MASTER

Mitigating maverick buying at Medtronic

Graven, B.J.M.

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-Mitigating maverick buying at Medtronic-

Appendices

Bjorn Graven
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Executed by:

Bjorn Joseph Maria Graven
ID number: 0520697

In order to:

Medtronic
Afdeling Strategic Purchasing & Sourcing

P.O. Box 2580, 6422 PJ Heerlen
www.medtronic.com

Principal / Supervisor
Ing. Edwin van der Linden
Director of Procurement, Facilities & Real Estate
Supervisor
Mr. Eric Beenkens
Purchasing Manager EMEA

Supervised by:

Eindhoven University of Technology
Faculty of Technology Management
Department of Organization Science and Marketing

P.O. Box 513, 5600 MB Eindhoven
www.tue.nl

First Supervisor TU/e
Dr. Jimme A. Keizer
Department of Organization Science and Marketing

Second Supervisor TU/e
Dr. Ir. Erik M. van Raaij
Department of Organization Science and Marketing

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Appendix 1: Market share of three innovative Medtronic products

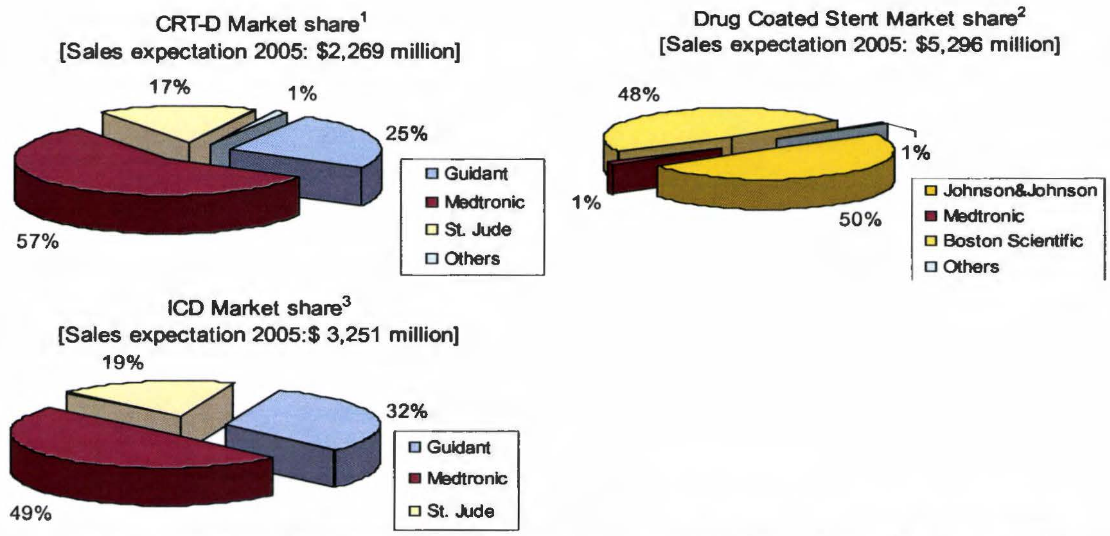

Figure 1-1: Market share innovative Medtronic products (Source: Lehman Brothers, 2005)

[1] CRT-D: Cardiac resynchronization therapy device and defibrillator; a Cardiac rhythm management business product, see section 2.3.1.
[2] DCS: Drug coated stent; a Vascular business product, see section 2.3.3.
[3] ICD: Implantable cardioverter defibrillator; a Neurological business product, see section 2.3.4.

Appendix 2: Financial numbers

(Dollars in millions)	*Fiscal year Net sales* 2005	*Fiscal year Net sales* 2004	*% Change* 2005 vs. 2004
Cardiac Rhythm Management	4,615.5	4,238.3	9
Spinal, ENT & Navigation	2,124.7	1,765.0	20
Neurological & Diabetes	1,794.3	1,610.8	11
Vascular	851.3	842.2	1
Cardiac Surgery	668.8	630.9	6
Total net sales	**$ 10,054.6**	**$ 9,087.2**	**11%**

Figure 2-1: Business Sales 2004 – 2005 (Medtronic 2005)

	Fiscal Year **[in millions of dollars, except "Closing stock" data in dollars]**					
	2000	*2001*	*2002*	*2003*	*2004*	*2005*
Net sales	5016.3	5551.8	6410.8	7665.2	9087.2	10054.6
Net earnings	1084.2	1046	984.0	1599.8	1959.3	1803.9
R&D expenses	488.2	577.6	646.3	749.4	851.5	951.3
Closing stock	51.94	44.25	43.81	48.08	50.46	52.70

(Medtronic, 2005)

Figure 2-2: Medtronic's financial numbers (Medtronic 2005)

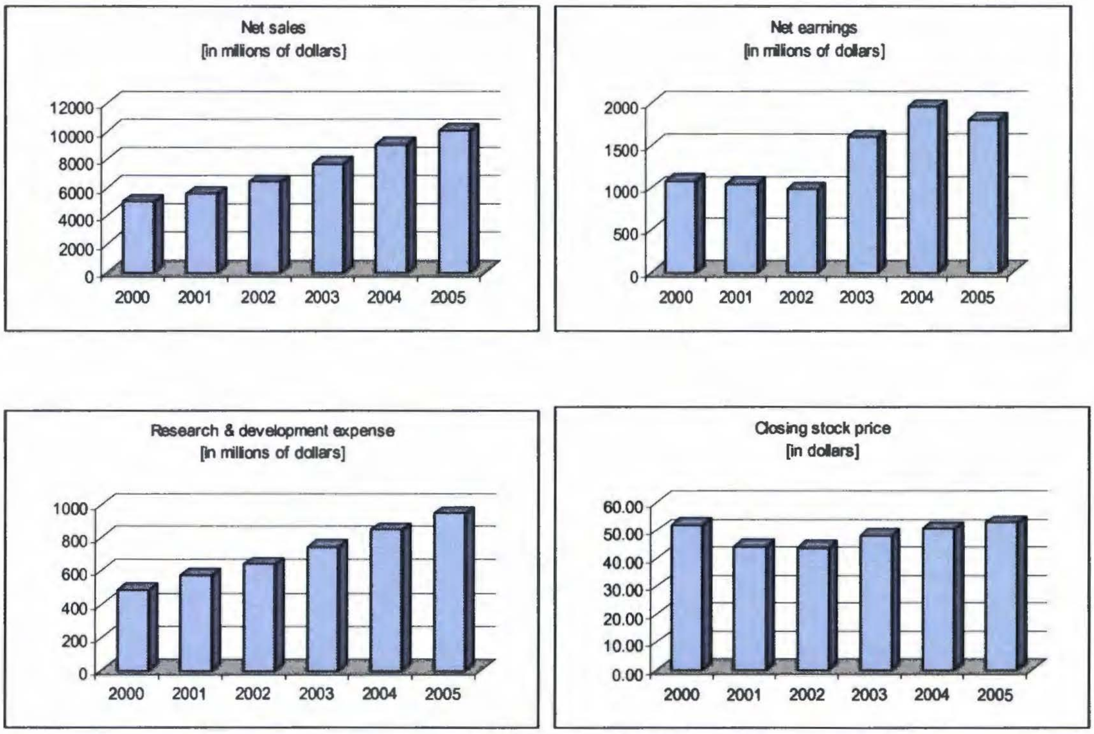

Figure 2-3: Overview fiscal years 2000 – 2005 (Medtronic 2005)

Appendix 3: Market analysis Medtronic

Introduction

This market analysis was executed to get a better insight of Medtronic and the environment they work in. The analysis is focused on the worldwide situation of Medtronic. Porter's Five Forces Model described by Swaan (1999) is used as tool for this analysis.

Porter's model

The Five Forces Model is a tool for analyzing and comparing companies and is developed by Porter in 1980.

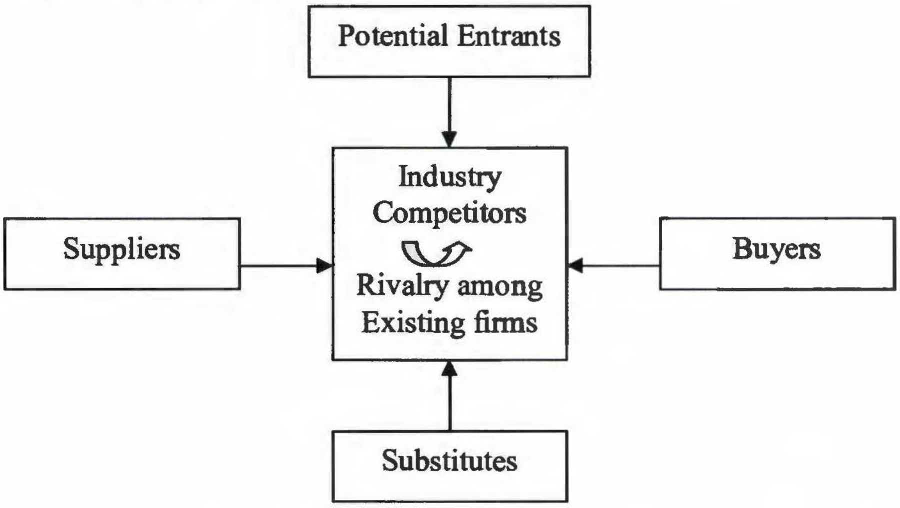

Figure 3-1: Porter's Five Forces Model (Source: Swaan, 1999)

The model showed above is based on five factors:

1. Rivalry among the existing firms
2. Potential entrants; what are the barriers to enter the market
3. Supplier Power
4. Buyer Power
5. Presence of substitute products

Analyzing these factors shows Medtronic's situation in comparison to its environment and its competitors. The analysis will be used to explain cultural and social situations in the Medtronic organization within this report.

Rivalry among existing competitors

In most industries, especially when there are only a few major competitors, competition will very closely match the offering of others. Aggressiveness will depend mainly on factors like number of competitors, industry growth, high fixed costs, lack of differentiation, capacity augmented in large increments, diversity in type of competitors and strategic importance of the business unit.

Medtronic competes in both the therapeutic and diagnostic medical markets. Both are changing rapidly as the result of technological innovations and scientific discoveries. The companies to compete with are large manufacturers who have multiple product lines such as Johnson & Johnson, Guidant Corp, Boston Scientific, Stryker Corp ($3 billion),

St. Jude Medical Inc ($2 billion) and smaller firms with a limited offering of devices. During the last quarter, Medtronic got the biggest boost from its biggest business. Sales of implantable cardioverter defibrillators rose 30% to $718 million. Medtronic is the market leader for these surgically implanted devices that deliver electric shocks to control rapid, erratic heartbeats. Medtronic's competitors are Guidant and St. Jude Medical. Another big gainer is the spine products business, whose sales rose 24% to $504 million. One unit that can expect greater growth is the vascular products business, whose sales rose 5% to $205 million, but that excludes the Endeavor drug-coated stent, which was approved by the European Union on July 31, 2005. Medtronic is battling Johnson & Johnson and Boston Scientific who sell their stents in the most lucrative market, the U.S., as well as many foreign markets. Analysts expect the Endeavor to reach the U.S. market in 2007. Medtronic is still conducting clinical trials to secure approval by the Food and Drug Administration.

Boston Scientific produces medical supplies used in minimally invasive surgical procedures. Its products are used to diagnose and treat conditions in a wide variety of medical fields, including cardiology, gynecology, oncology, radiology, urology, and vascular surgery. Products fashioned by Boston Scientific include catheters, surgical grafts, coronary and ureteral stents, polypectomy snares, and lithotripsy devices. Boston Scientific markets in some 70 countries worldwide.

Boston Scientific	
Fiscal Year End	December
2004 Sales (million $)	5,624
1-Year Sales Growth	62%
2004 Net Income (million $)	1,062
1-Year Net Income Growth	125%
2004 Employees	17,500
1-Year Employees Growth	16.7%

Figure 3-2: Company information Boston Scientific (source: Boston Scientific, 2004)

Guidant; a global manufacturer of cardiovascular therapeutic devices and related products, is a leading producer of cardiac pacing devices (pacemakers and implanted defibrillators). The firm's vascular products are primarily used to open blocked arteries and keep them open. Guidant also makes cardiac and peripheral vascular repair surgical systems, including less-invasive devices that reduce pain and speed recovery time. Guidant sells primarily in the US, Europe, and Japan. However, the company does sell products in nearly 100 countries.
Johnson & Johnson plans to buy Guidant in a deal worth around $25 billion.

Guidant	
Fiscal Year End	December
2004 Sales (million $)	3,766
1-Year Sales Growth	3%
2004 Net Income (million $)	524
1-Year Net Income Growth	59%
2004 Employees	12,000
1-Year Employees Growth	0%

Figure 3-3: Company information Guidant (Source: Guidant, 2005)

Johnson & Johnson, one of the world's largest, most diversified health care product maker, the firm operates in three sectors. Its consumer products segment makes drugs, and products for skin and hair care, baby care, oral care, first aid, and women's health and nutrition. Johnson & Johnson medical devices and diagnostics division includes such products as surgical equipment, medical monitoring devices, and disposable contact lenses. Its largest segment, pharmaceuticals, makes drugs for an array of ailments, including cardiovascular disease, dermatology, gastrointestinal health, oncology, and pain management.

Johnson & Johnson	
Fiscal Year End	December
2004 Sales (million $)	47,348
1-Year Sales Growth	13%
2004 Net Income (million $)	8,509
1-Year Net Income Growth	18%
2004 Employees	109,900
1-Year Employees Growth	0.6%

Figure 3-4: Company information Johnson & Johnson (Source: Johnson & Johnson, 2005)

Barriers to entry

These are the important structural components with an industry to limit or prohibit the entrance of new competitors. The major components are scale economies (advantage of experience, learning and volume), differentiation (brand image and loyalty), capital requirements (new entrants will face a risk premium), switching cost involved by the customer, access to distribution channels and cost disadvantages (patents, location, subsidies).
Medtronic spends about 10% of revenues on improving existing products and developing new ones. Approximately two-thirds of 2004 revenues were generated from products introduced within the past two years. The company's research and development staff works closely with clinicians at medical and academic institutions to develop new technologies and to design and conduct clinical trials for the company's products.

Power of suppliers

Suppliers can exert their bargaining power over participants by threatening to raise prices or reduce the quality. A supplier group is powerful if they are more concentrated than the industry they sell to, or if the customer group is not important for the suppliers, if the product is an important input to the buyer's business, or they have built up switching costs, or the supplier group poses a threat of forward integration.
Historically, Medtronic has purchased entire companies such as Spinal Dynamics (2002) and Vertelink (2003), or specific assets such as Radius Medical (2004) and Premier Tool (2004), to obtain new technologies and products. This strategy is expected to continue.

