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University of Applied Sciences

Transfer pricing in a case company MedTechnica 1

Ekaterina Olefirenko

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Abstract

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Author or authors Ekaterina Olefirenko	**Group or year of entry** 2010
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Teacher(s) or supervisor(s) Jaana Melamies Maija Suonpää	

Due to companies' internationalization processes, the trade of goods and services within organizations become a reality. As a result, questions about prices for internal customers have arisen. The price which one unit of a company charges for goods or services provided to another unit of the same company is called the transfer price. Currently, the problem of transfer pricing is relevant for large enterprises as well as for medium size companies.

Over the years, this topic has been researched from the tax minimizing point of view. Bearing this in mind, the current study aims to investigate the topic from a managerial accounting point of view.

The theoretical framework of this thesis included three methods of transfer pricing, a discussion on the purpose of transfer prices and criteria for an evaluation of the transfer pricing system. The empirical part was implemented by means of qualitative research methods. Data collection was conducted through interviews and document analysis.

The research illustrated relevant phenomena by providing a case study. The case company was a manufacturing company called MedTechnica 1. The case study focuses on the transfer pricing for the key products of the company. The purpose of this thesis was to apply different transfer pricing methods in the context of MedTechnica 1, and, based on analyses, make suggestions on possible changes in the transfer pricing system.

Keywords
Transfer pricing, responsibility center, transfer pricing methods, qualitative research

Table of contents

1 Introduction

In this chapter I present the essential information about this studys and its structure. First section gives a short explanation on background of the research. Second section gives more information about the aim and purpose of the study. Third section clarifies the research topic and the investigative questions. Fourth section assists to understand the scope of the research. Fifth section outlines definitions and key concepts for the research topic. Section six presents the case company, its history and business. The last section demonstrates the contents of the study and their organisation.

1.1 Background to research

In 1950-1960s companies began to form large multinational corporations due to different reasons, such as globalization process and technology development. Transfers of goods and services from one entity to another entity within a single organizational, in other words internal trade, became a reality. As a result, problems with the evaluation methods of products and transfer prices arose.

In the modern economy, the problem of transfer pricing is relevant not only for large multinational corporations, but also for medium size enterprises. Transfer pricing is an phenomenon, which appeared as a result of the decentralization of the operations within the organization. Decentralization means that separate units (entities) of the organization are given a certain economic and financial independence. Top-management of the corporation makes the decision of what level of freedom and decision-making power can be given to managers of separate units, including freedom in the internal and external pricing policies and the right to choose suppliers and consumers. The question of transfer pricing is important and current in both the industrial sector and the service sector. (Hienmann & Reichlstein 2012.)

For the Russian economy the question of establishing transfer price is relevant. The reason for this is the fact that businesses started to trade more with foreigner companies and, to provide a better customer service or save costs, many companies established subsidiaries outside of Russia. (Dracheva & Libman 2012, 86-88)

Transfer pricing is not widely used today in Russian companies. The reasons for this are instability in economy, undeveloped markets and market institutions in some regions, the high degree of monopolization in certain sectors of the economy. The lack of consolidated information on market transactions and market prices, as well as differences in the taxation laws in different regions of the Russian Federation affect to transfer pricing usage- (Dracheva & Libman 2012,86-88.)

Development of effective transfer pricing is essential for sectors where technologies are changing rapidly, such as electronics, communications, and information systems. It is also important for sectors where new products are developing, for example, pharmaceutical industry. (Dracheva & Libman 2012, 86-88.)

1.2 Research problem

This study is in the field of accounting, more precisely – transfer pricing. Although the research topic narrows the scope of this study to transfer pricing in a case company, there are too many aspects regarding to transfer pricing. To make research more specific and to provide added value to the case company and accounting field of studies I decided to tackle the topic from managerial accounting point of view. Therefore, this research will not cover minimization of tax burden of the case company. The research problem is as follows:

What is the most appropriate transfer pricing method for selected key products of the case company?

The purpose of this thesis is to take a look into transfer pricing of the case company, to analyze it from different aspects, and suggest on the most effective method for setting transfer prices. Following investigative questions are created to divide the problem into smaller blocks, and present the way how this study will tackle the research problem:

1. What key products are transferred within the case company?
2. What is the current transfer pricing system in the case company?
3. How can different transfer pricing methods be applied in the case company?
4. Which transfer pricing method is the most effective method of setting transfer prices of the case company?

1.3 Scope of the research

Over the year economists, accountant professional, and lawyers have conducted research on transfer pricing. The primary focus has been tax consideration, which is not a big surprise, since it is one of the most important topics for multinationals. To bring something new to accounting field of specialization I decided to concentrate on managerial accounting point of view on transfer pricing. It means that this thesis will not cover tax consideration. The other reason for eliminating taxation aspect from current research is that the case company follows Russian accounting system and pay taxes in Russia. The taxation system in Russian Federation is very complex to describe in the scope of Bachelor's thesis.

This paper is a case study, therefore it will look to the problem of transfer pricing from the perspective of the case company MedTechnica 1. One subsidiary of the case company is situated in Belarus, provides this study with an international dimension.

1.4 Definitions of key concepts

Transfer price "is the price one subunit (segment, department, division and so on) of an organization charges for a product or service supplied to another subunit of the same organization." (Bhimani, Horngren, Datar & Rajan 2012, 606). This transfer price is a source of revenue for the "selling" subunit and a purchase cost for the "buying" subunit: this affecting operation profit of both subunits and whole organization. (Bhimani et al. 2012, 606.)

Transferred product " is product transferred from one subunit to another subunit of the same organization" (Bhimani et al. 2012, 606).

The arm's length principle required that transfer prices charged between related parties are equivalent to those that would have been charged between independent parties in the same circumstances" (PWC 2011, 11).

