

Madsen, Svend Ole; Mikkelsen, Ole Stegmann

Working Paper

Interactions between HQ and Divisions in a MNC - Some Consequences of IT Implementation on Organizing supply Activities

IME Working Paper, No. 57

Provided in Cooperation with:

Department of Environmental and Business Economics (IME), University of Southern Denmark

Suggested Citation: Madsen, Svend Ole; Mikkelsen, Ole Stegmann (2004) : Interactions between HQ and Divisions in a MNC - Some Consequences of IT Implementation on Organizing supply Activities, IME Working Paper, No. 57, University of Southern Denmark, Department of Environmental and Business Economics (IME), Esbjerg

This Version is available at:

<https://hdl.handle.net/10419/83117>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Interactions between HQ and divisions in a MNC

**- Some consequences of IT implementation on
organizing supply activities**

*Svend Ole Madsen
Ole Stegmann Mikkelsen*

August 2004

All rights reserved. No part of this WORKING PAPER may be used or reproduced in any manner whatsoever without the written permission of IME except in the case of brief quotations embodied in critical articles and reviews.

© University of Southern Denmark, Esbjerg and the authors, 2004

Editor: Eva Roth

Department of Environmental and Business Economics
IME WORKING PAPER 57/04

ISSN 1399-3224

Svend Ole Madsen
Institut for Miljø- og Erhvervsøkonomi
Syddansk Universitet, Esbjerg
Niels Bohrs Vej 9-10
6700 Esbjerg
Tlf.: +45 6550 1512
Fax: +45 6550 1091
E-mail: som@sam.sdu.dk

Ole Stegmann Mikkelsen
Danfoss A/S
Nordborgvej 81
6430 Nordborg
Phone: +45 7488 5545
Fax: +45 7488 5717
E-mail: osm@danfoss.com

Abstract

This article focuses *partly* on the interaction between a company headquarter and the divisions and *partly* on how new IT technologies can influence this process. Specifically, the influence of a newly developed Data Warehouse system organization of supply is investigated. Based on earlier perspectives, such as core competence and portfolio perspectives, the interactions are examined, and a third perspective, in which elements of the two are coordinated and integrated, is introduced. Based on a single case study of Danfoss A/S, the new IT opportunities are then used to illustrate the implications on the organisation of purchasing activities.

Key words: Strategic purchasing, multinational companies (MNCs), Information, Communication and Technology (ICT), organisational development.

Table of contents

Introduction and problem background	7
The case	9
Sourcing goals, strategy and means.....	10
The development of a corporate purchasing data warehouse	12
Preliminary results and further challenges.....	14
How can the <i>organizing</i> of purchasing activities be understood as an integrated part of the strategic development of a MNC?.....	15
How can the implementation of a Data Warehouse system contribute to new ways of <i>managing</i> the purchasing activities?	18
The Danfoss case in perspective.....	20
How can changes in the strategic organisation of the purchasing activities be seen as a result of the <i>implementation</i> of an ICT system?.....	22
Conclusions.....	26
References.....	28

Introduction and problem background

The interactions between a parent company and the individual divisions are of a complex nature. Some parent companies are, through influencing the divisions, able to create value that which exceeds the sum of contributions of the individual divisions (Campbell *et al.*, 1995). However, the overall message from these writers, who for many years have examined how the relations between parent companies and subsidiaries impact value creation, is that “*many corporate parent companies destroy value. Businesses in corporate portfolios would, often, be better off as independent companies or as part of other corporate portfolios*” (Campbell *et al.*, 1995:79). The authors state four interacting conditions by which the HQ can influence the value creation *negatively*.

- Influencing the individual divisional strategic development - ignorant of all relevant circumstances.
- Establishment and preservation of horizontal relations between divisions in order to force economies of scale.
- Establishment of central service functions often causes value creation to be undermined rather than enhanced.
- Central initiatives for the strategic development of the company (acquisitions, alliances, new product developments etc.) often do not have the desired effect.

Hence the pitfalls and difficulties are many when trying to carry through coordinated developments on the corporate level. Campbell *et al.* (1995:85) put up 3 conditions that enhance value creation:

- First of all there has to be a situation, which both parties agree promises a positive development.
- Next, it is essential that the mother company has a large insight into and understanding of the specific conditions of the individual divisions.

- Finally, in order to realise the potential opportunity, competence and resources have to be available on the corporate level.

Hence, forces that drag the organisational activities in different directions exist. The easiest thing to do for corporate management would be to evaluate the divisional performance from a purely financial point of view, i.e. apply a bottom line approach (Goold, 1991:69). Goold further stresses that the sustainable ability to create profit and competitive advantage requires that corporate management and divisions enter into a dialogue about the strategic direction and development. In the same vein Markides & Williamson (1996) emphasise that the performance of the individual division will be enhanced if the division, in cooperation with other divisions, can gain access to more favourable conditions supporting either the cost position or the position of differentiation. John & Harrison (1999:131) further address the degree of cooperation, pointing out that the *cost of coordination* has a significant influence on the achievements of the effects of synergy.

However, within the last few years, the striking and invariable development within the ICT area has radically influenced the opportunities for minimising the coordination costs. The systematic coupling and structuring of enormous, until now incalculable, amounts of information, has provided new and strategic knowledge contributing to changed relations between headquarter, divisions and external partners. E.g. a corporate Data Warehouse has coordinating characteristics that open up opportunities for new analysis and coordination methods that may restructure the value chain of a company.

From a theoretical point of view, diverging opinions exist on how the interaction between the corporate parent and divisions are most suitably designed. In this paper the intention is to analyse how an ICT system (e.g. Data Warehouse system) can influence the relations between divisions and a corporate headquarter in terms of organising purchasing activities.

The *level of ambition* for this paper is to achieve a theoretical understanding of and insight into the empirical development of different forms of purchasing (figure 1). The consequences of the implementations are investigated based on a developed framework.

More specifically we will investigate the following areas:

- How can the *organizing* of purchasing activities be understood as an integrated part of the strategic development of a MNC?
- How can the implementation of a Data Warehouse system contribute to new ways of *managing* the purchasing activities?
- How can changes in the strategic organisation of the purchasing activities be seen as a result of *implementation* of an ICT system?

The case

The empirical foundation of this paper is a single-case study of Danfoss, one of the largest companies in Denmark. Founded in 1933 the company was, until 1971 characterised as a *centralised* organisation with an increasing degree of formalisation during the period. In 1971 Danfoss was split up in three *product groups* with a set of common corporate functions, among these, a central purchasing department. This was the first tendency towards decentralisation, however purchasing was not decentralized. In order to increase competitiveness the company further decentralised through a *divisional structure* in the late 1980s. Today the company consists of 13 product divisions, 53 factories, more than 40 purchasing units and it employ about 17500 people around the world. In principle the divisions are autonomous and independent, but have recently been grouped into 3 main segments, Refrigeration and Air Conditioning, Heating and Water, and Motion Controls. Each segment is headed by a Segment President.