Power of buyers

Through their bargaining power, buyers can force their suppliers to lower their prices or force higher quality or better service. The major factors, which determine the bargaining power are volume (relative to seller sales), does the product represent a major fraction of the buyer's costs or purchases, differentiation or standard product, switching costs, buyer profitability, threat of backward integration, importance to the quality of the final product, and level of knowledge and information of the buyer of industry demand, actual market prices and supplier cost.
Medtronic's primary customers include: physicians, hospitals and group purchasing organizations.
There is a renewed focus on cost effectiveness among hospitals and other customers for medical devices. These organizations are consolidating into larger purchasing groups to increase their purchasing power. As a result, Medtronic's transactions with customers are becoming larger, more complex and tend to involve more long-term contracts than in the past. As well, there is more pressure on margins and more reliance on becoming a 'preferred' supplier to the various purchasing groups.

Many of Medtronic's products (and its competitors) carry large price tags. For example, implantable pacemakers cost $4,000 - $5,000 and a defibrillator can cost $20,000 - $25,000. Suppliers of such expensive devices are challenged with the task of convincing purchasers (governments, hospitals, purchasing groups, etc.) that the 'up front' cost of their, for example, cardiac health-care technology is relatively small in relation to the total cost of emergency treatment, hospital stays, drug costs, disability insurance payments, etc. associated with alternative therapies. In addition, device makers maintain that their technology gives patients a higher quality of life.

Medtronic's products are sold in more than 120 countries worldwide: U.S. (68% of 2004 revenues); Western Europe (20%); and, Asia Pacific & Other (12%). A direct sales force is used globally and augmented in international markets by independent distributors.
An aging population in North America, Europe and other areas of the world is expected to need the cardiac, spinal and other Medtronic products in greater quantities than in the past. This new growth in demand is expected to be strongest in elder populations that have a generally sedentary life style and poor diets.
Sales growth is also expected in a number of very large and under-served markets where current product penetration is estimated at only 10%-20%. These markets include developed economies like the U.S. and Europe as well as many virtually un-penetrated markets throughout the world.
For example, even in the U.S., only 10%-20% of the patients who could benefit from an implanted defibrillator use one. In other areas of the world such as Asia and Eastern Europe, Medtronic and its competitors have even less penetration.
In the U.S., Medtronic has formed new partnerships with Walgreen's (drug stores), and Costco and Sam's Club (discount retail) to sell portable, automated external defibrillators to small businesses and households.
Medtronic is not dependent on any single customer for more than 10% of its total net sales.

Substitutes

These are products or solutions that basically perform the same function but are often based on a different technology. Depending on the level of abstraction nearly everything can be a substitution. In general the only factor that really matters is a shift in technology. This subject is a big influencer in the therapeutic and diagnostic medical markets. Depending on years of medical research the optimal treatment can be located and eventually adapted by medical departments. A difficult choice has to be made by the medical device manufactures years before realization of the optimal treatment, result of this are the wide range of substitute products within this therapeutic and or diagnostic treatments. For example, there are nowadays 20 substitute products by different manufacturers in the spinal market for lower backbone treatment.

Conclusion

Based on these five factors a global insight can be made of the Medtronic market. In order to get this insight these factors will be elaborated individually, leading up to a general conclusion.
Rivalry in this market is on a high level between the four biggest manufacturers Medtronic, Johnson & Johnson, Boston Scientific Corporation and Guidant Corporation, each with their core specialization within the medical market.

Research & Development spends is that high, that *entrance into this industry* is very difficult. On one hand the high Research & Development costs, high medical standards, experience and know how are though barriers to concur for entrants in the market. On the other hand entrants are often small high tech companies specialized in one new product, which can easily be incorporated into organization of one of the big players in the market.

Power of supplier can be described as low. The product volume is that enormous, Medtronic easily position itself into the preferred supplier quadrant, or even a incorporation of a supplier shows the power of Medtronic in contrary to the supplier's power.

The buyers power is twofold. It is visible the present hospitals and other customers are more and more focusing on consolidating their purchasing power by organizing purchasing groups and enforcing better conditions and prices. However the margins Medtronic nowadays still makes are favorable. And besides the present margins, Medtronic's sales market is still growing.

Medtronic's healthy financial situation results in an organization culture, which consists of lack of pressure to develop organizational structures and processes.

Appendix 4: Purchasing process

Introduction

In the first three chapters is the orientation phase described. In following of the resulted requirements from the orientation phase, this chapter will discuss relevant literature subjects to get better insight in the requirements.
To understand the various processes in the SP&S and to compare them with other companies' purchasing processes, the purchasing function is explained based on Weele's purchasing theory in section 5.2. In section 5.3.; the Kraljic portfolio model is described to classify Medtronic's products into specific strategy quadrants.

Purchasing process

Definition

Scientific purchasing theory is relative new in comparison to other scientific research areas. Perhaps because of the recent growing awareness of the consequence of the purchasing function.
To describe the purchasing process "Weele's [7]" definitions and theory is used. Weele determines purchasing as: *obtaining from external sources all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company's primary and support activities at the most favourable conditions.*
Weele's purchasing model comprises six steps of purchasing as showed in the figure>>>below.

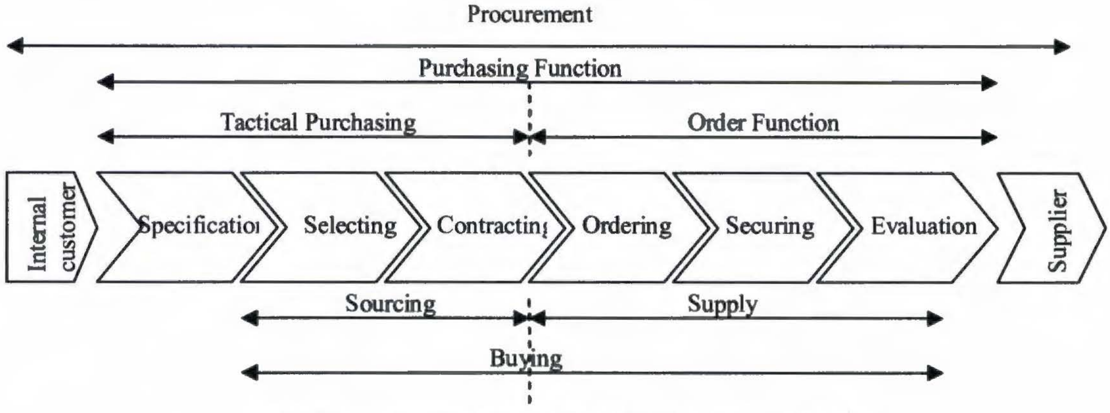

Figure 4-1: Purchasing process (Source: Weele, 2002)

Specification

In this initial step, the main focus is specifying the needs of the purchasing requirements in the purchase order specification document, which can be differentiated in the functional- and detailed technical specifications. This document comprises the following issues: quality, logistics, maintenance, target budget, legal and environmental requirements.

Selecting

The selection step starts with a market research to explore available supplier technologies. The request for quotation (RFQ) with all the important information formulated in the specification step will be send to a number of pre-qualified suppliers.
Based on the RFQ-reactions capable supplier will be chosen to precede the purchasing process with.

Contracting

After negotiations with the supplier a contract have to be drawn up and both parties have to come to an agreement. A contract includes; prices, terms of delivery, terms of payment, penalty clauses, warranty conditions, performance guarantee and other arrangements like contracting out to third parties.

Ordering

After the agreement between both parties, the order can be placed. In case of the so called routine purchasing situation, further agreements have to be made. Call-off agreements describes the details like kind of products, price per unit per period, number of units per period, duration of the agreement period.
An order requires specific information and instructions, like purchase order number, description of the product, number of products, delivery address, invoice address to the supplier to secure the process of inbound acceptance, invoice payment, electronic matching and performance measurement.

Securing

The securing step involves the control of supplier compliance with the contract and a control check of the specific purchase order, which monitors the on time delivery, invoice payment and product quality.

Evaluation

In the last step of the purchasing process the supplier's performance will be evaluated in order to learn from earlier mistakes and improve the purchasing process cycle by cycle.

Appendix 5: Purchasing procedure PR and NPR goods

5.1.General

Purchasing is the responsibility of the purchasing department. All employees engaged in any supplier related activity have to take into account the ethical conduct as described in the Medtronic Business Conduct Operating Policies. Products purchased by or under responsibility of the purchasing department can be divided into 4 groups:

- BOM (Bill Of Material) and OEM materials (§4.2)
- Product related services (§4.3)
- Product related supplies (§4.4)
- Other materials and services (§4.5).

5.2.Purchasing BOM and OEM materials

Process flow BOM and OEM part ordering

Following process flow describes the ordering process of BOM and OEM materials.

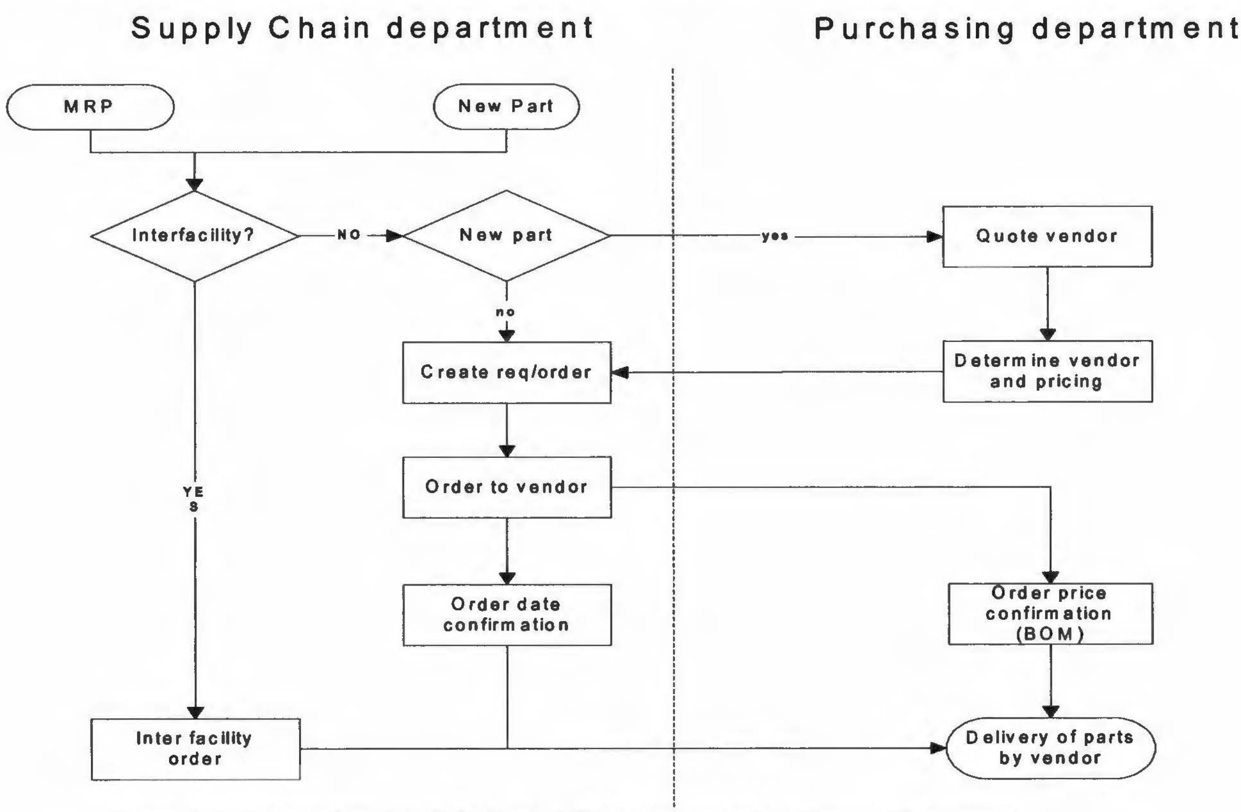

Figure 5-1: Process flow PR (BOM and OEM) parts ordering (Source: Medtronic)

BOM and OEM materials obtained from suppliers

For BOM materials a revision controlled part number traceable in ERP identifies these materials. The purchasing department has to inform the suppliers about revision levels of materials to be delivered. OEM materials are provided with a part number in the ERP system.

BOM and OEM Materials should only be obtained from accepted or preferred suppliers listed in the Qualified Vendor List (QVL).

In order to guaranty the best conditions, to shorten delivery times as well as formalize relationships with suppliers, purchasing agreements can be implemented. For this purpose cross-functional teams can be formed in order to have a maximum support and input of all disciplines.

For frequently used materials or as part of a purchasing agreement, an outline / schedule agreement can be created. This agreement in the ERP system enables the supply chain department to order directly materials from vendors (call-off order). All purchasing conditions are agreed in this outline / schedule agreement.

BOM materials obtained from other Medtronic facilities

The supply chain department is responsible to obtain products from other Medtronic facilities. These materials are purchased, manufactured and inspected by other Medtronic facilities and not part of this procedure.

5.3.Purchasing product related services

Product related services (e.g. cleaning, sterilization, clinicals, etc.) can be subcontracted to accepted suppliers listed in the QVL. The activities have to be documented in a contract and/or in a specification as part of a contract.

5.4.Purchasing product related supplies

Product related supplies are materials that are needed for the production process, that are not part of the finished device and therefore are not listed in a Bill Of Material (BOM). Revision level control can be established. The materials are planned and purchased on an identical way as BOM materials (see 4.2) but can have a different inspection routing as specified in the QVL in the ERP system.

5.5.Purchasing other materials and services

Process flow product related services and other materials and services
Following process flow describes the ordering process of not production related services and materials.