Decentralization is the freedom for managers at lower levels of the organization to make decisions (Horngren, Datar, Rajan 2012, 799)

Responsibility center is "broadly defined as any part of an organization whose manager has control over cost, revenue, or investment funds" (Garrison & Noreen 2003, 529).

1.5 Case company introduction

MedTechnica 1 was established as a result of the merger in July 15, 2002 on the basis of two production enterprises MedTehnotcenter (Russia) and BelMedtechnica (Belarus). Both companies had accumulated vast experience in production, installation and repair services of different medical equipment in health institutions in Russian Federation and the Republic of Belarus.

After merger in 2002 the company launched production of medical equipment, which includes the manufacture of medical and cosmetology equipment, furniture for sitting and sleeping, etc. Currently, the company also manufactures on-demand health care products (on the basis of individual orders). It also carries out research. Currently, MedTechnica 1 Ltd has developed designs and presented prototypes of modules for operating and ancestral rooms, and wards.

MedTechnica 1 has a decentralized structure. Each branch has legal independence and may enter into contracts with suppliers and other affiliates. The head office is located in Saint-Petersburg, and it monitors activities through amendments and approval of business plans. The organizational structure of MedTechnica 1 Ltd. includes a production division in Viriza (small village near Saint-Petersburg), regional subsidiaries in Yekaterinburg, and a Sales and Service Center in Minsk (Belarus).

Customers of MedTechnica 1 Ltd. are medical organizations, such as scientific - practical centers, clinics and health centers, and research institutions. Key activities of the case company are wholesale and retail sale of medical equipment and medical supplies, the production of medical products, and setting-up and maintenance of medical equipment. Reliability and competence of MedTechnica 1 have been confirmed over the years of successful work. Employees of the company are highly skilled professionals with wide experience in the procurement and delivery of medical equipment and medical supplies.

MedTechnica 1 works closely with companies from Russia, Europe, USA, Japan, China, Korea and other countries, which produce medical equipment and supplies. Every year the case company concludes more than 500 foreign trade contracts for the purchase of medical equipment and medical supplies and procures, such as scanners, digital radiography systems, anesthesia and respiratory equipment and ventilators, life support systems, and other.

1.6 Thesis structure

Since this thesis aims to answer previously mentioned investigative questions one by one, the structure of this thesis is similar to the order of investigative questions. The second chapter concentrates more of theoretical aspects of this study and provides information on what is transfer price and transferred product, review the concept of arm's length principal and responsibility center, discusses different transfer pricing methods, compare them, and provide information about transfer pricing in Russia. The third chapter provides information of research methodology, including research method and design,, and data collection methods. Chapter four presents more details about the case company, its operation and transfer pricing. Chapter five illustrates different methods of transfer pricing within the example of the case company. Chapter six provides findings on transfer pricing in the case company, discuses validity of the research, gives suggestions for further research and evaluates my experience during thesis process. Overlay matrix in attachment 1 presents connections between chapters.

2 Theoretical framework

This chapter illustrates key concepts on which this research is based on. The terms are essential for understanding of analyzed theories and the studied phenomenon.

2.1 More on key concepts

Transferred product

Two criteria are used to categorize transferred products. The first criterion determines whether there is a readily-available external market price for the product or not. The second criterion determines whether the buying subunit sells the product "as it is," or whether the transferred product becomes an input in the subunit's own production process. When the transferred product becomes an input in the buying subunit's production process, it is referred to as an intermediate product. Table 1 presents examples of transferred products.

Table 1. Examples of transferred product

	An external market price is available	No external market price is available
The buying subunit sells the product "as it is"	The West Coast Division of a supermarket chain transfers oranges to the Northwest Division, for retail sale.	A pharmaceutical company transfers a drug that is under patent protection, from its manufacturing division to its marketing division.
The buying division will use the transferred product in its own production process	An oil company transfers crude oil from the drilling division to the refinery, to be used in the production of gasoline.	The Parts Division of an appliance manufacturer transfers mechanical components to one of its assembly divisions.

When products or services are transferred in organization from one responsibility center to another one a transfer price determines costs for the buying division and revenue for the selling division. Figure 1 present a typical scenario of how products or services are transferred internally. In this case Division A converts raw materials from external supplier to an intermediate product which is a transferred product. Division A sells the intermediate product to Division B. Then Division B converts the intermediate product into finished product and sells it to external customers. (McWatters, Zimmerman, Morse 2008, 233.)