Sourcing goals, strategy and means

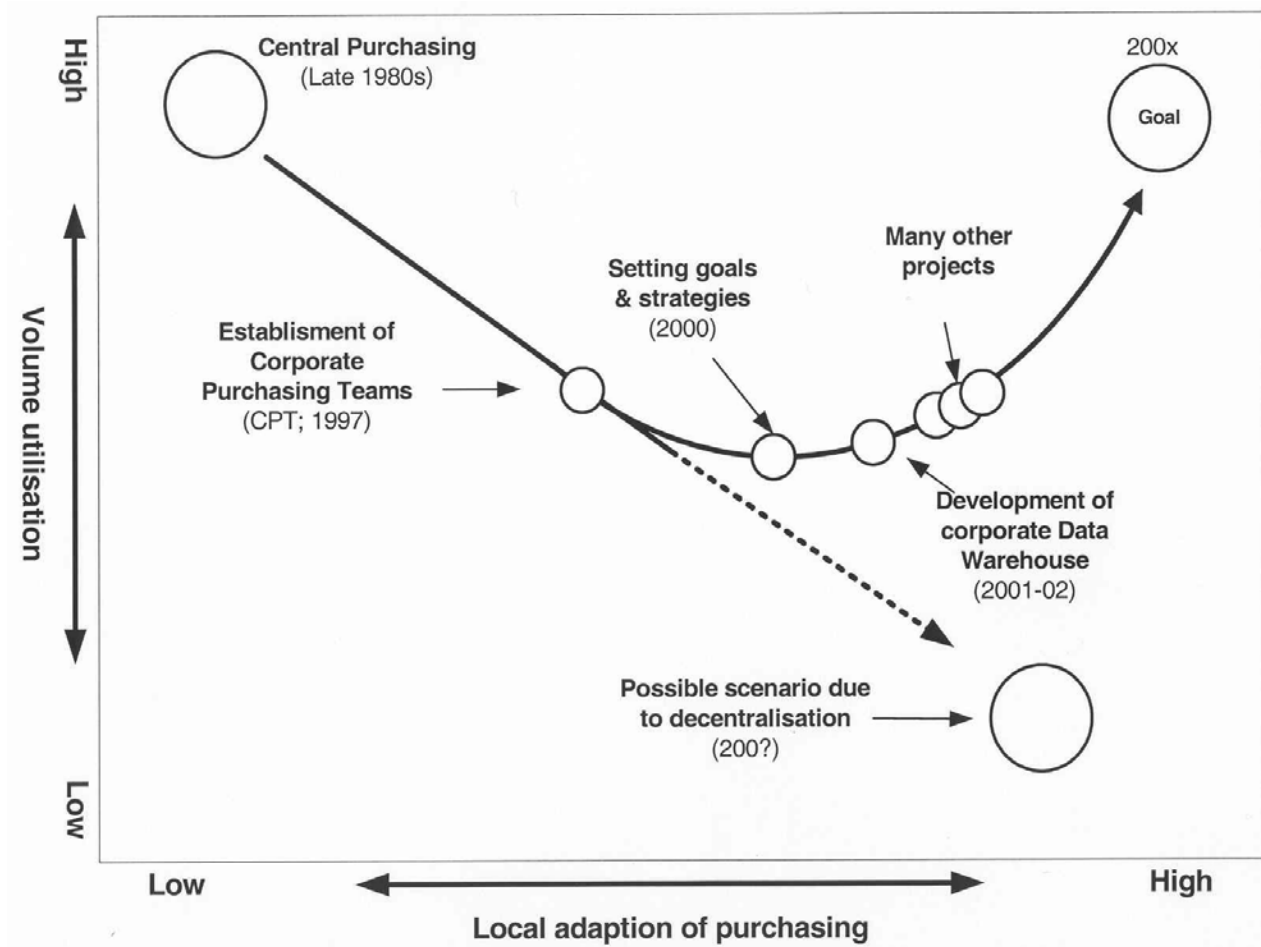
Simultaneously with the decentralising in late 1980s, purchasing was decentralised as well. All purchasing activities were deployed to divisions with the responsibilities now also encompassing the purchase of raw materials and semi-manufactured goods. This decentralisation took place in order to have the purchasing decisions closer to the internal customers and thereby obtain better adoption to local conditions.

In the early 1990s the informal network among divisional purchasing people worked well, despite the formal separation. However, over time, the advantages of volume became more and more accidental, due to the fact that new purchasing people were employed, others changed jobs and new companies were acquired. The development can be illustrated as shown in figure 1.

In order to counteract this negative development the Corporate Purchasing Committee (CPC) was established, consisting of a senior purchasing executive from each division and headed by the COO. The committee identifies and coordinates the strategic purchasing goals and activities on corporate level. In 1997 the committee established a set of cross-divisional Corporate Purchasing Teams (CPT) with the task of coordinating the sourcing of chosen material groups. The teams consist of the most influential purchasing professionals from the 13 divisions. In order to ensure impact, the chairman of each team is also a member of the committee (CPC). Today 8 teams exist, e.g. Plastics, Electronics and Castings. The coordination of the divisional sourcing and purchasing is now more and more often carried through a traditional matrix structure (see e.g. Burton & Obel, 1998). In other words, a process of centralisation was started. This tendency, with the pendulum shifting from business unit independence, towards coordinated processes, is also observed in many other companies (Rozemeijer, 2000).

The development can be described as follows.

Figure 1. The development in organising purchasing activities with Danfoss A/S



Source: Own development.

The figure illustrates the influence of the process of decentralisation on the originally central sourcing activities. The negative consequences are rectified by organisational initiatives and by developing a new IT system (Data Warehouse). From the middle and to the end of 2000 extra focus was set on the process, as CPC, in dialogue with top management, set some ambitious goals and strategies. The goals set to be attained in the years 2001 until 2003 (inclusive) are, among other things:

- 5% annual price reductions by common agreements and consolidating volume. The goal is to contribute with € 40 million in net yield within the 3 years.
- The number of suppliers is to be reduced to ¼ on the corporate level.
- Categorising/segmentation of the remaining suppliers.
- A number of partnership and other strategic agreements across more divisions.

The main strategies are to concentrate on fewer suppliers in each commodity area, and by global volume consolidation, increase purchasing power. Likewise a standardisation of commodities and processes are in focus.