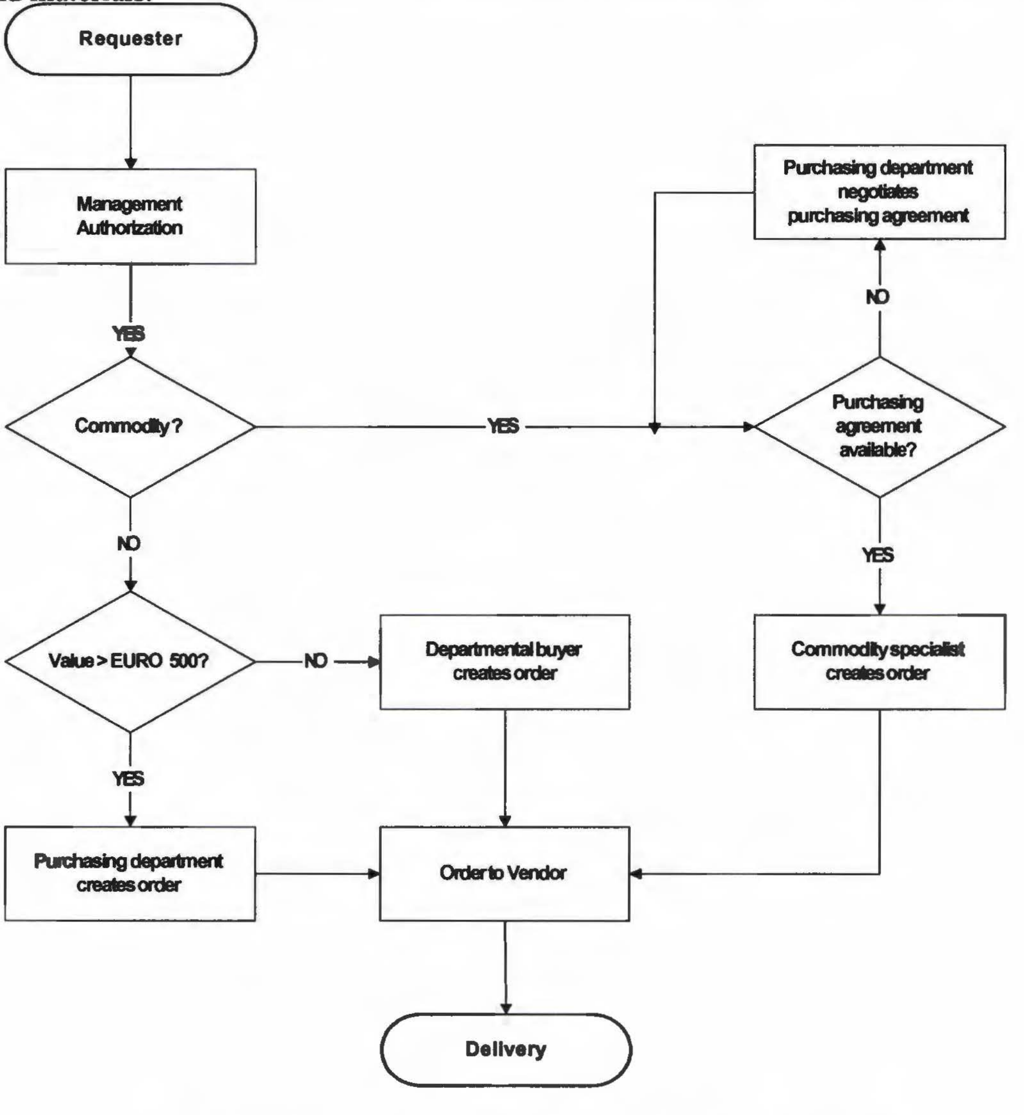

Figure 5-2: Process flow NPR parts ordering (Source: Medtronic)

For all non production related materials and services, a requisition is put on authorization routing by the requester.

Purchasing orders with value < EURO 500
All operational activities for non-product related materials, supplies and services, to be planned and purchased of a value < EURO 500 are delegated to the departments that have the actual need. Authorization of these orders and ordering activities are under responsibility of the operating departments. These materials or services may only be purchased at authorized vendors listed in the ERP system. Adding suppliers to the ERP

system is the responsibility of Financial Shared Service Center in co-operation with Strategic Purchasing department.

Purchasing orders with value between EURO 500 and EURO 10.000
An authorized requisition is to be transformed into a PO by the purchaser or a commodity specialist. The commodity specialist (e.g. computer equipment, facilities) is authorized to order materials or services at vendors, authorized by the purchasing department. All other materials or services are specified by the requester and ordered by the responsible purchaser. A Purchase Order formally confirms all orders.

Purchasing orders with value > EURO 10.000
All Purchase orders with a value above EURO 10.000 need to be authorized by the Director Procurement, Facilities & Real Estate. A Purchase Order formally confirms all orders.

Appendix 6: Commodity list NPR goods

Commodity Group	Commodity	Description
Communication and Marketing	Printed Matter (Marketing & technical)	Letter paper, envelopes, giro slips, bank statements, business cards, product brochures, etc.
Communication and Marketing	Congress, markets, events and sponsors	All goods and services purchased in support of (sports) events, clubs, organizations etc. Including financial contributions, including organizing and participating in conventions, fairs and events.
Travel & Mobility	Lease Cars	Lease cars, including rental cars used as forerunners for lease cars or temporary replacement of lease cars requiring service. This does not include rental cars for business trips.
Travel & Mobility	Airfare	Costs of Business Trips by aircraft.
Travel & Mobility	Lodging	Costs of accommodations used during business trips.
Travel & Mobility	Rental Cars	Costs of cars rented during business trips.
HRM	Contractors (Temporary workers)	Temporary employment of external workers hired to support operational processes
HRM	Consultancy	All external consultants including health and safety consultants, consultants on secondment, and temporary workers who are not contractors (Temporary), or hired ICT (including architects)
HRM	Training/education & classes	All education, courses and trainings provided for the staff, excluding courses covering first aid (EHBO) and emergency assistance at work (BHV).
Facility Services	Move	Organizations hired for moving furniture and fixed goods.
Facility Services	Cleaning	Cleaning of the interior of the buildings, including window cleaning, third party services, tools and related items.
Facility Services	Reception & Security Services	Staff for the reception service and security, including incident room and alarm routing (excluding relevant building-related security installations, access monitoring systems & employee badges, cameras etc.)
Facility Services	Catering	Deployment of people for the facility restaurant, workplace catering or catering at events. Drink and candy slot machines and sale of related products.
Facility Services	Archiving	All products and services related to archiving.
Facility Services	Lawn Care	Landscaping companies, internal and external plant care / planting and maintenance.
Facility Services	Waste / Environment	Waste disposal, waste disposal equipment.
Facility Services	Energy	Gas, electricity, green energy, heating fuel and city heating, also standing charges like consumption.

Commodity Group	Commodity	Description
Facility Services	Maintenance	Services related to maintaining building, garden, ground areas and technical equipment.
Facility Products	Memberships, books, subscriptions and special literature.	Magazines, books, memberships etc. to support learning and training. Hardcopies and digital copies.
Facility Products	Machinery & Equipment	Primary process and facility-related equipment and goods, such as post-camera equipment (P), printing machinery (P), Packaging (F/P) etc. including Subscriptions.
Facility Products	Office Supplies	All materials for office use like pens, stationery, text markers etc., but also diskettes. Excluding cartridges and toners for printers.
Facility Products	Production supplies	Products purchased for research, development and manufacturing purposes.
Facility Products	Furniture	All office furniture, i.e. office desks, chairs, drawers, bookshelves, but also meeting room chairs, tables, management furniture, reception furniture and canteen furniture.
Facility Products	Equipment rental (office).	All illumination equipment including neon lamps and neon bulbs, work space lamps, emergency lights, etc.
ICT	ICT / Hardware	Desktop, laptop, PDA, accessories, printers, Intel servers
ICT	Computer Peripherals (Mice, keyboard, etc.)	Including microfilm and necessities. Including cartridges for printers and disks.
ICT	Software	Licenses for user-software, Business-software (ERP, e-P, HRM, CRM, network), Server-software
ICT	Telecom phone costs fixed lines	Subscriptions, units.
ICT	Mobile equipment and phone costs	Mobile phones, I-mode, car kits, WAP, SMS, voice over IP, subscriptions and units.
Transport & Freight	External en Internal Transportation	Transport national and international, including courier services, customs, shipping agents, loading and unloading, trucks, but also internal transportation used for transport of staff and goods between locations, e.g. taxi rides.
Transport & Freight	Postage	Mail & Delivery
Real Estate	Real Estate Related Tax & Insurance	Cost for Real Estate Related Tax & Insurance
Real Estate	Real Estate Improvement	Cost for Real Estate Improvements

Figure 6-1: Commodity description list (Source: Medtronic)

Appendix 7: Commodity group spend FY 2005

Commodity group	*Spend [million of Euros]*
Marketing and communication	18.6
Travel and mobility	79.8
HR	24.5
Facility Services	45.8
Facility Products	82.6
ICT	24.1
Transport	45.4
Real Estate	21.5
3rd Parties Finished Goods	3.8
Remaining	15.4
Total	*361.5*

Figure 7-1: SP&S spend FY 05 per commodity group (Source: Medtronic, 2005)

Appendix 8: Procurement-to-payment process

Accenture in cooperation with American Express conducted a study on how organizations are handling their procurement to payment process by use of a survey within the U.S. and Europe with over 50 companies from 12 different industries. The study was focused on indirect (NPR) expenditure, but excluded travel and entertainment expenses.
63% of the participants had annual revenues over $ 5 billion. 67% of the participants were located in the U.S. and 33% in Europe. 56% of the organizations had over 10,000 employees.
This research showed the following results:

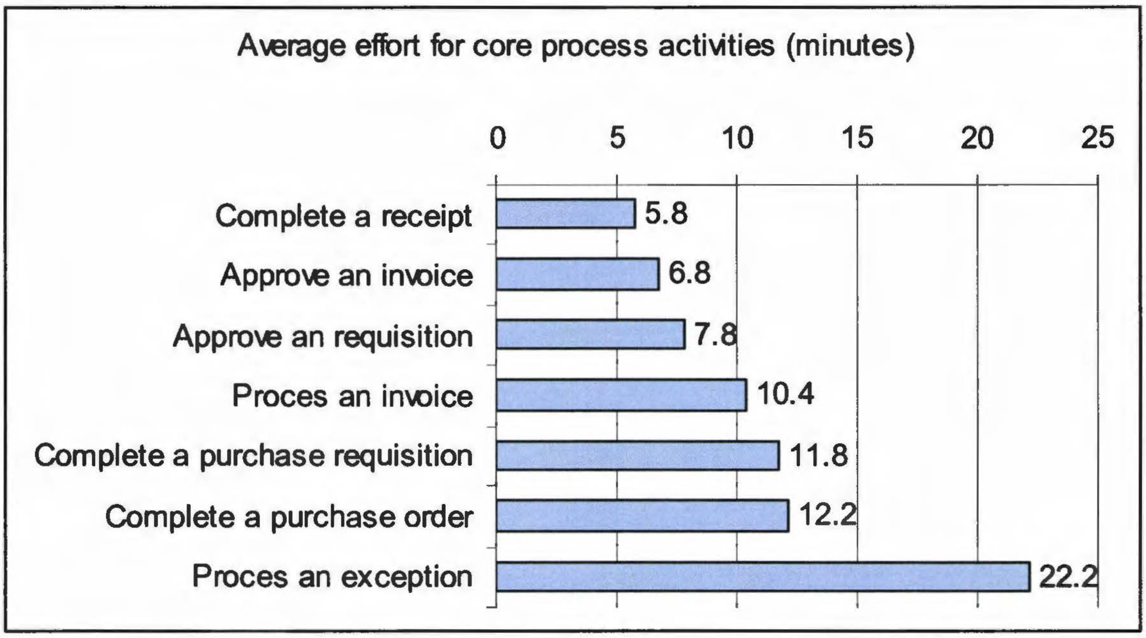

Figure 8-1: Average effort for core process activities (Source: Aberdeen, 2002)

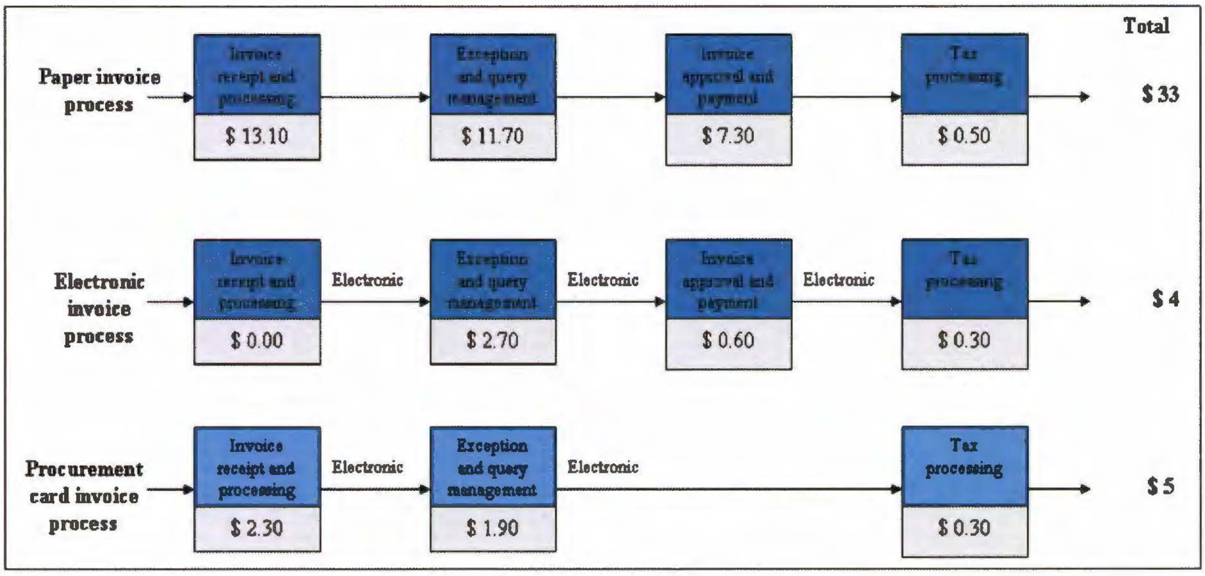

Figure 8-2: Relevant estimated costs according to order to receipt process (Source: Aberdeen, 2002)

Note:

Manual order process is based on the end-to-end manual process.
ERP order process is based on the end-to-end ERP with paper invoice process.
E-Procurement order process is based on the end-to-end e-procurement with paper invoice process.
Procurement card order process is based on the end-to-end procurement card process.

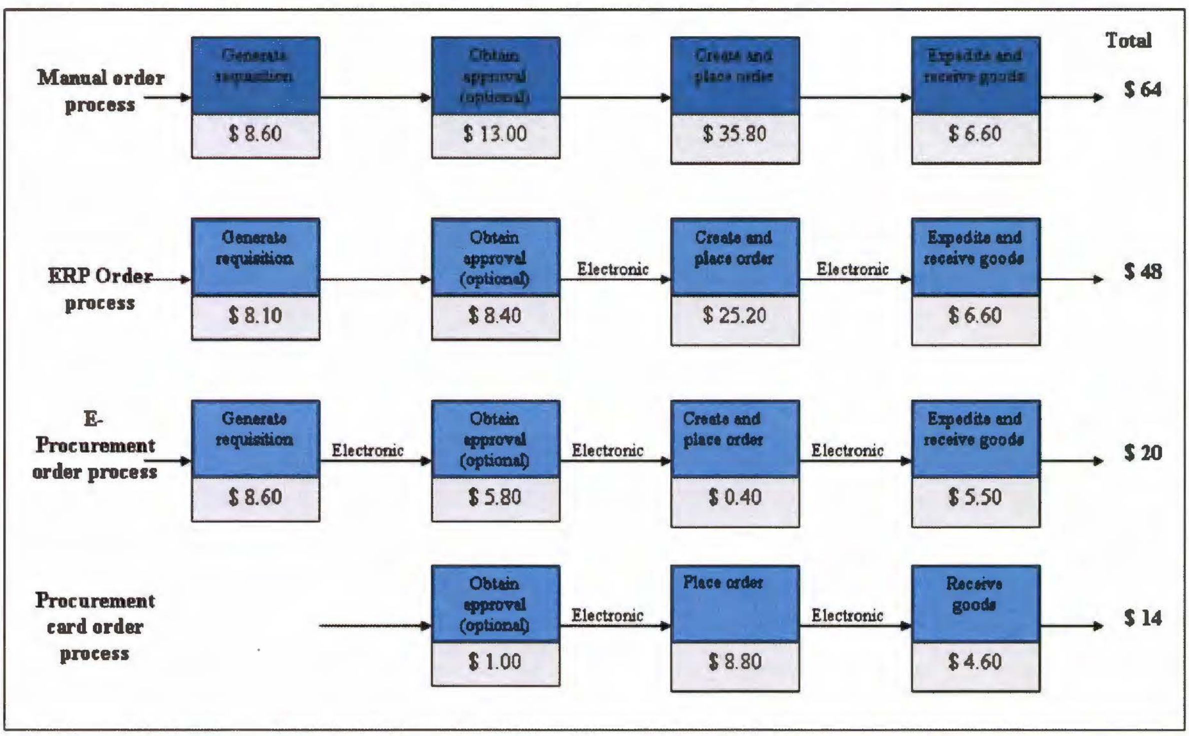

Figure 8-3: Relevant estimated costs according to invoice to payment process (Source: Aberdeen, 2002)

Note:
Paper invoice process is based on the end-to-end manual process.
Electronic invoice process is based on the end-to-end manual order with electronic invoice process.
Procurement card invoice process is based on the end-to-end procurement card process and manual order process.