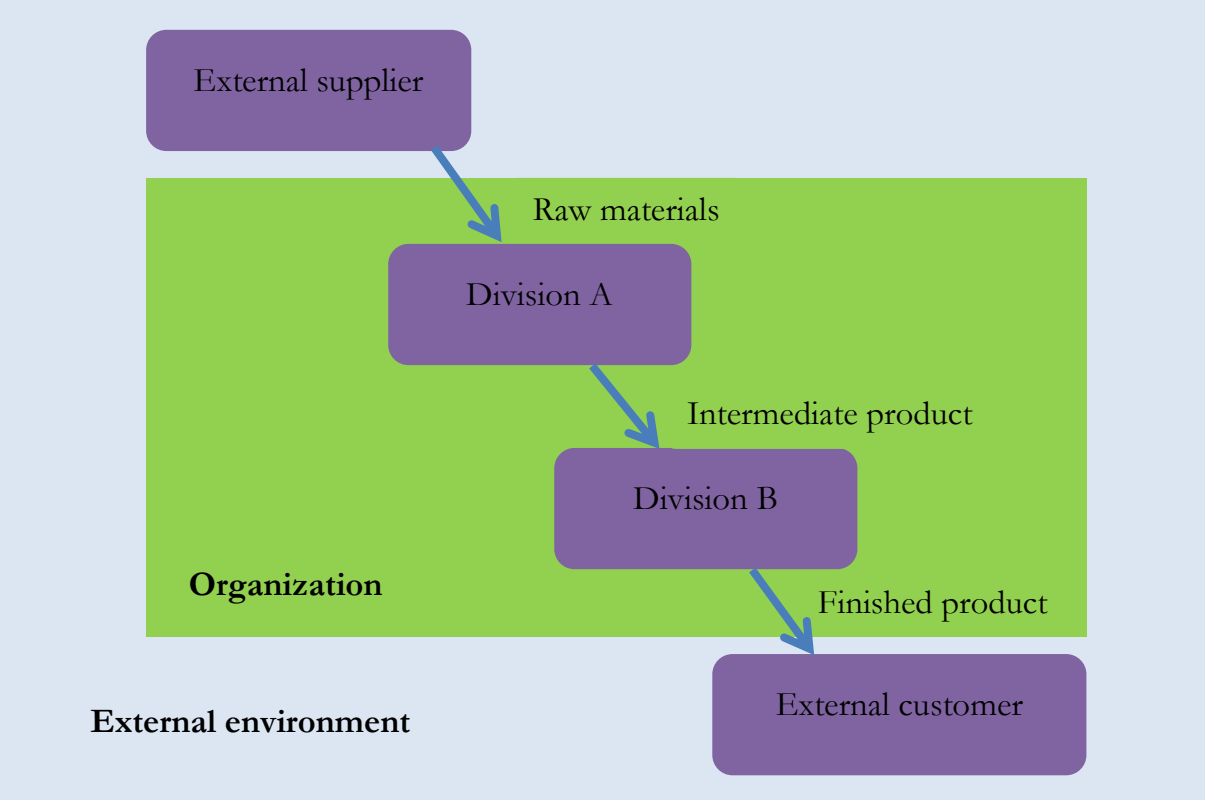

Figure 1. The external and internal transfer of products (McWatters et al. 2008, 233.)

Arm's length principle

The arm's-length principle requires that compensation for any intercompany transaction conforms to the level that would have applied had the transaction taken place between unrelated parties, all other factors remaining the same. Although the principle can be simply stated, the actual determination of arm's-length compensation is notoriously difficult. Important factors influencing the determination of arm's-length com-

pensation include the type of transaction under review as well as the economic circumstances surrounding the transaction. In addition to influencing the amount of the compensation, these factors may also influence the form of the payment. For example, a given value might be structured as a lump-sum payment or a stream of royalty payments made over a predetermined period. (PWC 2011, 19.)

Responsibility centers

Responsibility centers are classified in the following categories:

- Cost center
- Revenue center
- Profit center
- Investment center

(Horngren et al. 2012, 801.)

Cost center is a unit (division), which controls only expenses. These are typical units that do not have direct access to markets, for example, the production department. The target of cost center is to minimize costs of a product (service). Activities are evaluated by the deviations of actual costs from budgeted. (McWatters 208, 221.)

Revenue center is a unit (division), which controls only its income, but is not responsible for the costs. The scope of its authority is limited to the decisions that affect the amount of sales revenue within the established "cost-revenue" structure of the product. The performance of revenue center is evaluated based on the achieved turnover or profit margin. Establishment of revenue center intends to increase movement of goods and optimize sales. Typically inputs and outputs are expressed in euros (or another currency). Revenue center's activities are similar to profit center actives. Managers of this type of center determine and monitor revenue levels, are able control quantities sold and price level. (McWatters 208, 222.)

Profit center is a unit (division), which controls its costs and revenues. This center is evaluated on the basis of profit. It may have a goal of increasing the market share or

the number of orders. Inputs and outputs are expressed in euros (or another currency). Profit center's activities usually are market/customer related and performed for external customers. Management tasks include determination of price levels and cost standards per product, monitoring of turnover, costs and profits per product, and analyzing variances. Main focus is on profit contribution and quality. Such responsibility requires an appropriate degree of freedom in decision making. (McWatters 208, 222.)

Investment center is a unit (division) that controls costs, revenues and investments. Managers of those centres are responsible for the use of equity and debt; and have full autonomy in terms of using company's assets. Investment center's activities are evaluated often in terms of ROI. Inputs and outputs are expressed in euros(or another currency). An investment center usually relates profits to assets. Management activities include determination of minimum required return of investment, monitoring of capital employed and profits per product, and analyzing variances on return on investments; activates that are focused on sustaining long term profitability of the whole organization. (McWatters 208, 223.)

2.2 Transfer pricing methodology

Transfer pricing methodology includes different transfer pricing methods. Each of them has advantages and disadvantages which will be discussed later in this subchapter. A general rule help to take a step in setting transfer price in different situations (Figure 2).

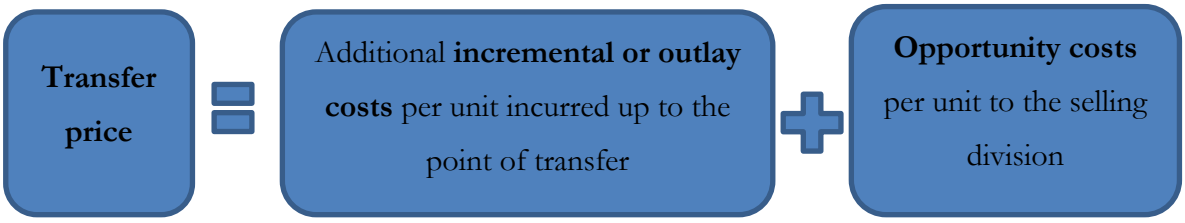

Figure 2. General rule of setting transfer price (Bhimani et al. 2012, 615)

Incremental or outlay costs in the figure above represent the additional costs which are directly associated with the production and transfer of the product or service. Manag-

ers compare two alternatives: first one is the existing situation and second one is a proposed alternative, and analyze different levels of cost. (Bhimani et al. 2012, 615; Horngren et al.2011, 243.)