With more than 40 local purchasing units, having a locally focused culture, such coordination is a large and complex task, and two full time coordinators/consultants are employed. In order to support the strategies 180 purchasing people from all over the world have taken the Danfoss Strategic Purchasing Program.

The goals are broken down to the individual purchasing teams (CPT), which develop strategies to capture own goals. The chairman of each team reports to the committee at quarterly meetings.

The development of a corporate purchasing data warehouse

A necessary but not sufficient condition in order to realise the mentioned goals, is easy access to valid data on the global spend within the different commodities. At the end of 2000 it was therefore decided to develop and implement a decision and monitoring tool, a purchasing data warehouse, to be used to extract and consolidate purchasing data from the different ERP systems in the divisions. As a consequence of the many acquisitions during the years, there are more than 15 different local platforms (SAP, Navision, J.D.Edwards etc.). Furthermore, many different material grouping and naming standards exist, indicating a “non-trivial” project. Among other things a corporate commodity classifi-

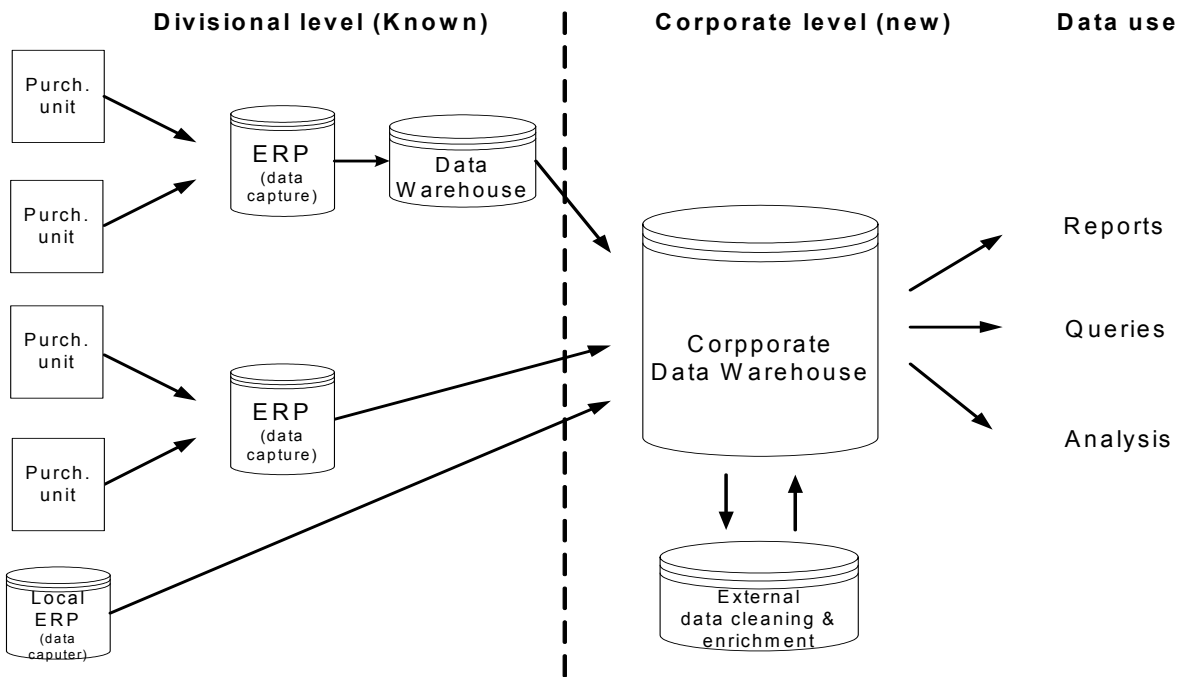
cation system has been developed. The local commodities are mapped and linked to the corporate system.

The supplier master data structure and the numbering systems are also different in the local ERP systems. Hence one and the same supplier can appear under different names in the different systems. Danfoss has experienced that multiple sets of supplier data from the different systems are in reality information about the same single supplier. Consolidating, e.g., spend per supplier would therefore demand problematic manual cleaning of the data sets. This is why Danfoss has joined up with an external partner, who specialises in cleaning and enriching supplier data and assigns each *real* supplier, a unique identification number. This has created a trustworthier picture of the cooperative trade, the relationship, significance and complexity between Danfoss and the suppliers. Such transparency in trade also promotes the quality of the dialogue with the suppliers.

As the data warehouse technology has earlier been applied to a single ERP system, the application to more independent, and different, ERP systems is relatively new. However, the application across different systems in the organisation promises a more coordinated effort. Data on purchasing spend and transactions are captured from the different local ERP systems at divisional or site level, where after they are structured, consolidated and presented in the Data Warehouse.

Just a few years ago the collection and consolidation of such data was only possible with a large manual effort within the purchasing teams. The Data Warehouse helps the goals and strategies to be followed more closely and ambitiously. A set of reports and queries are developed in order to be able to follow the development in goals and strategies at team, divisional and corporate levels. An outline of the Data Warehouse is shown in figure 2.

Figure 2. Outline of data collection in corporate Data Warehouse



Source: Own development.

Hence, the newly developed data warehouse system is a significant tool to reduce the negative consequences of the decentralisation (figure 1).

Preliminary results and further challenges

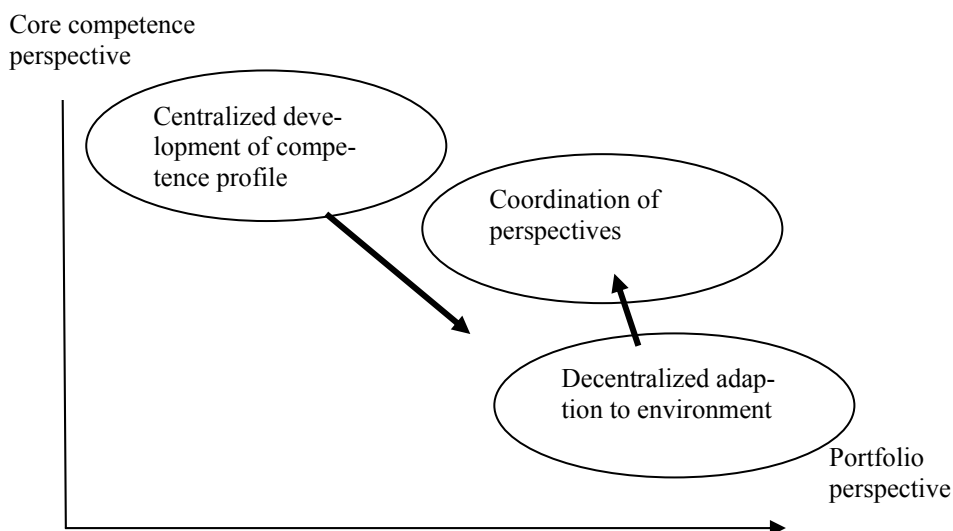
The goals and strategies are now carrying out. As an example, 8 suppliers of enamelled copper wire were reduced to 2 regional suppliers (America & Europe) giving a 15% price reductions. In 2001 a total of €12.5 million in savings was captured (Danfoss News, 04/2002).

