current setup loses its competitiveness versus other FMCG suppliers that do take part in horizontal collaboration and can answer to more challenging retailer demands.

## Executive Summary (Dutch)

Procter & Gamble staat wereldwijd bekend om het produceren en verkopen van prominente A-merk producten. Het is te zien als een innovatief bedrijf dat constant analyseert naar verbeteringen, dus ook in hun logistieke capaciteiten en retailer service. Met sommige innovatieve ontwikkelingen neemt P&G een afwachtende houding aan, wat mogelijk is vanwege de grootte van de organisatie. Deze studie beoogt daarom een strategische introductie te zijn in het concept van CCC's, creëert een bewustzijn van deze discontinue innovatie en de mogelijkheid tot verbetering voor het transformeren van de bestaande distributiestructuur.

In deze scriptie wordt onderzocht hoe horizontale samenwerking een rol kan spelen in de fysieke distributie van goederen voor P&G in West Europa, dit ter compensatie van stijgende olie prijzen en retailer wensen. De mogelijke gevolgen op de efficiëntie van vrachtwagen ladingen en retailer aflever frequentie worden hierbij in kaart gebracht. Voor dit onderzoek zijn drie ondersteunende onderzoeksvragen geformuleerd. Deze zijn: de risico's & eisen, geschiktheid van regio's in West Europa en algemene operationele veranderingen nodig om de eventuele implementatie van dit concept voor P&G te onderzoeken.

De hoofdonderzoeksvraag die wordt beantwoord is: *For horizontal collaboration in Procter & Gamble's outbound logistics operations what are the key focus points and potential savings that could be created with collaborative consolidation centers?* Deze studie concludeert dat horizontale samenwerking in de vorm van collaborative consolidation centers (CCC), gecombineerde distributie centra die gedeelde distributie faciliteren, significante voordelen kunnen opleveren in transport (mate van volheid vrachtwagen) en retailer service (afleverings frequentie). De mogelijke voordelen verschillen per land en de CCC samenstelling. Ten eerste werd een lijst met conclusies geformuleerd die P&G kan assisteren voor het implementeren van CCC's. De volgende focus punten zijn essentieel voor het succesvol creëren van horizontale samenwerking tussen FMCG leveranciers:

1. Definiëren en gelijktrekken van doelstellingen en prestatie metingen
2. Definiëren van regels en contractuele afspraken
3. Selectie van geschikte partner(s)
4. Uiteenzetting van een gedetailleerd plan van aanpak en waarneembare vooruitgang

Het tweede gedeelte van de studie onderzocht de huidige transport efficiëntie en retailer service in West Europa, deze resultaten werden gerelateerd aan de lokale distributie set-up. Op basis van deze analyse werd bepaald wat de bijpassende supply chain karakteristieken van een regio zijn voor een CCC set-up:

1. Gemiddeld lage belading van vrachtwagens
2. Laag gemiddelde retailer afleverings frequentie
3. Hoge mate van verspreidheid en decentralisatie retailer distributie centra
4. Klein markt aandeel in regio van P&G producten
5. Suboptimale regionale DC infrastructuur, hoge mate van afhankelijkheid van andere P&G DC's en / of haulier platvormen

**Dit onderzoek bepaald de meest aantrekkelijke regio's** in West Europa voor een CCC set-up. De theoretische operationele voordelen van horizontale samenwerking zijn verder geanalyseerd voor de huidige P&G handel routes in één land. Door producten te combineren van FMCG leveranciers op dezelfde levering en een eerlijke kosten verdeelsleutel toe te passen kan de huidige transportprijs per pallet verlaagd worden. Dit creëert besparingen die niet haalbaar zouden zijn voor een onafhankelijke FMCG leverancier vanwege de schaal voordelen die behaald worden door middel van samenwerking. Het tweede grote voordeel is dat P&G de aflevings **frequentie naar retailer DC's zou kunnen verhogen om een** preferent leverancier status te behalen zonder bijkomende kosten; deze status zou extra product promoties, meer invloed op product plaatsing en de introductie van nieuwe producten vereenvoudigen.

Kortom, horizontale samenwerking in een CCC's structuur zou **in specifieke distributie regio's** in West Europa betekenisvolle verbeteringen in transport efficiëntie en retailer service mogelijk maken. Zoals elke **ontwikkeling zijn er risico's aan verbonden, nu heeft P&G** echter nog de kans om de praktische risico's van een CCC implementatie verder te onderzoeken en de zoektocht te starten naar geschikte FMCG partners voor samenwerking. Zo kan het voorkomen dat het huidige model van distributie zijn competitiviteit verliest t.o.v. concurrenten die wel deelnemen in horizontale samenwerkingen en zo hun kosten kunnen verlagen en toch voldoen aan de toenemende eisen van de klanten.