Opportunity cost in the figure above is the benefit forgone by using resources that a company already own or has already committed to purchase for a particular purpose instead of the best alternative use. Those costs are essential for the selling division, since they must be paid by the selling division to be able to produce and transfer products or services to another division. Opportunity cost is a profit contribution that selling division passes when transferring goods internally. (Horngren et al. 2011, 243, 418.)

There is no universally optimal transfer price, but this rule provides a benchmark by which to judge and compare different transfer-pricing methods. Attachment 2 gives an overview of different methods which are used when setting transfer prices.

There are many methods of setting transfer prices. Table 2 present data on what transfer pricing methods are used in Russia. Table 2 shows that 26 percent of companies use market-based transfer pricing method, 59 percent use cost-based transfer pricing: methods, 10 percent use negotiated transfer prices and 5 percent use other methods. (Kosmachev 2011, 98).

Table 2. Transfer pricing methods usage in Russia (Kosmachev 2011, 98).

Methods	Percentage of respondents suing the method
Market -based transfer pricing	**26%**
Cost based trasfer pricing	**59%**
Variable cost	10%
Full cost	42%
Other	7%
Negotiated	**10%**
Other	5%
Total	**100%**

From 59 percent of companies which use cost-based transfer prices, 10 percent use variable cost transfer pricing method, 42 percent full-cost transfer pricing method and 7 percent other transfer pricing methods (Kosmachev 2011, 98).

2.2.1 Market –based method

Market –based method mean, that when setting transfer pricing, company's management uses the price of similar product or service listed publicly, for example on a trade association web site. Also, the transfer price can be set as the external price that a supplying division charges for intermediate product to outside customers, or the price a competitor is offering. (Garrison & Noreen 2003, 559.)

This approach is designed for the situation when there is an outside market for the transferred product or service. The product or service is sold to internal customer in the same form as for external customers. This approach is ideal in some cases. The reason for this is that, whether product is sold outside or transferred inside the production costs are same. If the market price is used as the transfer price, the selling division will gain same profit. It also gives an idea for the buying division on how much it really costs to the company to make the transfer happen. (Garrison & Noreen 2003, 559.)

2.2.2 Cost – based methods

Use of cost – based methods means that a company's management sets the transfer price based on costs of production. This approach of setting transfer prices is relatively simple and is used in many companies. The transfer price can be based on variable production cost or full cost. Sometimes a transfer price includes a mark-up or profit margin. Some of the companies use standard costs, and some other use actual costs. (Horngren et al. 2011, 421.)

Transfer price at variable cost

When variable costs are used as transfer price, a company's management implicitly assumes that the selling division has no opportunity cost. This method is used in situations when the selling division does not lose any opportunities when it transfers goods

internally. For example, if the selling division has large plant capacity which is not used in full. (Horngren et.al 2011, 421.)

Transfer price at full cost or full cost plus profit

Transfer price at full-cost includes not only variable cost but also an allocated part of fixed costs. Some companies, as it was mentioned before, add a mark-up or profit. In this case company's management assumes that allocated fixed costs (and additional mark-up or profit)equal to possible opportunity costs of the selling division. When the selling division has limited capacity and cannot satisfy all internal and external demand for its products, the opportunity cost is positive. In such cases, transfer prices at variable-cost are questionable. Nevertheless, there is no guarantee that an allocation of fixed costs, with or without an additional profit or mark-up, presents a fair approximation of the opportunity cost. Yet, the opportunity cost is better represented than in case of assuming a zero level (transfer price at variable cost method). (Horngren et.al 2011, 421.)

2.2.3 Negotiated method

A negotiated transfer price is a result of a discussion between a selling anda buying division. The use of negotiate transfer pricing method means that a discussion between managers, who are involved in a proposed transfer, takes place within the company. At the meeting they agree on the terms and conditions of the transfer, including transfer price. In this case, the exact transfer price is hard to predict. However, the price meets following two principals: the profit of the selling division will increase as a result of the transfer, as well as, the profit of buying division. Otherwise, managers of the divisions will not agree on transfer price. This seems obvious, but it is an important point. (Garrison & Noreen 2003, 555.)

If the transfer price is below the selling division's cost, it will result into loss for the division, and managers of the division will refuse to agree on the transfer. Likewise, if the transfer price is too high, it will be difficult for the buying division to make a profit on the transferred product, and managers of the division will refuse to agree on the transfer. When negotiated pricing method is used, the price for any proposed transfer

can fall anywhere between two limits: upper limit, which reflects the situation of the buying division and lower limit which reflects the situation of the selling division. These limits present **the range of acceptable transfer prices**. Within this range both of the participants in transfer will get profit. (Garrison & Noreen 2003, 555.)

2.2.4 Purpose of transfer prices

Transfer prices should support a company to achieve its strategy and goals, as well as fit to the organization structure. Transfer price influences performances of both units involved in internal transaction, for example, it affects those units operating profit. In some companies profit is used to evaluate a unit performance and to motivate managers of units. (Horngren et al. 2012, 802.)

Transfer is an activity within an organization. It seems that it does not influence external transactions of units, since units are not buying or selling transferred products in open-market. Nevertheless it affects the market position of the whole company. Effective and rational transfer pricing system allows units' managers to focus on decisions which are affecting their units, without adjusting them and evaluating their impact to the company's performance. This makes information-processing and decision – making easier for managers of units. Decisions which have positive effect on unit's performance simultaneously have positive effect on the company's performance as whole. (Horngren et al. 2012, 802.)