Appendix 9: Investigation of the extent of maverick buying

Selecting commodities

The most useful commodities will be selected by means of the mentioned factors in section 5.4 in the main report, namely:

1) High value/spend
2) High order frequency
3) High number of buyers
4) Available data

The first three factors are used to make a first selection, followed by a second selection in which the fourth factor is used, namely availability of the needed data.

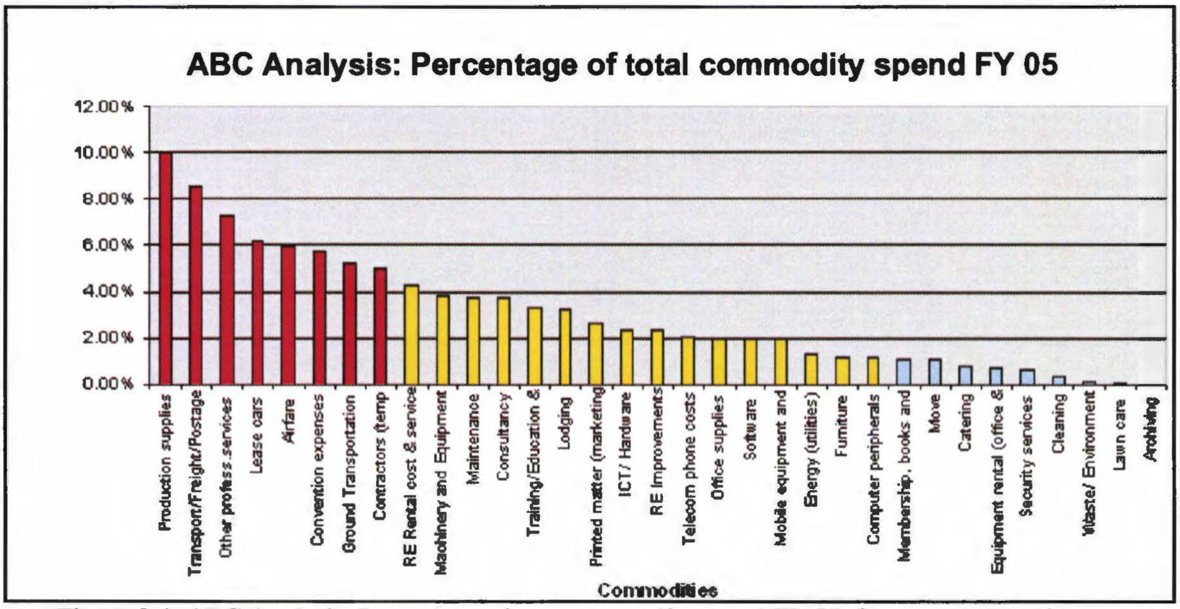

Figure 9-1: ABC Analysis: Percentage of total commodity spend FY 05 (Source: Medtronic)

First selection

The three factors; relative spend, order frequency and number of buyers, are described for each commodity by a ranking from 0 till 6, 0; is low, increasing to 6; which is high, in the table below.

Commodity Group	Commodity	Relative spend 0 = low, 6 = high	Order frequency 0 = low, 6 = high	Number of buyers 0 = low, 6 = high
Facility Products	Production Supplies	6	6	1
Transport & Freight	Transport/Freight/Postage	5.5	6	1
HR	Other Profess. Services	5	3	3
Travel & Mobility	Lease Cars	4	2	3
Travel & Mobility	Airfare	4	5	6
Markcom	Convention expenses	3.5	3	1
Travel & Mobility	Ground Transportation (incl. Rental cars)	3	4	5
HR	Contractors (temp workers)	3	2	3
Facility Products	Machinery and Equipment	2.5	3	1
Facility Service	Maintenance	2.5	3	1
HR	Consultancy	2.5	2	3
HR	Training/Education & classes	2	2	3
Travel & Mobility	Lodging	2	5	6
Markcom	Printed matter (Marketing & Technical)	1.5	5	1
ICT	ICT/ Hardware	1.5	3	2
ICT	Telecom phone costs fixed lines	1.5	2	0
Facility Products	Office Supplies	1.5	6	6
ICT	Software	1	2	3
ICT	Mobile equipment and phone costs	1	4	6
Facility Service	Energy (Utilities)	1	2	0
Facility Products	Furniture	1	2	3
ICT	Computer Peripherals	1	4	5
Facility Products	Membership, books and spec. literature	1	2	3
Facility Service	Move	0.5	3	2
Facility Service	Catering	0.5	4	4
Facility Products	Equipment rental (Office & other)	0.5	3	2
Facility Service	Security Services	0.5	2	1
Facility Service	Cleaning	0.2	3	1
Facility Service	Waste/ Environment	0.1	1	1
Facility Service	Lawn Care	0.05	1	1
Facility Service	Archiving	0.05	2	1

Figure 9-2: Ranked commodities

Out of this table the following commodities are picked out after the first selection:

1. Production Supplies
2. Transport/Freight/Postage
3. Other Professional Services
4. Lease Cars
5. Airfare
6. Ground Transportation (incl. Rental cars)
7. Lodging
8. Office Supplies

Second selection

From the nine selected commodities during the first selection, "Production supplies" and "Other professional services" decline, because these are production related products, which fall out of the scope of the research assignment. Transport/Freight/Postage is declined, because in this commodity relative few people are responsible for ordering this type of products, which would result in too little information for a proper analysis.

Remaining (N) commodities for investigation:

1. Office Supplies
2. Lease Cars
3. Lodging
4. Ground Transportation (incl. Rental cars)

Investigation commodities

In order to investigate the extent of maverick buying for the selected commodities, for each commodity is (if available) the following data collected from the supplier's information system and from Medtronic's invoice payment system:

- Total money spend in the commodity N (n= 1;4)
- Total money spend at the preferred supplier N
- Percentage maverick buying in commodity N
- Timeframe of the data is 1 year; preferably FY 2005

The data collection had the following results:

Office supplies:

Country	Spend office supplies FY 05 [€]	Spend at preferred supplier FY 05 [€]	Percentage maverick buying
Austria	30,807	0	100%
Belgium	307,087	58,999	81%
Czech Republic	57,657	0	100%
Denmark	19,680	15,549	21%
Finland	31,703	0	100%
France	425,486	140,962	67%
Germany	321,455	38,703	88%
Greece	26,644	0	100%
Hungary	14,020	0	100%
Ireland	484,557	0	100%
Netherlands	783,378	427,635	45%
Norway	33,089	0	100%
Poland	37,303	11,478	69%
Portugal	54,556	0	100%
South Africa	43,713	0	100%
Spain	169,742	54,085	68%
Sweden	149,835	0	100%
Switzerland	446,283	65,650	85%
United Kingdom	168,777	0	100%
Italy	382,229	0	100%
Total	**3,605,771**	**813,061**	**77%**

Figure 9-3: Percentage maverick buying office supplies (Source: Medtronic)

Note:

Spend office supplies FY 2005: last three months FY 2005 are estimated.

This commodity shows a high percentage of maverick buying; on average 77% of the total spend in office supplies is ordered at a non preferred supplier. The Netherlands and Denmark score relative low, respectively 45% and 21%. The high scores for this commodity can be explained in the fact that the European contract only recently has been set up. The local contract in the Netherlands has been set up already five years ago, which explains the lower score in maverick buying.

Lease Cars:

Country	Spend Lease cars [€]	Spend at preferred supplier [€]	Percentage maverick buying
	FY 05	FY 05	FY 05
Austria	394,431	394,431	0 %
Belgium	1,237,163	1,237,163	0 %
Czech Rep	236,869	236,869	0 %
Denmark	332,622	332,622	0 %
Finland	333,860	333,860	0 %
France	2,311,608	2,311,608	0 %
Germany	2,914,914	2,914,914	0 %
Hungary	91,607	91,607	0 %
Ireland	231,496	231,496	0 %
Italy	1,956,779	550,205	72 %
Netherlands	2,216,322	2,216,322	0 %
Norway	56,147	56,147	0 %
Poland	192,435	192,435	0 %
Portugal	224,222	224,222	0 %
Spain	684,521	684,521	0 %
Sweden	350,772	350,772	0 %
Zwitserland	1,068,479	1,068,479	0 %
UK	590,107	590,107	0 %
Total	**15,424,354**	**14,017,780**	**9 %**

Figure 9-4: Percentage maverick buying lease cars (Source: Medtronic)

Except for Italy, this commodity shows a minimum of maverick buying. Lease cars commodity has been set up with a European contract; nevertheless Italy has its own local contract at a non-preferred supplier as regards to the European contract. Italy has the opinion the local contract is financially more profitable as the European contract.

Lodging:

Country/Region	Preferred travel guide bookings	Bookings via Amex card	Percentage bookings at non preferred hotels: Maverick buying
	FY 05	FY 05	FY 05
EMEA	11,381	29,001	**68%**

Figure 9-5: Percentage maverick buying lodging (Source: Medtronic)

The numbers in the table above show the numbers of bookings in FY 05 ordered via the preferred travel guide and paid via the Amex (American Express) card. In terms of maverick buying, no valuable conclusions can be made due to the bookings via the preferred travel agent. Payments data via the Amex card will be collected in the Expense Express Report system of account payable; within the description of the payment no suppliers are mentioned. From the total 29,001 bookings paid via Amex card, 11381 bookings were executed via the preferred travel agent. Besides the payments via the Amex card, there is also a not transparent part of bookings and payments via the booker's private credit card, which are claimed back per department afterwards. Just like the data collection within the Amex card process, this information has been lost. The only hard conclusion can be done is: at least 39% (11,381 / 29,001) of the booking has been done at the preferred travel guide. In case of bookings at the preferred hotels, 32% (100 – 68) of the bookings via the preferred travel guide have been done at the preferred hotels. Presuming that at least the same partition counts in case of the payments via the total bookings of the Amex card; in that case 19,721 (68% from 29,001) from the total hotel bookings via Amex card are booked at non-preferred hotels. Total value of hotel bookings via the preferred travel agent is € 1,563,212, which means that the total value spend on hotel bookings in FY 05 via Amex card can be estimated for at least[1] € 4,008,236 (1,563,212 / 0.39) and the extent of maverick buying can be estimated on € 2,725,600 (4,008,236 * 0.68).

Rental cars:

Country/Region	Preferred rental car [€]	Total rental car [€]	Percentage maverick buying
	FY 2005	FY 2005	FY 2005
EMEA	407,069	604,007	**32%**

Figure 9-6: Percentage maverick buying rental cars (Source: Medtronic)

In the rental cars commodity is relative a low percentage of maverick buying, namely 32%. Besides this low value; also has to be mentioned in case of rental cars; the renter is not always in the position to rent a car at the preferred supplier, because of absence of the preferred supplier at location.

[1] Assume average hotel booking is the same either via preferred travel guide or Amex card. Extra 15% - 27% costs in case of maverick buying is excluded

Appendix 10: Semi structured interview

This semi-structured interview is used to get deeper insight in the SP&S internal client and is applied to five internal clients; buyer, senior buyer and three management assistants at the Medtronic Heerlen location.

Interview Formulier: Interne Klant Medtronic Heerlen

Datum: __/__/____

Introductie:

- **Uitleg:**
  - *Wie ben ik*
  - *Wat kom ik doen*
  - *Wat is het doel van dit interview*

- **Doel van dit interview:**

  1) *inzicht krijgen in manier van werken (interne processen)*
  2) *In hoeverre is er sprake van Maverick buying*
  3) *Wat zijn de beweegredenen tot Maverick buuying*

Persoonsgegevens:

Naam:	____________________
Buyernumber:	____________________
Afdeling:	____________________
CostCenter:	____________________
Huidige functie:	____________________
Dienstjaren:	__ jaar
Welke functies:	____________________

Verantwoordelijk voor:

1. Bent u verantwoordelijk voor bestellingen/inkopen binnen uw afdeling?
2. Doet u inkopen voor zowel; **productie gerelateerde behoeften**, als **niet productie gerelateerde behoeften** (uitleg)?
3. Tot welk bedrag mag u ongeautoriseerd inkoop orders plaatsen?
4. Voor welk bedrag legt u jaarlijks orders in? Welke producten voornamelijk?
5. Kunt u het proces beschrijven; zoals door u / jullie een product wordt besteld?

Contracten:

1. Bent u op de hoogte van de contracten die met leveranciers door de inkoop afdeling zijn afgesproken?
2. Hoe wordt u hiervan op de hoogte gebracht?
3. Maakt u gebruik van deze contracten?
4. Wijkt u wel eens af van de contract afspraken met bepaalde leveranciers? Hoe? Waarom?
5. Komt het wel eens voor dat u bestellingen plaats bij leveranciers, waarvan het contract is verlopen? Hoe komt dat volgens u?

Bestellen

1. Op welke manier legt u de order in bij de leverancier? (e-mail, e-ordering, fax, telefoon, post, face-to-face, anders)
2. Maakt u altijd een SAP order aan, alvorens u de order naar de leverancier stuurt (incl. SAP PO nummer)?

Redenen voor Maverick buying:

- Onwetendheid bestaan van contract
- Goedkopere prijzen bij andere leveranciers
- Slechte ervaringen met een leverancier t.a.v. kwaliteit

- Slechte ervaringen met een leverancier t.a.v. levertijd
- Slechte ervaringen met een leverancier t.a.v. relationele sfeer
- Inefficiënt bestelproces

Producten:

1. Bij welke producten/productgroepen bestelt u wel eens bij een andere leverancier dan staat voorgeschreven?
2. Zijn er andere personen binnen de afdeling geautoriseerd om inkoop orders te plaatsen? Plaatsen zij ook inkoop orders?