The preliminary results compared with the stated goals and strategies have also meant that purchasing as a profession and process within the company now receives a great deal of attention at all levels in the company. For instance, progress is reported upon at the quarterly meetings of the board of directors.

How can the *organizing* of purchasing activities be understood as an integrated part of the strategic development of a MNC?

In the following sections the three areas in questions will be analysed from both a theoretical perspective and from the presented empirical basis. Each of the sections ends with a conclusion. All MNCs must decide on the most appropriate way of utilising the competencies of the divisions. The fundamental question is whether a core competence perspective, emphasising *exploitation* of internal advantages, should be adopted or whether the focus should be on a decentralized development where *adaptation* is central. Wit & Meyer (1998) put these possibilities as alternatives. Burgelman & Doz (2001) seek to solve this paradoxical problem by introducing a new kind of strategic integration, which is Complex Strategic Integration (the CSI strategy), where there is co-ordination regarding the exploitation of internal qualifications and external market possibilities. It will be argued that the case can be put into perspective by connecting the above-mentioned theoretical contributions to the figure below (figure 3).

Figure 3. *Corporate strategies as an interaction between the core competence and the portfolio perspective*



Source: Inspired by Burgelman & Doz (2001) and Wit & Meyer (1998).

If the strategic development is understood from the existing core areas (the *core competence perspective* - Prahalad & Hamel, 1990), the resource base can be defined as a common pool from which the divisions can draw. The more the common competencies are used and leveraged, the better the perception of the strategic position will be. A key success factor therefore is mutual competence exploitation between the divisions (Wit & Meyer, 1998:416). It is a condition that the Centre is supplied with considerable resources to realise the internal synergy effects (Markides & Williamson, 1996:342, Chandler, 1991:40, Hamel & Prahalad, 1993). The focus on the internal advantages means that the adaptation and exploitation of the new market possibilities is perceived as limited. The strategic objective of the Centre in this perspective is, therefore, to try to exploit the competencies of the integrated divisions optimally to create synergies among these. Therefore, introvert activities and the development and utilization of competencies will be in focus.

From the case description it can be seen that this kind of cooperation prevailed until the end of the 1980s when the internal economies of scale were attempted to be obtained through a centrally based buying function (see figure 1).

The *portfolio perspective* is characterized by being focused more towards the market possibilities than creating internal synergies (The “Outside – in” perspective” see e.g. Day, 1994, Campbell *et al.*, 1995). In this perspective the divisions are seen as a “collection of shareholdings” (Wit & Meyer, 1998), where financial performance is crucial. The central task of the Centre is to put together the divisions in such a way that there is a natural balance between the developments of divisions, maturing and dismantling (Hedley, 1977). The focus on the external conditions combined with the decentralized management of the divisions means that the other divisions are seen more as competitors rather than collaborators, for which reason possibilities for an effective exploitation of common resources are modest. Realization of external possibilities (acquisitions of new companies, development of products/markets etc.) is central for the autonomous divisions.

In the case study this kind of collaboration was introduced in the end of the 1980s as a consequence of the divisionalization. The previous central knowledge of suppliers, purchasing methods etc. was subsequently distributed to independent, decentralized purchasing units. Informal knowledge distribution between former colleagues contributed, for a period of time, to maintaining certain economies of scale when arranging the purchases, cf. the description of the case. However, the scenario of (almost) no economies of scale seems to be inexpedient (see figure 1) in spite of optimal adaptation and exploitation of the environment.

The third possibility – the CSI perspective – seems to be the most interesting. In this situation maximum effects of synergies are attempted, while adaptation to external conditions is completed in the best way (Burgelman & Doz, 2001). In this way it is thus possible to “discover and create new business opportunities that combine resources from multiple units within the company” (Burgelman & Doz, 2001, p. 30). The close dialogue with a few major partners is important in the amendment process (see case description). To realize the new dialogue form it is necessary to systematize the internal, explicit knowledge through the new Data Warehouse system. The new knowledge plays a central role in the realization of the target of reducing the costs with € 40 million by 2004. As it is a question of volume consolidation, the new purchase form is supposed only to have a minor influence on the degree of local market adaptation, while considerable economies of scale are expected to be realized. The three types of cooperation are illustrated in figure 3.

As a part of the conclusion it can be stated that the empirical development in figure 1 can be explained in light of various perspectives of the strategic development of the MNC.

In the following sections various management aspects of the three cooperative forms will be illustrated, and the meaning of the Data Warehouse concept/tool will be emphasized.

How can the implementation of a Data Warehouse system contribute to new ways of *managing* the purchasing activities?

Inspired by Goold & Campbell (1987), Chandler (1991) has contributed to the understanding of the theoretic connection between divisions and centres. His typology describes companies in three groups that can be related to the three forms of cooperation in figure 3. The division is made in the light of the concept of “overlap” (Goold & Campbell, 1987), while others use the concept of “relatedness” (see e.g. John & Harrison, 1999). Both definitions focus on the degree of mutual interdependence between divisions.

In the core competence perspective the total amount of resources are, in principle, regarded as a pool from which the divisions can draw. The degree of “overlap” will therefore be considerable. In contrast the resources in the portfolio perspective will be characterized as being division specific, for which reason “overlap” is minimal. In the “complex strategic integration”, “overlap” is characterized as moderate, as there will be both common and division specific resources.

The introduction of the Data Warehouse system can – as previously mentioned – contribute to minimizing the long-term coordination costs and therefore can be understood as having “a potential for synergies” (Goold & Campbell, 1987, p. 48), and hence, the potential to contribute to the future development of “complex strategic integration” in the purchasing area. Thus, the Data Warehouse system can contribute to the development of new ways of organising the purchasing activities.

The following table can be set up:

Table 1. Strategic control in the 3 types of co-operation

	Detailed Control	Financial Control	Coordinated Strategic Control
Corporate strategy (related to figure 3)	Core competence perspective	Portfolio perspective	Complex Strategic Integration perspective
Mutual interdivisional dependency ("Overlap")	High	Low	Moderate
Size of Centre	Large	Small	Medium – large
Purchasing Organisation	Centralised	Decentralised	Center-Lead
Control mechanisms			
- Budgets	Weak	Strong	Moderate
- Strategic plans and reporting	Strong	None	Dialogue
Responsibility for strategic development	Centre	Divisions	Interaction between Divisions and Centre
IT	Centralised	Decentralised	Distributed
Knowledge pool	Centralised	Decentralised	Distributed

Source: Inspired by Chandler (1991).