Four criteria are used to evaluate transfer pricing system:

- How well transfer price promotes goal congruence,
- How well transfer price drives managers to exert a high level of effort,
- How well transfer price helps top managers to evaluate the performance of individual units,
- How well transfer price supports units' autonomy in decision making.
  (Horngren et al. 2012, 802.)

2.2.5 Analysis of different transfer pricing methods

Each of transfer pricing methods mentioned previously has its advantages and disadvantages. This section presents an analysis of those methods. The analysis represents a point of view of a company which has multiple divisions, which transfer goods or services to one another, and company's management wants to protect the autonomy of units in decentralized operations.

Market-based transfer pricing

The use of market-based transfer pricing methods offers several advantages. First of all market prices show the opportunity cost to the transferring unit of not selling product on the external market. This encourages management to use the company's scare resources more efficient. Second, usage of this method helps to find out which operations are profitable and unprofitable. Finally, market-based prices are easier to defend to tax authorities. (Choi & Meek 2011, 453.)

The disadvantages of market-based transfer prices should also considered. Usage of market prices gives limited space for a company to adjust prices for competitive or strategic purposes. It can be hard to define prices since sometimes there is no market for an intermediate product or service, for example when a company transfers a valuable, unique, high-tech product. (Choi & Meek 2011, 453.)

Cost-based transfer pricing

Cost – based transfer pricing systems have a number of advantages. They are simple to use and based on readily available data. They are easy to justify to tax authorities and to implement. Cost – based transfer pricing systems overcome some of the market-based transfer pricing system's limitations. Nevertheless there are certain disadvantages when cost-based transfer pricing system are used. First, this system does not encourage management of transferring unit to pay more attention on cost control, since products or services are sold at actual cost (or cost plus markup). Second, cost – based systems do not take into account demand-supply relationship on the market. Additionally, if costs are used as the transfer price, the selling division will never show a profit on any internal transfer. The only division that can show a profit is the division that salles

goods to external customers. Furthermore, cost accounting differs from country to country, so the problem of cost determination arises. (Choi & Meek 2011, 453; Garrison & Noreen 2003, 559.)

Negotiated transfer pricing

Negotiated transfer prices have several advantages. First of all, this method preserves the autonomy of the divisions, which is important for a decentralized structure. Second, many cases managers of the divisions in have much better information about the potential costs and benefits of the transfer compared to others in the company. (Garrison & Noreen 2003, 555 -558.)

It is important to consider some disadvantages as well. Not all managers can correctly evaluate their business or are not cooperative. As a result, negotiations sometimes break down. Sometimes that is the fault of the way managers are evaluated: if managers are compared with each other rather than their own past performance or reasonable benchmarks, a noncooperative atmosphere is guaranteed. Besides this, some people are not cooperative by nature, even with a fair evaluation system. (Garrison & Noreen 2003, 558.)

2.3 Transfer pricing in Russia

The problem of transfer pricing system's implementation in Russia is closely related to the lack of technological base which assists fast and effective exchange of information during the development of transfer pricing system. Therefore, companies who implement transfer pricing system in the country first have to introduce complex information systems. Those systems allow tracking of all activates in different units, as well as, support easy information exchange among units in different countries and cities. (Dracheva & Libman 2012, 87-90).

The most commonly used information systems, for companies who use transfer pricing, are SAP and Baan. Providers of this software have their information and service centers, where potential customers can learn about the software and take courses on relevant issues. The products of these companies are well adapted to realities in market.

This type of software includes modules for calculating transfer prices in a structure, which enables companies to get easy start with tracking of internal transfers. (Dracheva & Libman 2012, 89.)

Transfer pricing is important for large industrial companies, companies involved in wholesale deliveries and companies in medical industries. For example, large pharmaceutical companies, who are engaged in wholesale of drugs, face challenges when cooperating with customs and transporting goods. To solve this problem, companies are forced to merge departments of purchases and sales with customs and logistics departments. This enables to build an information space in which it is possible to set transfer prices for different products. Of course, it requires a comprehensive and very effective information exchange system. (Dracheva & Libman 2012, 89-90.)

According to statistics, only 19% of large Russian companies use a system of transfer prices, another 21% are implementing one, and the rest are not using transfer pricing at all. The current state of the transfer pricing systems in companies effect negatively to Russia's investment climate, which is not exactly competitive due to political and economic instability and other reasons. The resolving of this problem can significantly improve position of Russia in the global market. (Dracheva & Libman 2012, 90.)

3 Research methodology

Research is a process that involves collecting information, its examination, analysis and reporting. Reasons and purpose for research can vary, but any research has three basic components:

1. The question
2. The research process
3. The answer

(Matthews& Ross 2010, 7-9.)

In subchapter 1.2 I presented investigative questions for this study which are the first component of this research. Current chapter explains the second component – the research process. The first subchapter looks into research method chosen for this study. The second subchapter discusses the research design. The third subchapter describes what methods I used for data collection and analyses their strengths and weaknesses.

3.1 Research method

Research method is "a way of conducting and implementing research" (Adam, Khan, Raeside, White. 2007, 25). The choice of research data collection methods is based on research question, the scope of research and interests of the researcher. Basically, there are two research methods: qualitative and quantitative. Quantitative research methods "are concerned with gathering and working with data that is structured and can be represented numerically". Qualitative research methods "are primarily concerned with stories and account including subjective understanding, feeling, opinion." (Matthews & Ross 2010, 142-143.)

I chose the quantitative research method, as I think it is the most appropriate for this study. In qualitative research, points of view of participants play key role and provide the point of orientation for the researcher. Close involvement with the people being investigated and the researcher is important when using this method. Qualitative research is often described as attuned to the unfolding of events over the time. It opens

up interconnections between the actions of participants of social settings. The qualitative researcher aims to understand behavior, values, and beliefs in terms of research context. Investigative questions are answered by describing and explaining event and gathering participants understanding and experiences. In this method the researcher does not know what exactly he is looking for, but he has a general idea about it. (Matthews & Ross 2010, 142; Bell & Bryman 2011, 402-412.)