Evaluation:

1. Bij slechte prestatie van de leverancier (levertijd, kwaliteit, communicatie) wordt dit aan de inkoop afdeling doorgegeven? Hoe gebeurt dit?

Securing:

- Wie is eindverantwoordelijke voor de order bewaking?
- Ontvangst?
- Kwaliteit?
- Betaling?
- Is dit bij de interne klant bekend?

Ergernissen:

Geef hieronder aan wat uw drie grootste ergernissen/problemen zijn bij het bestellen van producten of sevices?

- ______________________________
- ______________________________
- ______________________________

Afsluiting

Heeft u nog opmerkingen of tips?
Bedankt voor de tijd en medewerking!

This semi-structured interview is used to get deeper insight in the order processing of the SP&S internal client. It is a semi-structured interview to get as much information as possible in the broadest sense, because of the little academic literature available.

Results interview
The motives for maverick buying resulting from the interview are collected from; academic literature about e-procurement, personal train of thoughts and the interview results. At the bullets below the motives are described, namely:

- Not aware of a supplier contract; the internal clients doesn't know the existence of a supplier contract for a certain commodity.
- Incompetent supplier; the supplier contact can't offer the required know how.
- Long delivery time; the supplier has to long delivery time.
- Inefficient order process; the supplier's delivery time is with regard to other suppliers to long.
- To many contact persons at supplier; the supplier doesn't have one regular contact person.
- Bad pricing; the internal client has the opinion the supplier's price is higher with regard to a other supplier.
- Poor quality; the preferred supplier's product quality is from a poor level.

After collecting information about maverick buying on a broad scope by hand of the interview, in the next step a questionnaire is used to get a deeper insight in motives for maverick buying and the internal client's background at Medtronic.

Appendix 11: Questionnaire internal Medtronic clients

- Strategic Purchasing & Sourcing Department -

Survey Form: Internal Customers Medtronic EMEA

Date: 24/3/06

Dear colleague,

This survey is part of a research looking at Maverick Buying and is used to discover the underlying motives for Maverick Buying.

Maverick Buying occurs when internal clients do not make use of company or corporate agreements and order goods and/or services outside of these existing contracts.
In practice, it is studied that in most of the companies 30 % of the buying can be referred on Maverick Buying.

With the results of your survey response, we try to get better understanding what the motives are for Maverick Buying. Your responses enable us to research the root cause of the motives and will be used to optimize communication and processes for you in the future.

This research is initiated by the Strategic Purchasing & Sourcing (SP&S) EMEA department of Medtronic in cooperation with the purchasing department of the Technical University of Eindhoven.

This survey will take approximately **10 minutes** *of your time.*

With regards,

Bjorn Graven;

Trainee Strategic Purchasing & Sourcing Department

Under supervision of Eric Beenkens;
Purchasing Manager EMEA

Under authority of Edwin van der Linden;
Director of Procurement, Facilities & Real Estate EMEA

Survey Maverick Buying 1/8

- Strategic Purchasing & Sourcing Department -

Personal details:

The 17 questions have to be answered either by clicking the "option button" or by filling in the dotted line. This survey will be treated with high confidentiality.

1) Last name: ....

2) Gender: ☐ Male ☐ Female

3) Age:
☐ Younger than 30 years
☐ 30 – 39 years
☐ 40 – 49 years
☐ Older than 50 years

4) SAP Plant code: ....(for example: EOC = 1030)

5) Department: ....

6) Country:
France
Germany
Ireland
Italy
Netherlands
Spain

7) SAP Cost Center: ....

8) Current Job title: ....

9) Working years in current job: ....Years

Survey Maverick Buying 2/8

- Strategic Purchasing & Sourcing Department -

Responsibility:

In the world of purchasing, products can be classified into two groups; production related items, like microchips in our peacemakers and non production related (NPR) items, like office supplies or lease cars.

The most common NPR product groups are:

- *Printed matter:* *Business cards, promotional products, business forms*
- *Travel & Mobility:* *Lease cars, rental cars, taxi, air tickets, hotel tickets*
- *Contractors:* *Temporary workers*
- *Facility services:* *Catering, moving ,archiving*
- *Facility products:* *Office supplies, furniture, office equipment , clean room Supplies, flowers and plants*
- *ICT:* *Computers, PDA's, software, (mobile) telephone, computer Supplies*
- *Transport & freight:* *Freight, transportation, storage, mail*

10) From all the purchases you are doing; what ratio are NPR items? ....%

11) Do you order (all or most of) the NPR products in your department?

- ☐ Yes
- ☐ No

12) Up to what amount are you allowed to make unauthorized purchases? ....€

13) What is your yearly spend in NPR products? (Travel tickets, office supplies, etc.)

- ☐ Below 1,000 €
- ☐ 1,000 – 20,000 €
- ☐ 20,001 – 50,000 €
- ☐ Higher than 50,000 €

- Strategic Purchasing & Sourcing Department -

Contracts:

14) Are you aware of the existent supplier contracts created by the SP&S department?

- ☐ Yes
- ☐ No

15) How were you informed about the supplier contracts created by the purchasing department?

- ☐ Not informed
- ☐ Via SP&S department; SP&S department initiative
- ☐ Via SP&S department; personal initiative
- ☐ Via other Medtronic colleagues
- ☐ Otherwise; ....

- Strategic Purchasing & Sourcing Department -

Motives for Maverick Buying:

This section of the survey is the most interesting/important part for us; your motives for Maverick Buying can help us to improve our purchasing process resulting in a more efficient ordering process for you.

Maverick Buying occurs when internal clients do not make use of company or corporate agreements and order goods and/or services outside of these existing contracts.

In the table below you are able to select a motive for maverick buying in several NPR commodities, by clicking the preferred button.

	Not applicable	Not aware of supplier contract	Incompetent supplier	Long delivery time	Inefficient order process	To many contact persons	Bad pricing	Poor quality	Other reason
Printed Matter									
- Business cards	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Promotional products	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Business forms	☐	☐	☐	☐	☐	☐	☐	☐	☐
Travel & Mobility									
- Lease cars	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Taxi	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Rental cars:									
Travel agent	☐	☐	☐	☐	☐	☐	☐	☐	☐
Preferred car supplier	☐	☐	☐	☐	☐	☐	☐	☐	☐

Survey Maverick Buying 5/8

- Strategic Purchasing & Sourcing Department -

	Not applicable	Not aware of supplier contract	Incompetent supplier	Long delivery time	Inefficient order process	To many contact persons	Bad pricing	Poor quality	Other reason
Travel & Mobility									
- Air tickets:									
Travel agent	☐	☐	☐	☐	☐	☐	☐	☐	☐
Preferred carrier	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Hotel tickets:									
Travel agent	☐	☐	☐	☐	☐	☐	☐	☐	☐
Preferred hotel	☐	☐	☐	☐	☐	☐	☐	☐	☐
Contractors									
- Temporary workers	☐	☐	☐	☐	☐	☐	☐	☐	☐
Facility Services									
- Catering	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Moving	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Archiving	☐	☐	☐	☐	☐	☐	☐	☐	☐

- Strategic Purchasing & Sourcing Department -

	Not applicable	Not aware of supplier contract	Incompetent supplier	Long delivery time	Inefficient order process	To many contact persons	Bad pricing	Poor quality	Other reason
Facility Products									
- Office supplies	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Furniture	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Office equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Clean room supplies	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Flowers & plants	☐	☐	☐	☐	☐	☐	☐	☐	☐
ICT									
- Computers	☐	☐	☐	☐	☐	☐	☐	☐	☐
- PDA's	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Software	☐	☐	☐	☐	☐	☐	☐	☐	☐
- (Mobile) Phones	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Computer supplies	☐	☐	☐	☐	☐	☐	☐	☐	☐
Transport									
- Transportation	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Storage	☐	☐	☐	☐	☐	☐	☐	☐	☐
- Mail	☐	☐	☐	☐	☐	☐	☐	☐	☐

- Strategic Purchasing & Sourcing Department -

16) Except the above mentioned motives for Maverick Buying, have you experienced other motives for Maverick Buying, for what kind of products? Also in case you filled in "otherwise".

Thank you for your time and filling the questionnaire!

Please send this survey as soon as possible to Bjorn Graven by e-mail, or send a printed version to the address below. If you send this survey by e-mail, please do not forget to save this file first and attach this file to the e-mail!

I would be very pleased if you send this survey back **before the 8th of April!**

bjorn.graven@medtronic.com

Bjorn Graven
Strategic Purchasing & Sourcing Department
Earl Bakkenstraat 10
6422 PJ Heerlen, The Netherlands

Closing this document will take some moments!

Appendix 12: Results survey

In this appendix the results of the survey to investigate the motives for maverick buying have been described.

Design

The survey is developed in such a way, that not only the motives for maverick buying will be exposed, but also the respondent's background to compare these results and eventually to discover interesting insights in maverick buying, or to confirm logical assumptions.

Qua exposing the internal client's background; age, experience in current job, function description, yearly spend, awareness of supplier contract, how the internal client has been informed and percentage NPR spend are questioned to investigate and discover, which group; young vs. old, experienced vs. not experienced, based on function description, or yearly spend, is most responsible for maverick buying.

Qua exposing motives for maverick buying, the motives resulting from the interview are used and filled up with the possible selection "other reason". For each of the 26 NPR commodities the internal client has been asked to fill in the appropriate motive is suitable.

Social desirable answer

Investigating maverick buying by using a questionnaire can result in social desirable answers; respondents fill in what they think the researcher would make most happy, namely: no maverick buying.

In the mind of the respondent he or she is being asked if he or she is doing something wrong and why he or she is doing something wrong. In such a situation it is possible the respondent fills in the answer, which lead to least resistance.

To minimize this social desirability answering bias, the survey is set up in such a way, the respondent is being asked what his or her motives are for maverick buying so the SP&S department can improve its processes and activities in favour of the respondent in the future. In this way the respondent experiences the survey as a possibility to complain about SP&S's activities and processes, instead of being investigated by SP&S.

In order to define the reliability of the answered motives in question 16, earlier in the survey; questions 14 and 15, the non awareness of supplier contracts can also be measured.

Response

From the 58 sent surveys to internal clients of the SP&S department in the EMEA region 42 responded, 3 participants fell outside the scope of this survey; or because of none purchasing, or because of only PR products purchasing. The remaining 12 didn't respond, even after 2 reminders and or phone calls. The Italian participants didn't take part on the survey; the Italian buyers operate in the financial department and because of the end of financial year 06 in April they weren't able to participate in this survey due to high work pressure.

In the table below the distribution of the responded countries is showed; all the big 7 countries in the EMEA region, due to financial impact, received the surveys and all the countries responded, except Italy and Switzerland, see the table>> below.

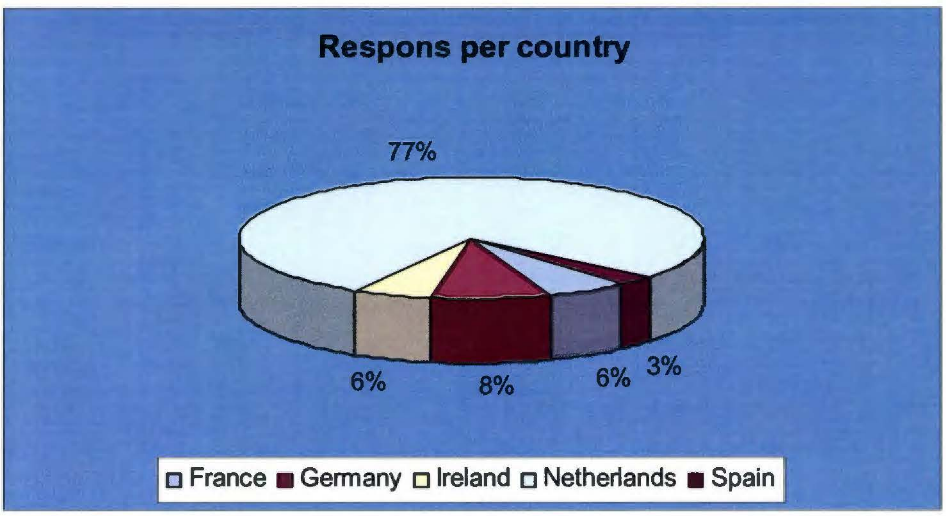

Figure 12-1: Percentage response per country (Source: Results survey)

Most of the response is descended from the Netherlands; mainly because the SP&S department is situated in the Netherlands, but also because it was harder to contact foreign persons responsible for NPR ordering. Foreign internal clients could only be contacted via one contact person in the foreign country, this in contrary to the internal clients in the Netherlands, which could be contacted directly via e-mail, face-to-face or phone.

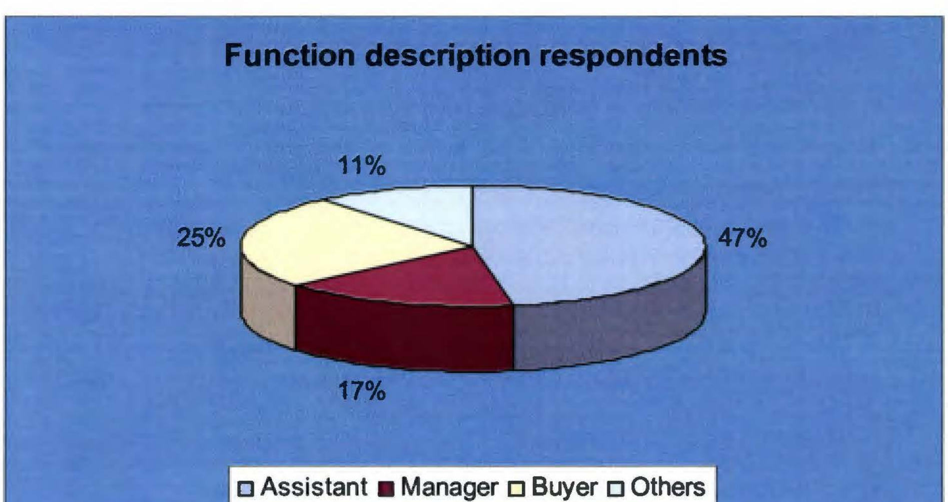

Figure 12-2: Function description respondents (Source: Results survey)

Almost half of the respondents, 47%, are management assistant. Due to the survey results, 82% of the management assistants are responsible for the total department NPR purchases.

Age structure of the respondents

The table below shows that more than 60% of the respondents are younger than 40 years.