According to Chandler (1991), various consequences are connected to a development towards “coordinated strategic control”. First one can expect that the size of the Centre will grow. As pointed out in the introduction, Campbell *et al.* (1995:85) emphasize that it is important that competencies and resources are available at the corporate level, so that potential synergies can be realised. The size of the centre will grow in the transition process from a portfolio perspective to the CSI perspective. The increased resources are spent on coordinating

the purchasing activities. In this process the Data Warehouse system as a distributed IT-system is central.

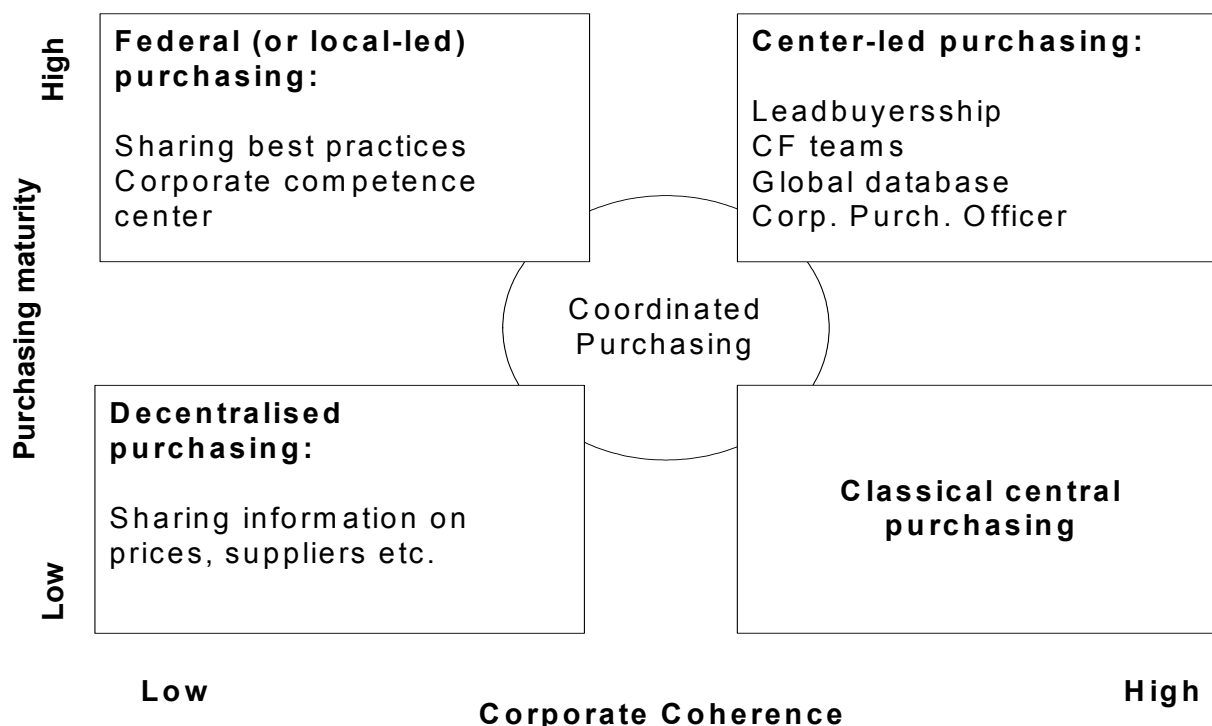
To fully understand the meaning of this system it seems to be relevant to extend Chandler's characterization of the three types of cooperation with the different kinds of knowledge forms. In the original cooperation perspective (the core competence perspective) the knowledge stock is characterized as being a combination of explicit and implicit knowledge and it is the central purchasing function that possesses the relevant knowledge (see e.g. Nonaka & Takeuchi, 1995). By changing to a divisionalized form, the implicit knowledge will be reduced over time (turnover of staff members, buying of new firms, rotation etc.) with the consequence that the total knowledge stock about external partners is not optimal. By implementing the Data Warehouse system new knowledge is generated through a process in which existing, explicit knowledge is combined and new explicit knowledge arises at a corporate level (Nonaka & Takeuchi, 1995). In this situation the knowledge stock can therefore be characterized as distributed, as it is partly at a central and partly at a decentralized level.

As a part of the conclusion it is therefore pointed out that table 1 above summarizes the theoretic framework of the empirical basis as it, in addition to Chandler's (1991) considerations, contains the three kinds of cooperation from figure 3 and the characterization of the knowledge stock.

The Danfoss case in perspective

As stated earlier, the pendulum is shifting towards more coordinated processes within purchasing in Danfoss. Rozemeijer (2000) and Rozemeijer *et. al.* (2003) have put forward a framework for understanding how multi site companies have organised their purchasing activities. The framework is based on the two dimensions, purchasing maturity (the level of professionalism in purchasing) and corporate coherence (level of clear corporate strategies, structure, culture and trust), figure 4.

Figure 4. Organisational approaches in corporate purchasing



Source: Adapted from Rozemeijer (2000) and Rozemeijer *et al.* (2003).

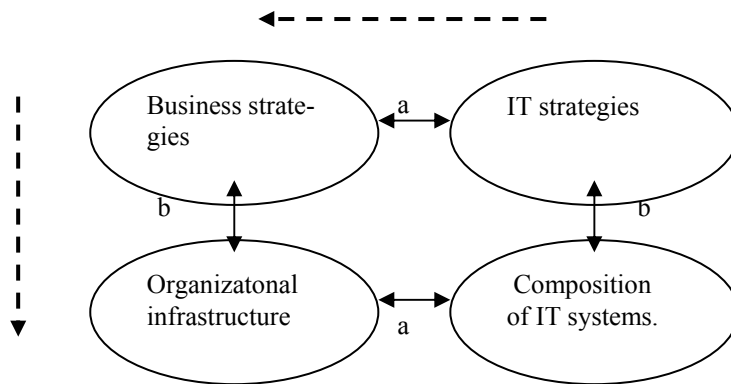
By using the model in a more dynamic perspective it provides the means to understand the development in purchasing activities within Danfoss, and undoubtedly many other companies, from late 1980s until today. Up to late 1980s purchasing activities in Danfoss were located in the lower right corner of the model, and were focused on central purchasing and economies of scale. From late 1980s until 1997 the company was organised with decentralised purchasing activities (lower left corner in the model). The focus was on local activities and the network of purchasing professionals used each other for information sharing and benchmarks on prices, terms of delivery, etc. The corporate coherence slowly disappeared, resulting in the disappearance of the former volume advantages. During this period management understood that a more coordinated approach was needed. Therefore, in 1997 a person was employed to develop a more structured approach and to create the foundation for cooperating across divisions. This was done by, e.g., developing the Corporate Purchasing Teams

(CPT) and a training program, the “Strategic Purchasing Programme”. In other words the intention was to increase ‘purchasing maturity’. However, it took a few years before goals and strategies were established for the Corporate Purchasing Committee and the CPTs. It was not until the end of 2000 that a corporate purchasing strategy was presented to the top management in Danfoss, linking corporate and divisional perspectives. Over this period trust among the purchasing professionals was increasing and the ‘decentralised culture’ was challenged, leading “lead buyership” to arise in the CPTs and to the decision about a corporate data warehouse on purchasing data. It can be argued that Danfoss are now moving towards a more ‘centre-lead purchasing’ strategy and execution.