The qualitative researcher gathers and works with data that is constructed by research participants in their own way. This data is interpreted and structured by the researcher as a part of analysis. The following are data collection methods often used in qualitative research:

- Participant (ethnography) and non-participant observation
- Qualitative (semi-structured/unstructured) interviewing
- Focus group
- Narrative
- Collection and qualitative analysis of texts and documents

(Matthews & Ross 2010, 147; Bell & Bryman 2011, 389.)

3.2 Research design

There are four major types of research design: experimental, cross- sectional, longitudinal and case studies. This research is a case study. Case study research is "a process of conducting systematic, critical inquiry into a phenomenon of chose and generating understating to contribute to cumulative public knowledge of the topic"(Simons 2009, 18). The subject of this case study is the company MedTechnica 1.

It is important to understand strengths and limitations of the case study as a research design. Case study using qualitative method in particular enables to view the phenomenon from multiple perspectives, explore contrasted viewpoints, and demonstrate the influence of key actors and interactions between them. It gives opportunity to the researcher to explore and understand the process and dynamic of change. Case study is flexible research design. Moreover, it is not time-dependent, since it can be conducted

in few days, month or over several years and be presented in appropriate to the time-scale form and length. It can include different data collection methods and has the potential to engage participants in the research process. Case study provides opportunity for the researcher to take a self-reflexive approach to understating the case and themselves. (Simons 2009, 23.)

Nevertheless, case study, as a research design, has some limitations and weaknesses. Sometimes the mass of data accumulated during the research is difficult to process, and report. Analysis of the data includes personal involvement and/or subjectivity of the researcher. The case study is locked in time while people in it have moved on. I recognized limitations of the case study design and found ways to minimize their effects on this research. For example, I will provide essential information in this thesis report, to make it easy to read. Also, I worked closely with all participants to understand what facts and experiences are the most crucial for them, and make analysis and research results useful for the case company. (Simons 2009, 23-24.)

3.3 Data collection.

In this study I used two data collection methods: semi-structured interviews and documentary analysis. Following sections describe each method and its implication in the current research. Every data collection method has advantages and disadvantages, and it is crucial for the researcher to acknowledge them. Therefore, this subchapter also presents advantages and disadvantages of methods I used in this study.

3.3.1 Interviews

An interview is a conversation between two or more people. Often interviews are controlled by one person (interviewer) who asks questions from another person (interviewee). Interviews differ depending on their degree of structure and standardization. Generally speaking, there are three types of interviews: structured, semi-structured and unstructured interviews. Structured interview present participants with set of answers, from which to choose. Semi-structured interviews allow participant to use their own words in discussion of a topic or questions. Unstructured interviews focus on a broad

area for discussion and enable participants to talk about the topic in their own way using their own words. (Matthews & Ross 2010, 220-221; Bell & Bryman 2011,467,472.)

In this research interviews facilitate direct communication between me and the case company management. I used semi-structured interviews, which means that I followed a common set of questions for each interview.

Here are some advantages of semi-structured interviews which I took into consideration. Semi-structure interviews are very useful for exploring topics within the research participants, discussing their experiences and feelings. This data collection method is flexible and allows participants to talk about research topics in their own words. Some structure ensures that same research topics are covered with all participants. It is easy to combine semi-structured interviews with other data collection methods. (Matthews & Ross 2010, 220-221; Bell & Bryman 2011,467,472.)

Nevertheless, this data collection methods has several disadvantages. Data collection is time consuming and participants may focus on issues that are not of interest to the researcher. This method generates large amount of "raw" data. The researcher needs to develop interviewing skills. (Matthews & Ross 2010, 233.)

Before each interview I agreed with participants that interview can take at maximum 1,5 hour and sent an e-mail with information about the aim of this study and interview. This ensured that there is a time limit for data collection and participants will be focused on relevant issues. I have some experience in taking interviews what helped me to overcome difficulties connected to the interviewing process. I also used some tips for successful interviewing and recording of interviews by Matthews & Ross (2010, 231-232).

In the interviews, I introduced topics and questions in different ways and order for each interview, depending on the position of the person in the case company. It enabled me to get necessary information, different opinions and experiences from interviewees. I got a clear view on the case company is current transfer pricing system and

goals for the new transfer pricing system. I interviewed people face-to-face and via phone.

I decided to conduct interviews with all parties involved in transfers between Russia and Belarus: the head office in Saint-Petersburg, the production unit in Viriza and the Sales and Service Center in Minsk. Table 3 below represents information on the interviews: the dates of interviews, and name and position of the interviewee in the company.

Table 3. Interviews

Date of interview	Name	Position in the company
29.05.2012	Scvorcov Valerij	Chief Financial Officer
15.06.2012	Andreev Alexansandr	Senior Bookkeeper
20.06.2012	Komarov Evgenij	Production Unit Director
12.07.2012	Kondrashev Petr	Sales and Service Center Director

Chief Financial Officer and Senior Bookkeeper represent the opinion of the head office. In MedTechnica 1 Chief Financial Officer (CFO) is responsible for managing financial risks of the company, financial planning and financial reporting to higher management, as well as analysis of the financial statements. CFO is taking an active role in the shaping of the company's strategy and assisting in decision making process to enable the company to operate more effectively and efficiently. Because of mentioned facts, it was crucial to get the opinion of CFO of the company.