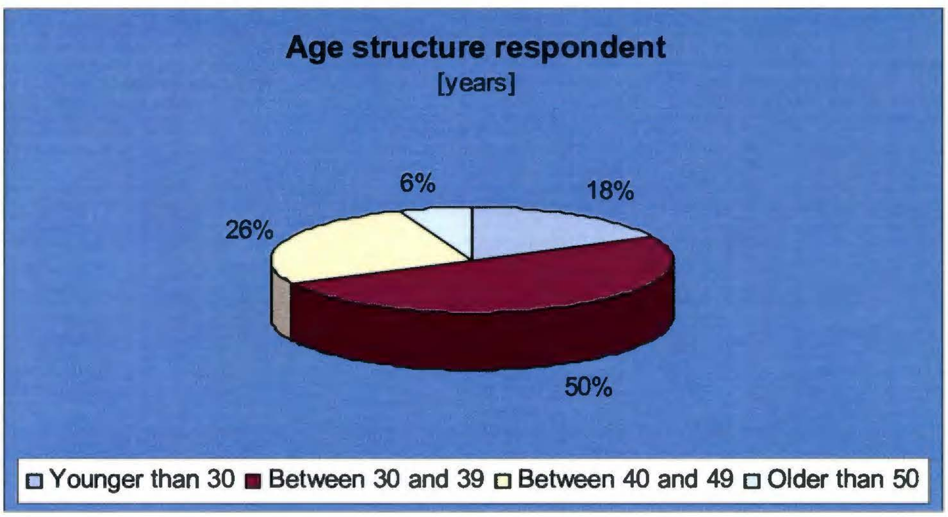

Figure 12-3: Age structure respondent (Source: Results survey)

Job experience

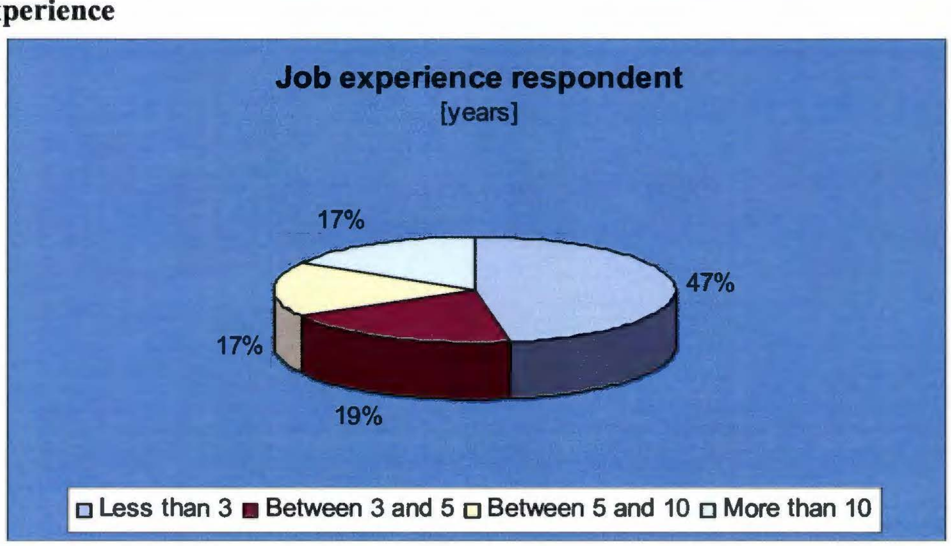

Figure 12-4: Job experience respondent (Source: Results survey)

Almost half of the respondents have less than 3 years experience in his or her current job. The average experience in the respondent's job is 5.9 years.

Respondents' responsibility

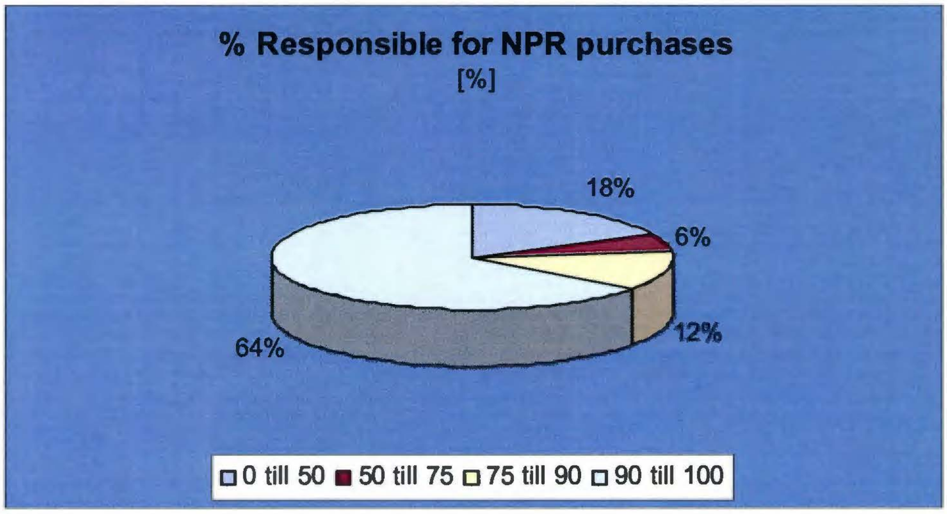

Figure 12-5: % Responsible for NPR purchases (Source: Results survey)

The biggest part of the respondents is only responsible for NPR purchases, namely 64%. Looking further in the obtained data it appears 66% of the category "90 till 100" is management assistant (secretary).

Yearly spend

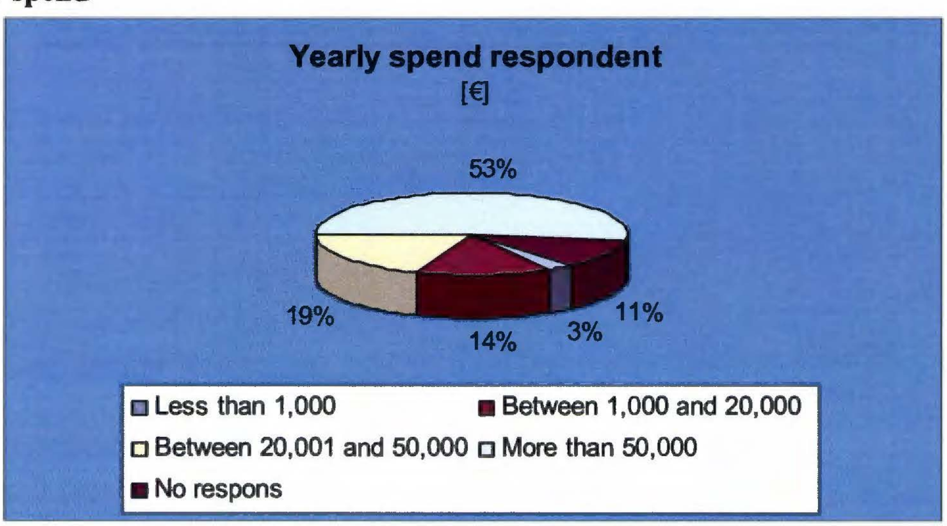

Figure 12-6: Yearly spend respondent (Source: Results survey)

The table above shows the distribution in spends of the internal clients. In the category "more than 50,000 €" the data shows that 47% of these respondents are directly linked to the purchasing department (buyer or purchasing manager) and 21% of the respondents in this category are management assistant.

Awareness of supplier contracts

Figure 12-7: Awareness of supplier contracts (Source: Results survey)

Awareness of supplier contracts is according these answers relative high; 72%. The few who weren't aware of supplier contracts, namely 17%; is 66% management assistant, or other internal clients (34%), who also aren't directly linked to the purchasing department; team leader, department manager, coordinator.

Inform supplier contracts

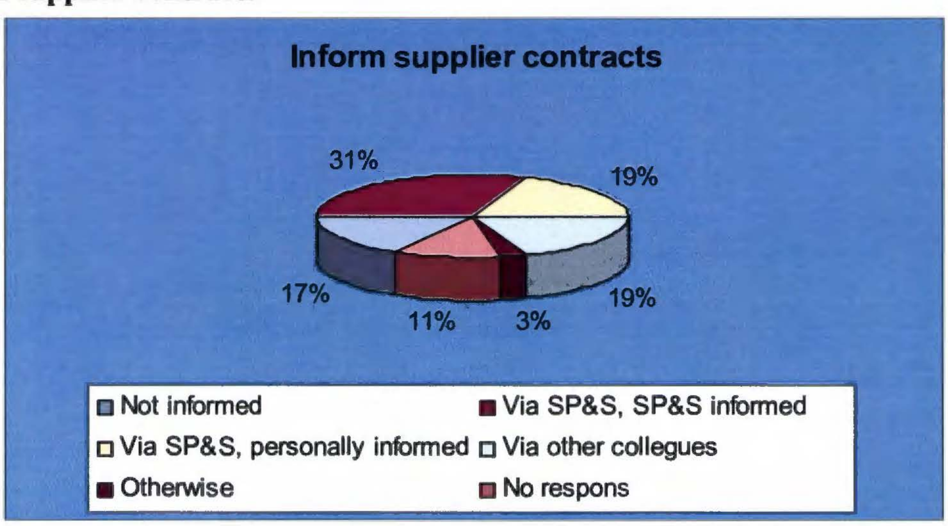

Figure 12-8: Inform supplier contracts (Source: Results survey)

One of the factors, which can be influenced directly by the SP&S department to mitigate maverick buying at the internal clients, is the awareness of the supplier contracts by informing the internal clients.
Looking at the data, only 31% of the respondents are directly informed by the SP&S department. Looking further at this percentage of 31%, it shows that 62% of these

respondents are employees who are directly linked to SP&S; purchasing manager, buyer and trainee-buyer.
This means that most of the internal clients not linked to SP&S, either isn't aware of supplier contracts, or is informed via others.
A match can be mentioned in relation to the 17% group, which wasn't informed about supplier contract (figure 12-8) and the 17% group, which wasn't aware of the existence of supplier contracts (figure 12-7).

Motives respondents

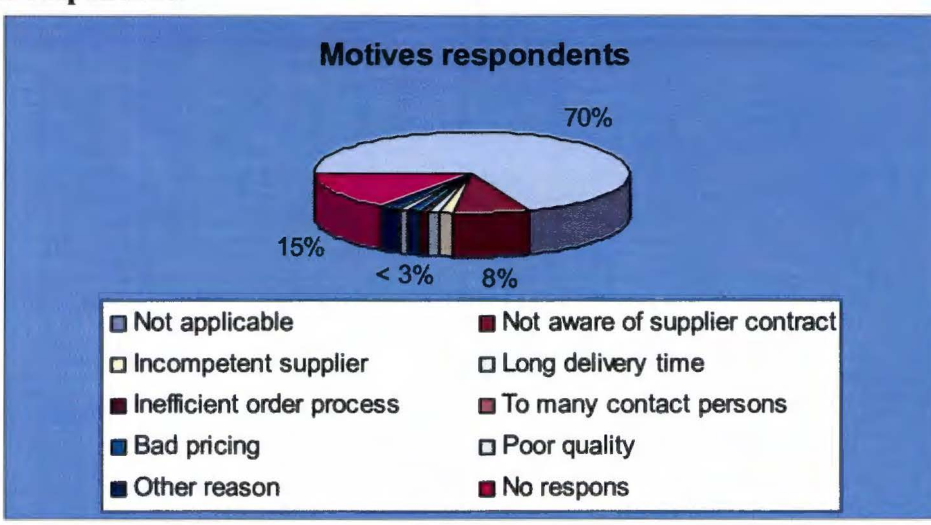

Figure 12-9: Motives respondents for maverick buying (Source: Results survey)

The figure 12-9 shows the results regarding the motives for maverick buying. The results enclose the average motive for maverick buying of the response about all the commodities treated in question 15 of the survey.
70% of the answers are "Not applicable"; this implies that these internal client orders at the preferred supplier.
15% didn't respond, which means that the remaining 15% has been responsible for maverick buying.

Looking back at the figures and conclusions from 12-7 and 12-8, a discrepancy can be notified due to the percentage of awareness of the supplier contracts. In the figures 12-7 and 12-8, 17% of the respondents accounted not being aware of supplier contracts in comparison to figure 12-9, where only 8% of the respondents is not aware of supplier contracts.

Figure 12-9 shows only a percentage of 15% maverick buying, this is relative low according to the results in literature, 30-45%, the extent of maverick buying due to the investigated commodities; 77%, 9%, 68% and 32%, and the results of figure 12-7 and 12-8; 17% and 17% for non awareness of supplier contracts.

Despite the undertaken actions to minimize the impact of social desirable answers, still it seems to be arisen.
Assuming the real percentage of non-awareness of supplier contracts is 17% and the distribution of motives for maverick buying stays the same; the total extent of maverick buying increase from 15% to 32% (15 x $^{17}/_{8}$), which is according literature a more realistic percentage. In these numbers the percentage of no response; between 11% and 17%, isn't included.

The distribution of the 15% and 32% motives for maverick buying is shown in the figure 12-10:

Motive:	**15% Distribution maverick buying**	**32% Distribution maverick buying**
Not aware of a supplier contract	8%	17%
Incompetent supplier	1%	3%
Long delivery time	1%	3%
Inefficient order process	1%	1%
To many contact persons	0%	0%
Bad pricing	1%	3%
Poor quality	1%	2%
Other reason	2%	5%
Total	15%	32%

Figure 12-10: 15% and 32% Distribution motives for maverick buying (Source: Results survey)

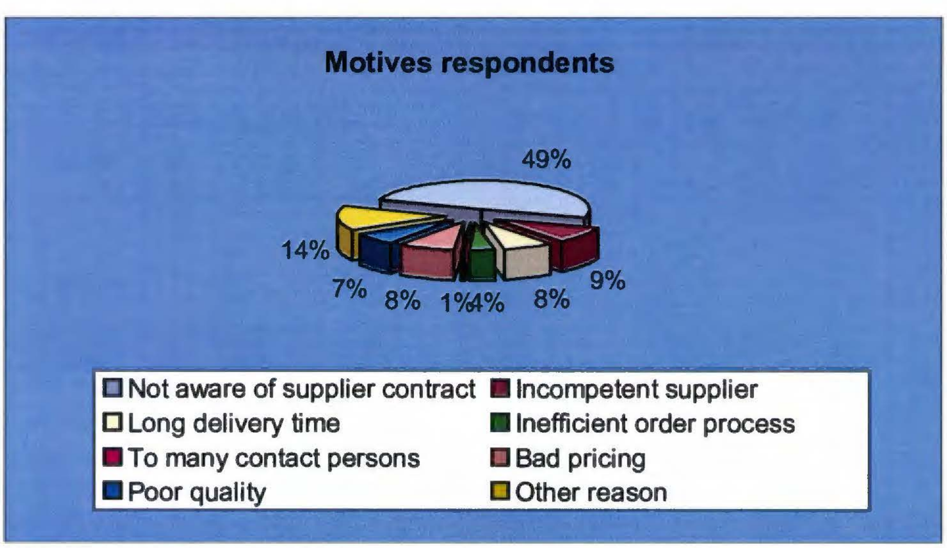

Figure 12-11: Distribution motives for maverick buying (Resource: Survey results)

The original distribution of motives per commodity is shown in figure 12-11.