How can changes in the strategic organisation of the purchasing activities be seen as a result of the *implementation* of an ICT system?

It appears explicitly from figures 1 and 2 that the role of information technology is changing. As a clarification of this, Henderson & Venkatraman (1993:4) state, “that IT has evolved from its traditional orientation of administrative support towards a more strategic role within an organization”. They have put forward a framework that can contribute to the understanding of the concrete development that has taken place within the Data Warehousing area (see figure 2). The principles in the frame of reference can be illustrated in the following way (see figure 5).

Figure 5. Framework illustrating the connection between IT and business strategies



Source: Henderson & Venkatraman (1993).

The figure illustrates that there must be a functional integration between business strategies and IT strategies on one hand and organizational structure and the IT systems that are utilized (the relations called “a”) on the other hand.

In addition to this, the organization must be characterized by a connection – strategic fit – partly between business strategies and organizational structure and partly between IT strategies and the concrete composition of IT systems (the relations called “b”).

A balance between the four areas characterizes the strategic adaptation. The development of a firm can be described by the fact that there are changes in the business strategies or IT strategies by which the balance between the four areas is changed. Henderson & Venkatraman (1993) draw up four different perspectives in order to understand the consequences of such change processes. One of these starts from changes in the IT strategy and the influences they have on the business strategy and the organizational structure (see the two dotted arrows in figure 5).

The development of a Data Warehouse system on the basis of widely different ERP systems gives new business possibilities and organizational relations. Ac-

According to Henderson & Venkatraman (1993:11) it is the role of the top management to “describe the characteristics of the new IT possibilities and their influence on the business strategy”. From the case study it appears that the purchasing project has been of high interest to the top management. The task of the IT management is to act as a catalyst and to interpret the potential of business development and in this way to assist the managers. For that reason the chances of realizing the IT possibilities are best when line-managers have understood and accepted the possibilities.

In the case study it is clearly illustrated that the IT strategy is important, as the purpose is to support an improvement of the competitive position equivalent to € 40 million before end of 2004. The organizational structure has been changed as described above by giving more influence and importance to the purchasing committee and the purchasing teams. As also appears from the case study, it is not sufficient to make structural changes – the considerations of implementation are crucial for success.

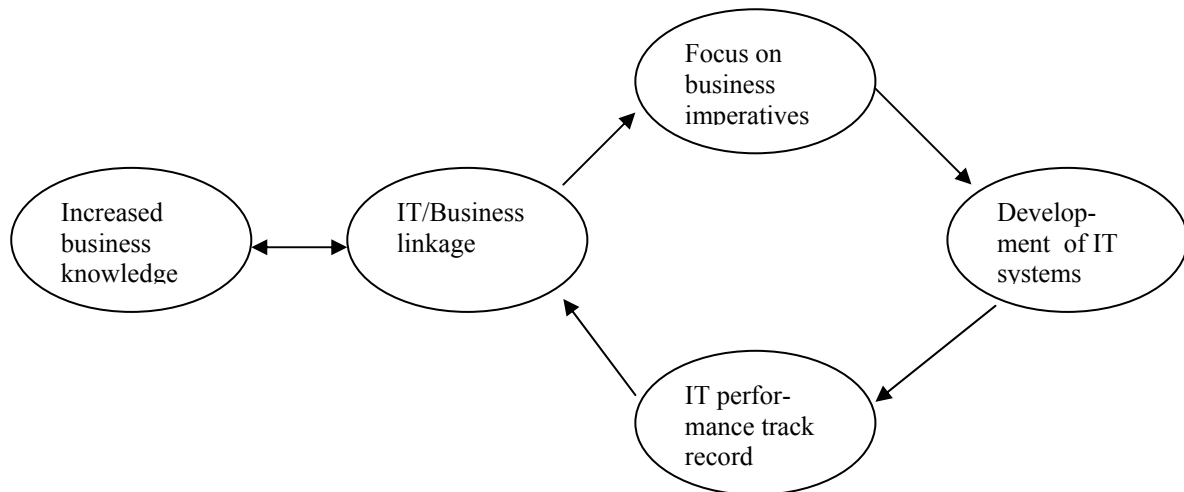
Luftman & Brier (1999:115) discuss the implementation problem in the light of Henderson & Venkatraman’s (1993) terminology. In principle they point out three conditions that promote the implementation:

- set targets and establish teams
- understand the business – IT linkage
- develop learning processes

From the case study it is evident how a proper matrix organization has been created consisting of the purchasing committee and a number of purchasing teams (CPTs). These cross-divisional teams are central for acceptance and reduction of resistance to the changes. The understanding of the IT business linkage finds expression in the management paying careful attention to the project and this has caused purchasing as a profession and a process to be put on the corporate agenda.

Rockart *et al.* (1996:48) illustrate the connection between IT and the business area as a learning process:

Figure 6. The IT – business linkage



Source: Rochart *et al.* (1996).

It is apparent from the case descriptions that focus on learning processes (i.e. 180 purchasers have completed an internal purchasing course) has been used as a means of building up new knowledge, enhancing awareness of the possibilities. One of the obstacles in reaching agreement between the business area and the IT strategies is the lack of close relations between the areas (Luftman & Brier, 1999). By connecting the areas through continuous learning processes (figure 6) and coordinating through permanent groups, mutual commitment and insight into each other's areas are achieved. As the business relations within the purchasing area are fundamentally changed, the learning processes can be understood from Argyris & Schön's (1978) second order learning activities.

By focusing on the concrete goals and at the same time, continuously developing the database (at present about 80% of the purchase data are captured) the implementation process is promoted, thereby enhancing the probability of realising the overall objective of the project. It must be noted that, in practice, the

integration of IT strategy into business strategy is difficult to handle. If the process does not have a high priority, the IT systems will be regarded as insufficient (see e.g. Skok & Legge (2002)).