Senior Bookkeeper was interviewed because he records the company's transactions and takes care about general and subsidiaries' ledgers, playing an important role in financial reporting process. He ensures that the company is following the Russian bookkeeping principals and the Bookkeeping and Accounting Act, as well as other relevant acts. Senior Bookkeeper is also responsible for preparing monthly ledger balance and ensuring that business units' financial statement are correct. Senior bookkeeper prepares the consolidated financial statements of the whole company, and makes sure that all necessary eliminations of internal sales and purchases, internal margins etc. are correctly represented.

Production Unit Director oversees operations of the production unit. He focuses on the development and growth of the unit, administers the work of the unit, ensures that it work in accordance with plans and supply contracts. He also organizes operational control over the production of technical documentation, equipment, tools and components. Production Unit Director organizes the development of measures to improve operational planning and a constant quality growth of products. The Production Unit sells its products to external customers, so the Production Unit Director is also responsible for sales planning and execution of the sales plan. This unit transfers products to Sales and Service Center in Belarus. The interview with Production Unit Director enabled me to analyze the transfer pricing system, its influence on the performance of this unit, and to discuss strength and weaknesses of the current transfer pricing system.

Sales and Service Center Director oversees the operation of the unit. He focuses on the management of company's operation in Belarus. It includes planning of sales strategy, setting profit – based sales targets, analyzing o current market situation and forecasting of demand. Sales and Service Center Director ensures that unit is following marketing and strategic plans of the whole company, and business plan of this unit. This unit purchases its products from the production unit in Russia. The interview with Sales and Service Center Director enabled me to analyze the transfer pricing system, its influence to the performance of this unit and to get an opinion on what should be developed in the transfer pricing system.

With all interviewees I discussed the following questions:

1. How does the transfer pricing policy influence performance of your division? How? (are there some issues with planning budgets or evaluating performance, what about information flow, addition documents requirements)
2 What are the weaknesses of the current transfer pricing system in your opinion?
3. What are the strengths of the current transfer pricing system in your opinion?
4. What are the key challenges for you when dealing with transfer pricing?
5. How do you evaluate current transfer pricing system in the company?
6. What changes would you like to see in the transfer pricing system?

3.3.2 Documentary data

Documents are "written records about people and things that are generated through the process of living" (Matthews& Ross 2010, 277). Documents usually have a specific context and are fixed to the time that they are written. Documents can contain different types of data: new, numerical data, police report, personal information etc. Compared to other data collection methods, document analysis data is static and represents situation of a particular time. (Matthews & Ross 2010, 277-278.)

Documentary data collection method has several advantages. Documents are readily available and contain large amounts of information in written form. They are long-lived, so can be researched across time. Documentary data is useful to provide context to the research. However, the researcher also needs to understand disadvantages of using documentary data. For example, documents can be lost or altered. Definitions and terms used in documents can change over time, so the things documents refer and relate to also change. Documentary data can be misleading if the full context is unknown. It is sometime difficult to gain access to some documents, what makes the researcher to rely on public-domain documents alone. Documents which are listed in terh public domain, such as company annual reports, may not represent an accurate information of how different participants in the organization perceive the situation in which they are involved. (Matthews & Ross 2010, 281-283; Bell & Bryman 2011, 550-551.)

During the research I collected data from different business areas of the case company MedTechnica 1. Table 4 presents information on what documents I analyzed and what were the goals of the analysis.

Table 4. List of documents

Document	Goal of analysis	Description
Transfer pricing manual	To understand the current transfer pricing system in the case company	14 pages paper document
Strategic plan	To analyze company's strategy and key performance measurements	35 pages paper document
Accounts Journals	To get information on internal transfers, sales of the company and its subsidiaries, variable and fixed costs and prices	Printed form from accounting and bookkeeping program "1C. Enterprise"
MedTechnica 1 Sales Report 2010	To get information on sales in MedTechnica 1 in year 2010	28 pages paper document
MedTechnica 1 Sales Report 2011	To get information on sales in MedTechnica 1 in year 2011	32 pages paper document
MedTechnica 1 Sales Report 2012	To get information on sales in MedTechnica 1 in year 2012	31 pages paper document
MedTechnica 1 Sales Report Third Quarter 2012	To get information on variable and fixed costs of products and average selling prices in the third quarter	48 pages paper document

First, I reviewed the transfer pricing manual of the company to get a deep understanding of the current situation. Second, I collected financial sales data of years 2010-2012. Information of sales in the documents was presented in rubles. To make it easier for the reader to understand it I present all data in euro equivalent (1 EUR= 40 rubles). I collected data on actual costs of the company for the third quarter 2012. This information is necessary to be able to make calculations for different transfer pricing methods.

4 Transfer pricing in case company

In this chapter I discuss deeper on what are the operations in the case company and the nature of internal transfers. First subchapter represents the answer to the investigative question 1. Second subchapter answers to investigative question 2.

4.1 MedTechnica 1 operations and internal transfers

MedTechnica 1 Ltd. has 3 key business areas: medical equipment, cosmetology equipment and supplementary service. The table below and Attachment 1 present information about different areas of business in MedTechnica 1, and their sales for period 2010-2012 and contribution to total sales of the company.