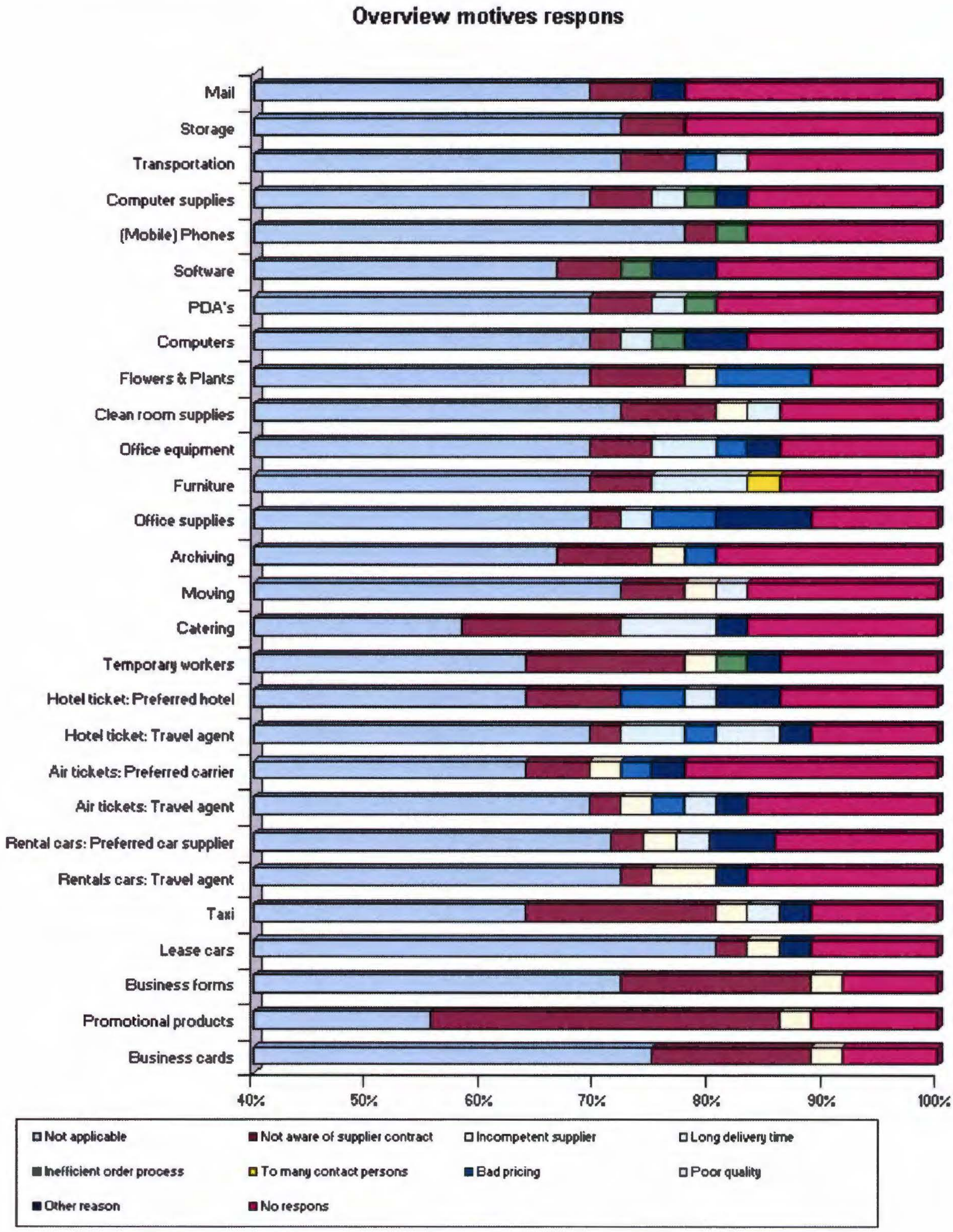

Figure 12-12: Distribution of motives per commodity (Source: Survey results)

The survey results shows the following distribution of maverick buying in the commodities, see figure 12-13 .

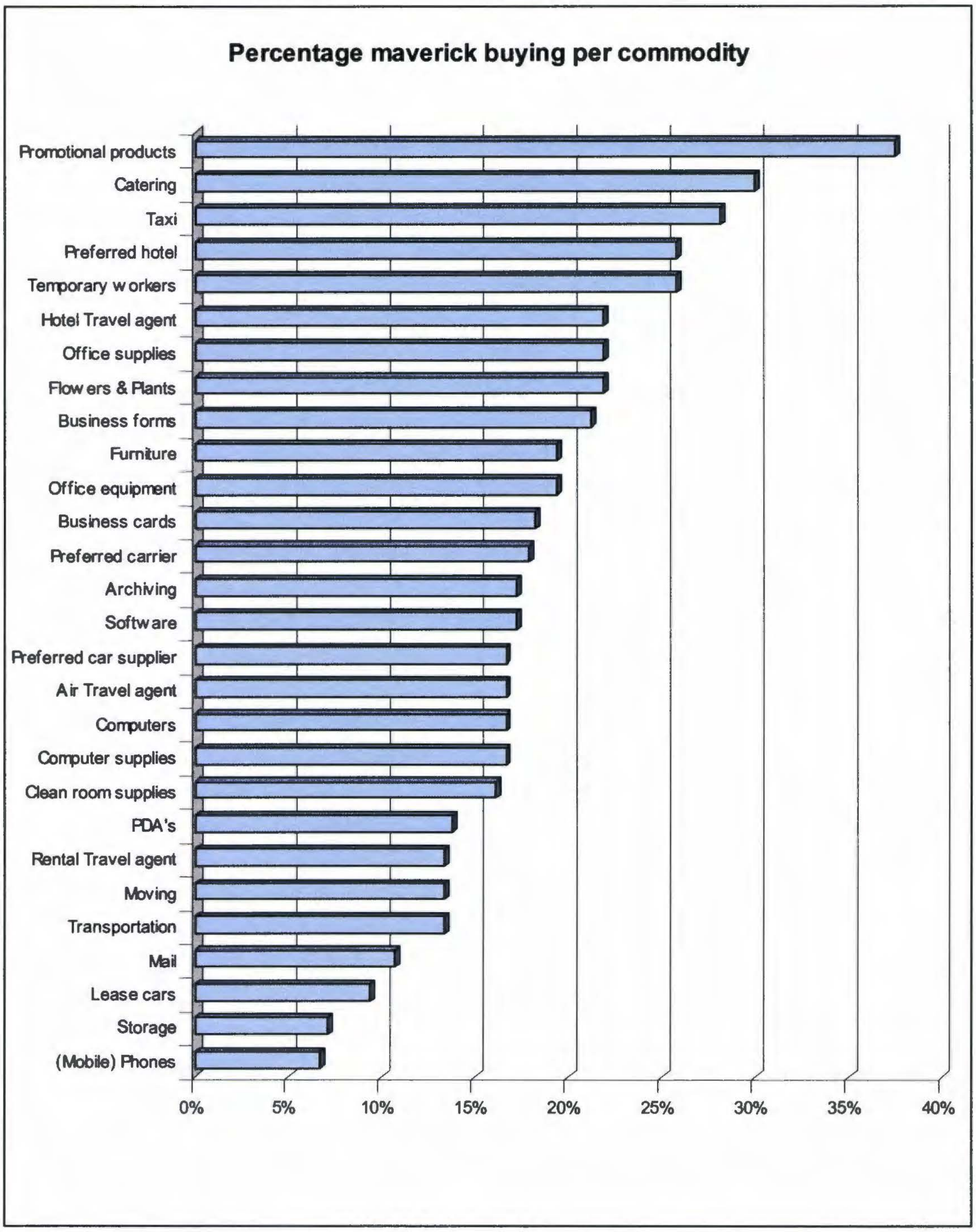

Figure 12-13: Percentage maverick buying per commodity (Source: Survey results)

Appendix 13: Classifying E-procurement

E-procurement can be differentiated in several kinds of e-procurement tools, which are based on different kinds of purchasing activities[2]. Harink described the following e-procurement tools:

- E-ordering
- Web-based ERP
- E-sourcing
- E-tendering
- E-reverse auctioning
- E-informing

E-ordering and Web-based ERP
E-ordering and web-based ERP is the process of creating and approving purchasing requisitions, placing purchase orders as well as receiving goods and services ordered, by using a software system based on internet technology.

In case of *e-ordering* the goods and services ordered are NPR or indirect goods and services. These systems are so called ordering portals- or catalog- systems, which are usually used by relative much employees in an organisation.

In the case of *web-based ERP*; or EDI[3], the goods and services ordered are production related or direct goods and services. Usually these products or services are only being ordered by employees of the purchasing department or the planning department and is mostly based on some kind of MRP forecasting tool in the Enterprise Resource Planning system.

E-sourcing
E-sourcing is the process of identifying new suppliers for a specific spend commodity, using Internet technology. By identifying new suppliers a purchaser can increase the competitiveness in the tactical purchasing process for this spend commodity. Since the existance of internet, the purchasing departments have experienced a globalising in sourcing new suppliers.

E-tendering
E-tendering is the process of sending RFI's and RFP's to suppliers and receiving the responses of suppliers back, using Internet technology. Usually e-tendering is supported by an e-tendering system. Often the e-tendering system also supports the analysis and assessment of responses. E-tendering does not include closing the deal with a supplier. As a matter of fact, e-tendering smoothens a large part of the tactical purchasing process (Van Weele, 1988), without focusing on the content (i.e. spend category) of that process.

[2] Harink, J.H.A. (2004)
[3] EDI stands for Electronic data interchange.

E-reverse auctioning

The e-reverse auction is conducted on-line with pre-qualified suppliers being invited to compete on predetermined and published award criteria, set up during tendering and based on RFI's and RFP's. An e-reverse auction can be on any combination of criteria, normally converted to a 'price equivalent'. Bidders are able to introduce new or improved values to their bids in a visible and competitive internet environment. The procedure and duration of the event will be defined before the Reverse e-auction commences. There will be a starting value that suppliers will bid against until the competition closes. The e-auction will be a key stage in the contracting process.

E-informing

Unlike the previous forms, e-informing is a form of EP that is not directly associated with a phase in the purchasing process like contracting or ordering. E-informing is the process of gathering and distributing purchasing information both from and to internal and external parties, using Internet technology. For example, publishing purchasing management information on an extranet that can be accessed by internal clients and suppliers is a way of e-informing. This form is also called purchasing intelligence or spend control.

Appendix 14: Kraljic's portfolio model

The roots of portfolios are in financial planning; probably one of the most famous portfolios is the Boston Consulting Group (BCG) model (Hedley 1977).
Nowadays, purchasing strategies can be found in a variety of portfolio models, directing strategic recommendations to differentiated purchase segments. The best known is the purchasing portfolio model developed by Kraljic (1983). Kraljic's approach includes the construction of a portfolio matrix that classifies products on the basis of two dimensions: supply risk and impact on financial results. This results in a 2x2 matrix and a classification in four categories: strategic, leverage, bottleneck and routine items, see figure 15-1.

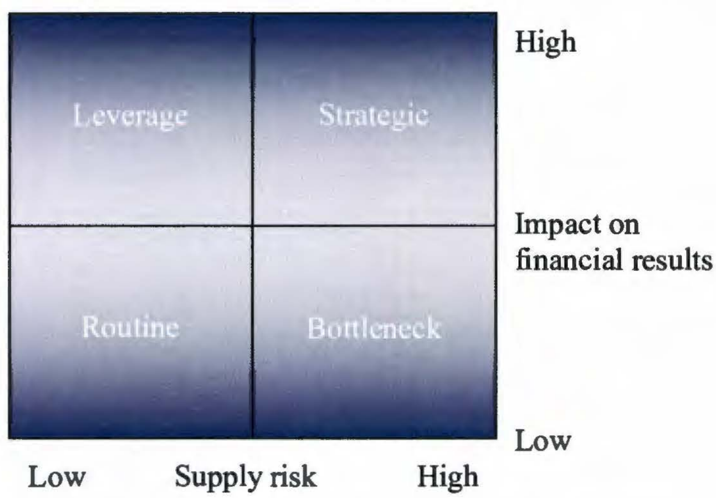

Figure 14-1: Kraljic's portfolio model (Source: Kraljic, 1983)

Strategic products

These are high volume products, which are mainly sourced from one supplier. It also has a great influence on the cost of the end product or service. Examples are the engine of a car, the mixing equipment in plastic industry, the turbines for the chemical industry etc. All these products have been made on the specification of the buying company or have a high degree of customization. In the buying and developments cycle there is a great level of interaction between the two parties. As a precept the 20-80 rule can be used in this quadrant, strategic items form 20% of the items and suppliers, which represents 80% of the total turnover (van Weele 2002).

Leverage products

These products can be sourced from different suppliers and have a high influence on the cost of the product. A change in price of such a component has a relatively high impact on the price of the end product. In this segment the buying party has a certain powerbase and can switch relatively easy. The risk is that the suppliers will agree on their pricing policy. Examples are metals, chemicals, etc.

Bottleneck products

These products can be sourced from one supplier but have a relatively small financial impact. The supplier has a strong dominance towards the buying company. Spare parts are a good example, high pricing and large margins are the result.

Routine products

These are products, which are easy to source. They have a relatively low value and can be replaced by other products from multiple sources. Cleaning products, office supplies, nuts and bolts are example product categories. The handling and administrative costs are a large part of total purchasing costs. Purchasing has a challenge to set up procedures once to minimize costs. Applying the 20-80 rule; routine products usually use 80% of the time and effort of total purchasing capacity, while this quadrant comprises only 20% of the total purchasing value.

Supply strategy

Meanwhile new portfolio models, based on Kraljic', have been developed, like Olsen & Ellram (1997), Bensoau (1999), van Stekelenbrg & Cornelius (1994) and Gelderland & van Weele (2001). They stated the definition of impact on financial results can also be defined in terms of volume purchased, percentage of total purchase cost, impact on product quality, impact on profitability etc. The supply risk on the other hand is assessed in terms of number of suppliers, availability, competitive demand, substitution possibilities, logistic aspects, complexity and so forth. After selecting suitable criteria for both dimensions all purchased items are evaluated and positioned into one of the quadrants of the Kraljic portfolio model.

Category	Objective/Goal
Strategic	Long term performance based relationship
Leverage	Competitive bidding
Bottleneck	Secure supply and search for alternatives
Routine	Reduction of logistics and administrative complexity

Figure 14-2: Goal per Kraljic category

Each of the quadrants has a separate purchasing approach which requires information of different kind for developing suitable supply strategy, see figure 14-2. Also the tasks for the four groups are diverse with regards to the differences in purchasing and supply risks.

What are the corresponding Kraljic quadrants and strategies for Medtronic's product purchases?