As a part of the conclusion it can be mentioned that the choice of the relevant IT strategy can contribute to changing the organizational structure, including the relations between the decentralized and central levels. The interaction model between IT and business strategies is developed in a continuous process in which both employees and managers are actively involved through learning processes (figure 6). As has been stated both empirically and theoretically, it is crucial for success that the management gives the process a high priority. This means that sufficient education activities have to be implemented, precise goals must be stated, necessary resources for development and implementation of the IT system must be available and, finally, organizational teams where shared understanding and values can be developed must be established.

Conclusions

Generally, the relationship between the Centre and the divisions is changing. Thus, the core competence perspective and the portfolio perspective are no longer a question of either/or, but a question of a combination in which elements of the two perspectives are coordinated and integrated. The case study can contribute both theoretically and empirically to an increased understanding of what is necessary to make a success of the change process.

If a MNC considers using a closer interaction between the divisions to obtain economies of scale through better coordination of certain purchasing processes, it is our opinion that it is necessary to take the fundamental cooperative forms of the MNC into consideration. For this purpose the models developed in figure 3 and table 1 may be useful for theoretical inspiration.

New IT technological possibilities promote and support the process, as new knowledge of relevant supplier relations can be captured using relatively lim-

ited resources. Such knowledge can contribute to restructuring the supply chain by using fewer direct suppliers.

However, the change process with a more integrated development strategy may prove problematic. Several investigations (see Skok & Legge, 2002) indicate that expected results of the implementation of ERP and Data Warehouse systems may not always be realized, and connecting several different ERP systems further accentuates the problem. However, by focusing on implementing specific learning processes, the problems of connecting the business strategies and the IT strategies seem manageable.

To realize the advantages of introducing new technology we have observed six issues of empirical relevance:

- Setting up clear, operational goals for the project.
- Developing the organization so that the coordination will take place in a specially developed matrix organization.
- Implementation of education activities on a relevant scale.
- Supply of relevant resources (time, financial position, number of employees etc).
- Ensuring that the project is of interest to the management.
- Continuous development and implementation of the IT system.

Under the right contextual circumstances the IT system and changed organizational relations can contribute to connecting the MNC by drawing on the knowledge of each division through developing economies of scale.

References

- [1] Argyris C. & Schön D. A. (1978). *Organizational Learning: A Theory of Action Perspective*, Addison-Wesley Publishing Company, London.
- [2] Burgelman R. B. & Doz Y. (2001). The Power and Strategic Integration, *Sloan Management Review*, Spring, pp. 28-38.
- [3] Burton R. M. & Obel, B. (1998). *Strategic Organizational Diagnosis and Design: Developing Theory for Application*, Kluwer Academic Publishers, Boston.
- [4] Campbell A., Goold M. & Alexander M. (1995). The Value of the Parent Company, *California Management Review*, Fall, vol. 38, No. 1, pp. 79-97.
- [5] Chandler A. D. (1991). The Functions of the HQ Unit in the Multibusiness Firm, *Strategic Management Journal*, vol. 12, pp. 31-50.
- [6] Danfoss News, April 2002.
- [7] Day G. (1994). The Capabilities of Market-Driven Organization, *Journal of Marketing*, vol. 58, October, pp. 37-52.
- [8] Goold, M. & Campbell A. (1987). *Strategies and Styles: The role of Centre in Diversified Corporations*, Basil Blackwell, Oxford.
- [9] Goold, M. (1991). Strategic Control in the Decentralized Firm, *Sloan Management Review*, Winter, pp. 69-81.
- [10] Hamel, G. & Prahalad, C. K. (1993). Strategy as Stretch and Leverage, *Harvard Business Review*, March/April, pp. 75-84.

- [11] Hedley, B. (1977). Strategy and the Business Portefolio, *Long Range Planning*, Vol. 10, February, pp. 9-15.
- [12] Henderson J. C. & Venkatraman N. (1993). Strategic Alignment: Leveraging Information Technology for Transforming Organizations, *IBM Systems Journal*, Vol. 32, No. 1, pp. 4-16.
- [13] John C. & Harrison J. S. (1999). Manufacturing-Based Relatedness, Synergy, and Coordination, *Strategic Management Journal*, 20, 129-145.
- [14] Luftman J. & Brier T. (1999). Achieving and Sustaining Business – IT Alignment, *California Management Review*, Vol. 42, no. 1, Fall, pp. 109-122.
- [15] MacDuffey J.P. & Helper S. (1997). Creating Lean Suppliers, *California Management Review*, 39, no. 4, pp. 118-151.
- [16] Markides, C. C. & Williamson P. J. (1996). Corporate Diversification and Organizational Structure: A Resourcebased View, *Academy of Management Journal*, vol. 39, no. 2, pp. 340-267.
- [17] Nonaka, I. & Takeuchi H. (1995). *The Knowledge Creating Company*, Oxford University Press, London.
- [18] Prahalad, C.K. & Hamel, G. (1990). The Core Competence of the Corporation, *Harvard Business Review*, May/June, pp. 79-91.
- [19] Skok, W. & Legge M. (2002). Evaluating Enterprise Resource Planning (ERP) Systems using an Interpretive Approach, *Knowledge and Process Management*, Vol. 9, Number 2, pp. 72-82.

- [20] Rozemeijer, F. A. (2000). Creating Corporate Advantage in Purchasing: Towards a Contingency Model, in Proceedings from the 9th International Annual IPSERA Conference, London, Canada.
- [21] Rozemeijer, F. A. van Weele, A. & M. Weggeman. (2003). Creating Corporate Advantage through Purchasing: Toward a Contingency model, *The Journal of Supply Chain Management*, Winter, 39, 1, pp. 4-13.
- [22] Rockart, J F., Earl, M. J. & Ross J. W. (1996). Eight Imperatives for the New IT Organization, *Sloan Management Review*, Fall, pp. 43-55.
- [23] Wit, B. & Meyer, R. (1998). *Strategy – Process, Content and Context*, International Thomson Business.

Department of Environmental and Business Economics
Institut for Miljø- og Erhvervsøkonomi (IME)

IME WORKING PAPERS

ISSN: 1399-3224

Issued working papers from IME

Udgivne arbejdspapirer fra IME

No.

1/99	Frank Jensen Niels Vestergaard Hans Frost	<i>Asymmetrisk information og regulering af forurening</i>
2/99	Finn Olesen	<i>Monetær integration i EU</i>
3/99	Frank Jensen Niels Vestergaard	<i>Regulation of Renewable Resources in Federal Systems: The Case of Fishery in the EU</i>
4/99	Villy Søgaard	<i>The Development of Organic Farming in Europe</i>
5/99	Teit Lüthje Finn Olesen	<i>EU som handelsskabende faktor?</i>
6/99	Carsten Lynge Jensen	<i>A Critical Review of the Common Fisheries Policy</i>
7/00	Carsten Lynge Jensen	<i>Output Substitution in a Regulated Fishery</i>
8/00	Finn Olesen	<i>Jørgen Henrik Gelting – En betydende dansk keynesianer</i>
9/00	Frank Jensen Niels Vestergaard	<i>Moral Hazard Problems in Fisheries Regulation: The Case of Illegal Landings</i>
10/00	Finn Olesen	<i>Moral, etik og økonomi</i>
11/00	Birgit Nahrstedt	<i>Legal Aspect of Border Commuting in the Danish-German Border Region</i>
12/00	Finn Olesen	<i>Om Økonomi, matematik og videnskabelighed - et bud på provokation</i>

13/00	Finn Olesen Jørgen Drud Hansen	<i>European Integration: Some stylised facts</i>
14/01	Lone Grønbæk	<i>Fishery Economics and Game Theory</i>
15/01	Finn Olesen	<i>Jørgen Pedersen on fiscal policy - A note</i>
16/01	Frank Jensen	<i>A Critical Review of the Fisheries Policy: Total Allowable Catches and Rations for Cod in the North Sea</i>
17/01	Urs Steiner Brandt	<i>Are uniform solutions focal? The case of international environmental agreements</i>
18/01	Urs Steiner Brandt	<i>Group Uniform Solutions</i>
19/01	Frank Jensen	<i>Prices versus Quantities for Common Pool Resources</i>
20/01	Urs Steiner Brandt	<i>Uniform Reductions are not that Bad</i>
21/01	Finn Olesen Frank Jensen	<i>A note on Marx</i>
22/01	Urs Steiner Brandt Gert Tinggaard Svendsen	<i>Hot air in Kyoto, cold air in The Hague</i>
23/01	Finn Olesen	<i>Den marginalistiske revolution: En dansk spire der ikke slog rod?</i>
24/01	Tommy Poulsen	<i>Skattekonkurrence og EU's skattestruktur</i>
25/01	Knud Sinding	<i>Environmental Management Systems as Sources of Competitive Advantage</i>
26/01	Finn Olesen	<i>On Machinery. Tog Ricardo fejl?</i>
27/01	Finn Olesen	<i>Ernst Brandes: Samfundsspørgsmaal - en kritik af Malthus og Ricardo</i>
28/01	Henrik Herlau Helge Tetzschner	<i>Securing Knowledge Assets in the Early Phase of Innovation</i>
29/02	Finn Olesen	<i>Økonomisk teoriehistorie Overflødig information eller brugbar ballast?</i>
30/02	Finn Olesen	<i>Om god økonomisk metode – beskrivelse af et lukket eller et åbent socialt system?</i>
31/02	Lone Grønbæk Kronbak	<i>The Dynamics of an Open Access: The case of the Baltic Sea Cod Fishery - A Strategic Approach -</i>

32/02	Niels Vestergaard Dale Squires Frank Jensen Jesper Levring Andersen	<i>Technical Efficiency of the Danish Trawl fleet: Are the Industrial Vessels Better Than Others?</i>
33/02	Birgit Nahrstedt Henning P. Jørgensen Ayoe Hoff	<i>Estimation of Production Functions on Fishery: A Danish Survey</i>
34/02	Hans Jørgen Skriver	<i>Organisationskulturens betydning for videnskabelingen mellem daginstitutionsledere i Varde Kommune</i>
35/02	Urs Steiner Brandt Gert Tinggaard Svendsen	<i>Rent-seeking and grandfathering: The case of GHG trade in the EU</i>
36/02	Philip Peck Knud Sinding	<i>Environmental and Social Disclosure and Data-Richness in the Mining Industry</i>
37/03	Urs Steiner Brandt Gert Tinggaard Svendsen	<i>Fighting windmills? EU industrial interests and global climate negotiations</i>
38/03	Finn Olesen	<i>Ivar Jantzen – ingeniøren, som beskæftigede sig med økonomi</i>
39/03	Finn Olesen	<i>Jens Warming: den miskendte økonom</i>
40/03	Urs Steiner Brandt	<i>Unilateral actions, the case of international environmental problems</i>
41/03	Finn Olesen	<i>Isi Grünbaum: den politiske økonom</i>
42/03	Urs Steiner Brandt Gert Tinggaard Svendsen	<i>Hot Air as an Implicit Side Payment Arrangement: Could a Hot Air Provision have Saved the Kyoto-Agreement?</i>
43/03	Frank Jensen Max Nielsen Eva Roth	<i>Application of the Inverse Almost Ideal Demand System to Welfare Analysis</i>
44/03	Finn Olesen	<i>Rudolf Christiani – en interessant rigsdagsmand?</i>
45/03	Finn Olesen	<i>Kjeld Philip – en økonom som også blev politiker</i>
46/03	Urs Steiner Brandt Gert Tinggaard Svendsen	<i>Bureaucratic Rent-Seeking in the European Union</i>
47/03	Bodil Stilling Blichfeldt	<i>Unmanageable Tourism Destination Brands?</i>

48/03	Eva Roth Susanne Jensen	<i>Impact of recreational fishery on the formal Danish economy</i>
49/03	Helge Tetzschner Henrik Herlau	<i>Innovation and social entrepreneurship in tourism - A potential for local business development?</i>
50/03	Lone Grønbæk Kronbak Marko Lindroos	<i>An Enforcement-Coalition Model: Fishermen and Authorities forming Coalitions</i>
51/03	Urs Steiner Brandt Gert Tinggaard Svendsen	<i>The Political Economy of Climate Change Policy in the EU: Auction and Grandfathering</i>
52/03	Tipparat Pongthana-panich	<i>Review of Mathematical Programming for Coastal Land Use Optimization</i>
53/04	Max Nielsen Frank Jensen Eva Roth	<i>A Cost-Benefit Analysis of a Public Labeling Scheme of Fish Quality</i>
54/04	Frank Jensen Niels Vestergaard	<i>Fisheries Management with Multiple Market Failures</i>
55/04	Lone Grønbæk Kronbak	<i>A Coalition Game of the Baltic Sea Cod Fishery</i>
56/04	Bodil Stilling Blichfeldt	<i>Approaches of Fast Moving Consumer Good Brand Manufacturers Product Development</i> <i>“Safe players” versus “Producers”:</i> Implications for Retailers’ Management of Manufacturer Relations
57/04	Svend Ole Madsen Ole Stegmann Mikkelsen	<i>Interactions between HQ and divisions in a MNC</i> <i>- Some consequences of IT implementation on organizing supply activities</i>