Analyzing

In the figure below the positioning in the Kraljic's portfolio is executed by ranking each commodity based on its supply risk and its impact on financial results.

Commodity Group	Commodity	Supply risk 0 = low , 6 = high	Impact on financial result 0 = low , 6 = high	Positioning S = strategic L = leverage B = bottleneck R = routine
Facility Products	Production Supplies	4	6	S
Transport & Freight	Transport/Freight/Postage	3	5	L
HR	Other Profess. Services	4	5	S
Travel & Mobility	Lease Cars	2	4	L
Travel & Mobility	Airfare	2	4	L
Markcom	Convention expenses	4	4	S
Travel & Mobility	Ground Transportation (incl. Rental cars)	1	3	R
HR	Contractors (temp workers)	2	3	R
Facility Products	Machinery and Equipment	3	3	R/B
Facility Service	Maintenance	3	3	R/B
HR	Consultancy	3	3	R
HR	Training/Education & classes	2	3	R
Travel & Mobility	Lodging	1	3	R
Markcom	Printed matter (Marketing & Technical)	3	2	R
ICT	ICT/ Hardware	2	2	R
ICT	Telecom phone costs fixed lines	2	2	R
Facility Products	Office Supplies	1	2	R
ICT	Software	2	2	R
ICT	Mobile equipment and phone costs	1	2	R
Facility Service	Energy (Utilities)	1	2	R
Facility Products	Furniture	1	2	R
ICT	Computer Peripherals	1	2	R
Facility Products	Membership, books and spec. literature	2	2	R

Facility Service	Move	1	2	R
Facility Service	Catering	2	1	R
Facility Products	Equipment rental (Office & other)	2	1	R
Facility Service	Security Services	1	1	R
Facility Service	Cleaning	1	1	R
Facility Service	Waste/ Environment	2	1	R
Facility Service	Lawn Care	1	1	R
Facility Service	Archiving	2	1	R

Conclusion

After analyzing Medtronic's purchased products in the SP&S department, it can be concluded its products are mainly routine products according to the Kraljic portfolio model.

Appendix 15: Three basic catalog models

E-ordering can be split into three basic catalog models, namely[4];

1. Buyer-centric catalog
2. Supplier-centric catalog
3. Third-party or marketplace catalog

Buyer-centric catalog
In a buyer-centric catalog, the catalog is held and maintained by the buying organization. The corporate system aggregates many supplier catalogues into a single company catalog. The buying organization is responsible for receiving, organizing and loading supplier catalog files into the company catalog.

Advantages:
- Maintain control.
- One catalog system.
- Highly customized; based on business policy.
- Fast and easy product search and selection.

Disadvantages:
- Higher maintenance costs.
- Expertise of buying organization.
- Higher implementation investments.

Supplier-centric catalog
In a supplier-centric catalog, the catalog is held and maintained by the suppliers on its company website. The buyers can access these various supplier websites via punch-outs.

Advantages:
- Supplier is responsible for maintenance, updates and implementation costs

Disadvantages:
- Buyer lose control over catalog data
- Multiple catalogs has to learned by the user.
- Buyer must know where to look.
- No company policy in the catalog.

[4] Flynn, A.E. (2004) and Bruins, A., Steen, M.W.A. (2000)

Third-party or marketplace catalog
The third party or marketplace is a procurement portal hosted by the catalog management service company, where selling and buying parties can be connected to each other (many to many connection).

Advantages:

- Extended trading between many organizations.
- Particular useful for organizations that are large purchasers as well as sellers.
- Lowest overall implementation costs of the three models.

Disadvantages:

- Limited ability to determine business policy.
- Generally requirement for subscriptions, maintenance and transaction fees.

Appendix 16: Temporary solution

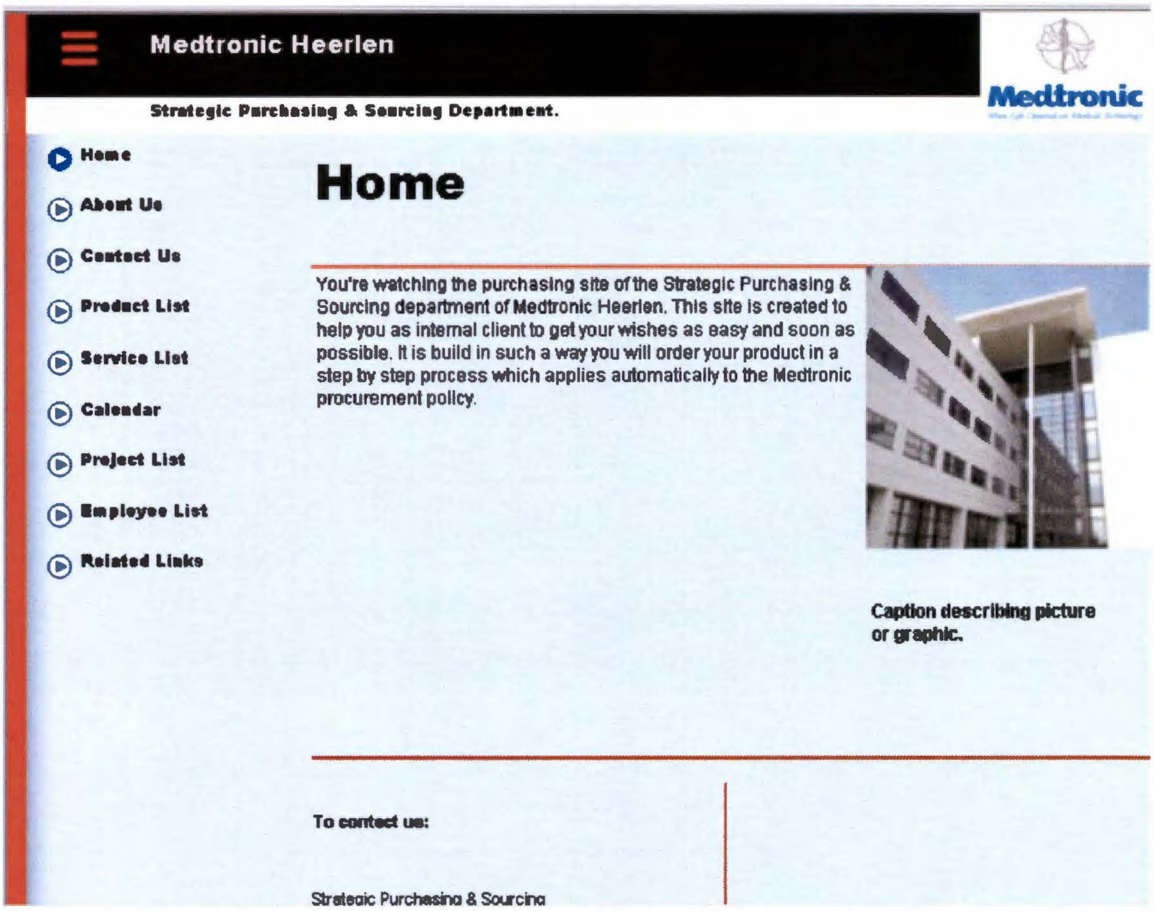

Figure 16-1: Main page of the SP&S web portal

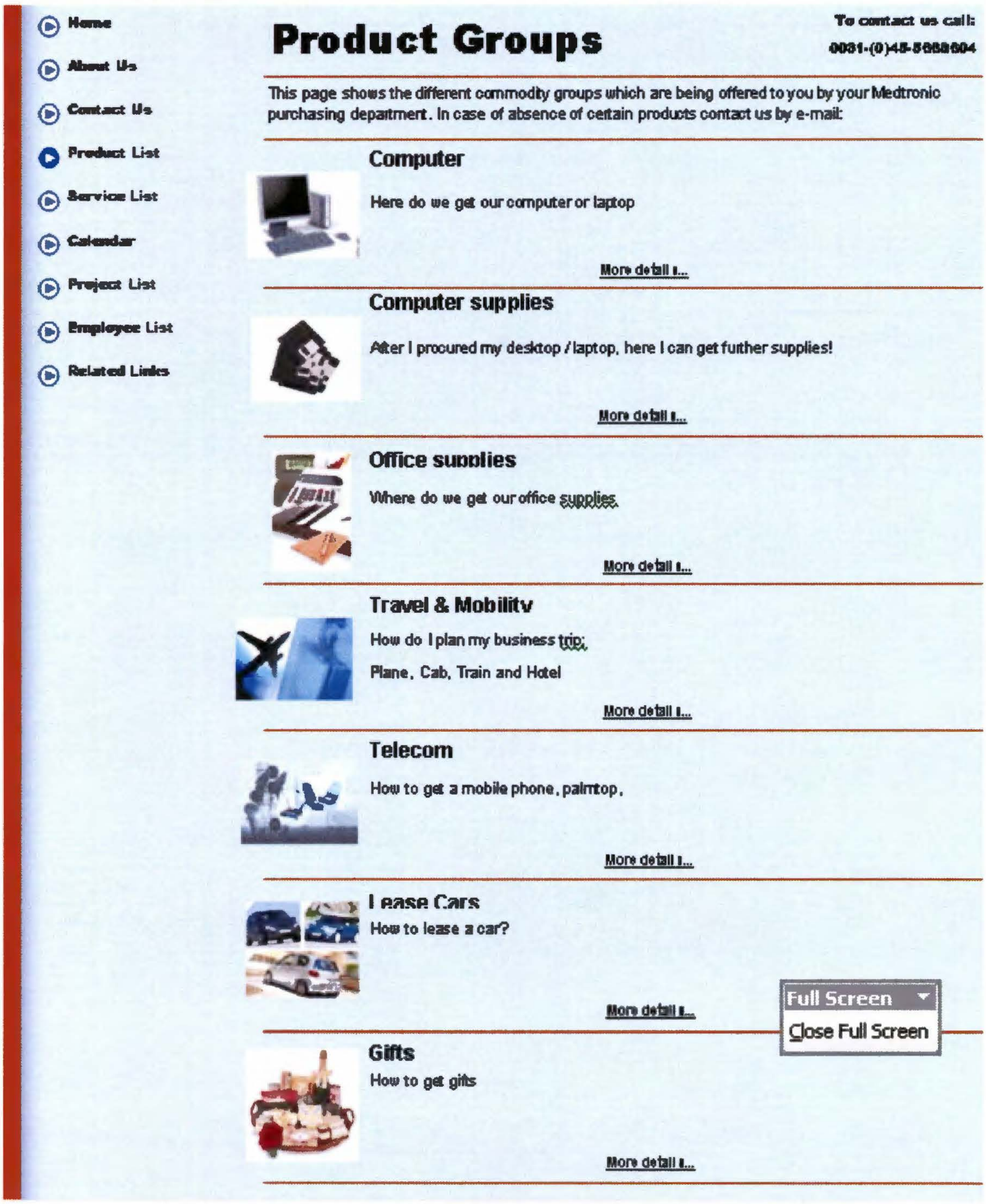

Figure 16-2: Product list of the SP&S web portal

Figure 16-3: Punch out to login e-ordering tool of the preferred suppliers, respectively for; computer peripherals and office supplies

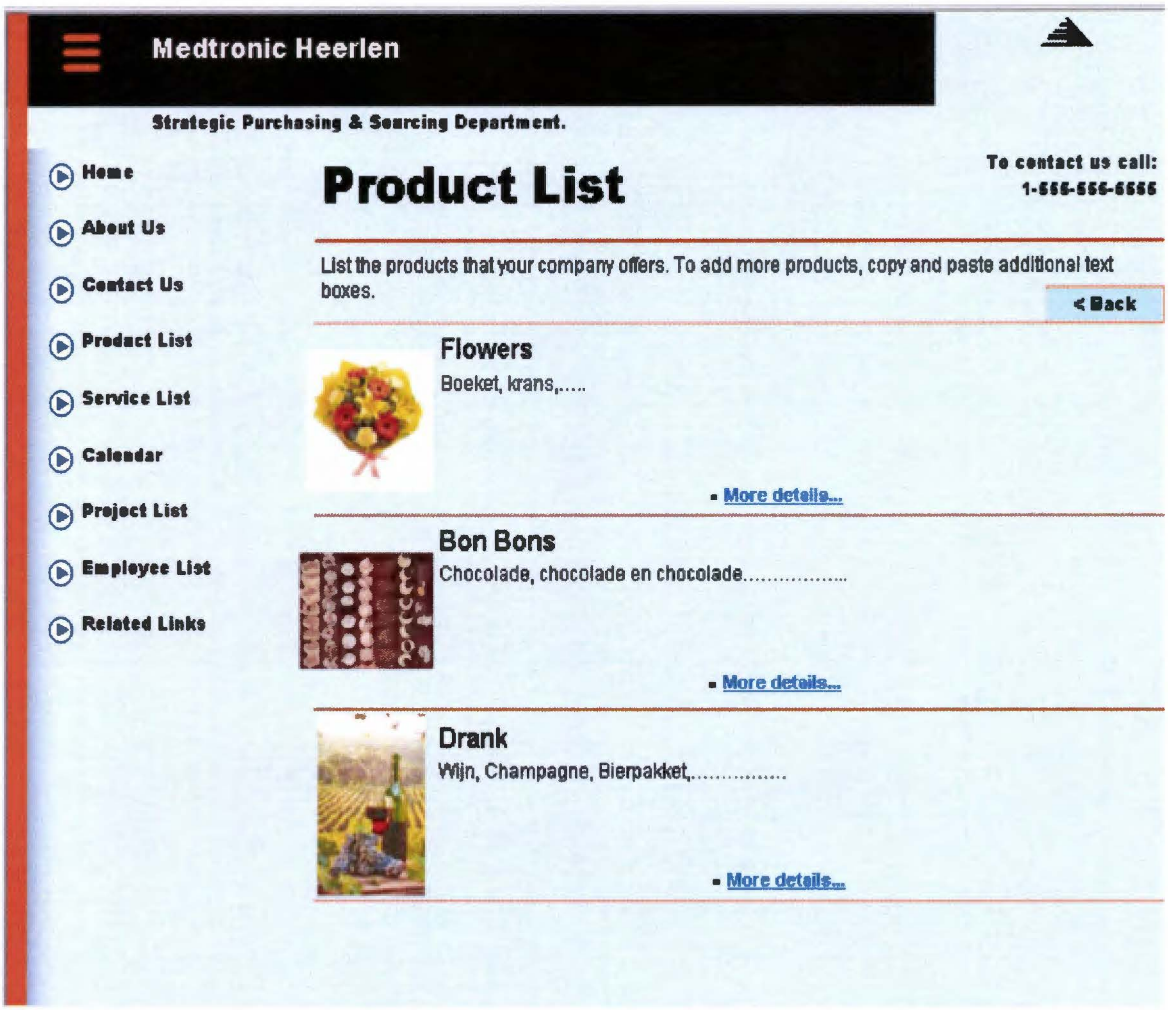

Figure 16-4: Lower level product list; Gifts

Figure 16-5: Order process steps; Flowers