Table. 5. Sales of MedTechnica 1 in years 2010-2012 (MedTechnica 1 Sales Reports 2010-2012)

Category	Percentage on sales, %		
	2010	2011	2012
Medical equipment	**70**	**72.7**	**81.2**
Ultra-sound scanners	37.8	40.5	43.2
X-ray equipment	26.9	27.1	35.7
Medical furniture	5.3	5,1	2.3
Cosmetology equipment	**18.7**	**14.8**	**10.8**
Spa equipment	6.5	3.5	4.1
Massage tables	6.3	7.1	5.5
Body massage apparatuses	5.9	4.2	1.2
Supplementary services	**11.3**	**12.5**	**8**
Total	100	100	100

Table 5 shows that the share of medical equipment area of business is growing over the years, starting from 70 percent in 2010 till 81.2 percent in 2012. On the other hand the share of cosmetology equipment is going down from 18.7 percent in 2010 to 10.8 percent in 2012. The share of supplementary services is also decreasing and accounts

only to 8 percent of total sales. It is important to mention that the total sales of MedTechnica 1 grew over the years from 1 642 500 EUR in 2012 to 2 482 500 EUR in 2012. The medical equipment area's sales grew from 1 149 750 EUR to 2 015 790 EUR, which means almost 200 percent growth, including increase in sales of Ultra-sound scanner form 620 865 EUR to 102 440 EUR, and X-ray equipment growth from 441 833 EUR to 886 253 EUR. However, total sales in cosmetology equipment decreased from 307 148 EUR to 268 110 EUR. Sales of massage tables increased from 130 478 EUR to 136 568 EUR. The biggest decrease was in body massage apparatuses sales. In conclusion, the medical equipment area is the most important for the case company, since it has the biggest growth in absolute number of total sales and has the biggest share in total sales.

Since the study concentrates on transfers between units in Russia and Belarus, let us have a look at how big is the share of transfers in total sales of the parent company. The table 6 and attachment 3 presents datas from different business areas and includes percentage of sales in domestic market, including internal trade to other units in Russia, and percentage of internal trade to Belarus. It helps to understand the importance of transfers in the case company.

Table 6. Sales and transfers to Belarus MedTechnica 1 in years 2010-2012. (MedTechnica 1 Sales Reports 2010-2012)

Category	Percentage on sales, %		
	2010	2011	2012
Medical equipment	70.0	72.7	81.2
Sales in Russia	64.6	60.9	58.7
Transfers to Belarus	5.4	11.8	22.5
Cosmetology equipment	18.7	14.8	10.8
Sales in Russia	15.7	11.0	6.4
Transfers to Belarus	3.0	3.8	4.4
Supplementary services	11.3	12.5	8.0
Sales in Russia	11.3	12.5	8.0
Transfers to Belarus	0.0	0.0	0.0
Total	100.0	100.0	100.0
Sales in Russia	91.6	84.4	73.1
Transfers to Belarus	**8.4**	**15.6**	**26.9**

The table 6 clearly shows a significant growth of transfers to Belarus from 8,4 percent in 2010 to 26,9 percent in 2012. The increase in sales is observed not only in relative terms but also in absolute terms. Most of the transfers are in medical equipment category (22.5 percent in 2012). Transfers in cosmetology equipment category account to 4.4 percent in 2012. There are no transfers of supplementary services. In conclusion, from information mentioned above, over the years the results of subsidiaries influence more and more the results of the company.

4.2 Current system of transfer pricing in case company.

The transfer price in MedTechnica 1 is based on full costs of the production unit. It means that managers of the production unit, which is the selling division in this case, are not that much interested in the final result of the unit, since big percentage of finished goods are transferred within the case company. The Production Unit gains no

profit from transfers. It also means that managers of Sales and Service Center, which is the buying division in this case, are getting finished goods in a low price, what makes it easier to gain profit and be competitive on market.

Top-management of Medtechnica 1 overlooked one of the possibilities to influence the performance of the company, by use of transfer price, which will allow taking into account the interests of all units in the business. Properly installed, it prompts the parent company or the manager of the branch management to make decisions that are optimal for the firm as a whole.

5 Application of transfer pricing methods in the case company

I described three methods for setting transfer prices: a market-based, cost-based, and negotiated. In this chapter I present a possible application of those transfer pricing methods in MedTechnica 1.

Current activities of Sales and Service Center are selling of medical and cosmetology equipment, and provision of supplementary services. Table 7 and Attachment 4 represent the sales of this subsidiary, as well as, its dynamic over the years 2010-2012.

Table 7. Sales of Sales and Service Center by category (2010-2012) (MedTechnica 1 Sales Reports 2010-2012)

Category	Percentage on total sales, %		
	2010	**2011**	**2012**
Medical equipment	**58.9**	**61.7**	**59.5**
Ultra-sound scanners	38.8	40.6	39.2
X-ray equipment	20.2	21.1	20.3
Medical furniture	0.0	0.0	0.0
Cosmetology equipment	**27.7**	**22.6**	**25.4**
Spa equipment	12.1	11.1	12.6
Massage tables	8.7	6.4	5.4
Body massage apparatuses	6.9	5.2	7.3
Supplementary services	13.4	15.7	15.1
Total	100.0	100.0	100.0

Sales of the subsidiary grew over the years from 137 970 EUR in 2012 to 667 793 EUR in 2012. Absolute growth happened in all categories. Sales of medical equipment grew from 81 319 EUR in 2010 to 397 336 EUR in 2012 Cosmetology equipment sales increased from 38 162 EUR in 2012 to 169 619 EUR in 2012 Supplementary service sales grew from 18 488 EUR in 2010 to 100 836 EUR in 2012.

Table 7 shows that sales of medical equipment play important role for the company, since its percentage of sales was 58.9 in 2010 and grew up to 59,2. in 2012. Sales of cosmetology equipment accounted to 27.7 percent in 2010 and 25.4 percent in 2012. Percentage in sales of supplementary services grew from 13.4 percent in 2010 to 15.1 percent in 2012. Overall, the structure of sales in Sales and Service Center is stable.

Key products of the Sales and Service Center belong to medical equipment group. They are x-ray machines (percentage on sales is around 20 during years 2010-2012), and ultra-sound systems (percentage on sales is around 39 during year 2010-2012). For further research I concentrate on those two products, because they bring the most contribution to the total sales of the case company. To investigate further possible transfer prices I gathered information about fixed and variable costs of key products, and the selling prices for external customer. Figure 3 presents this information.

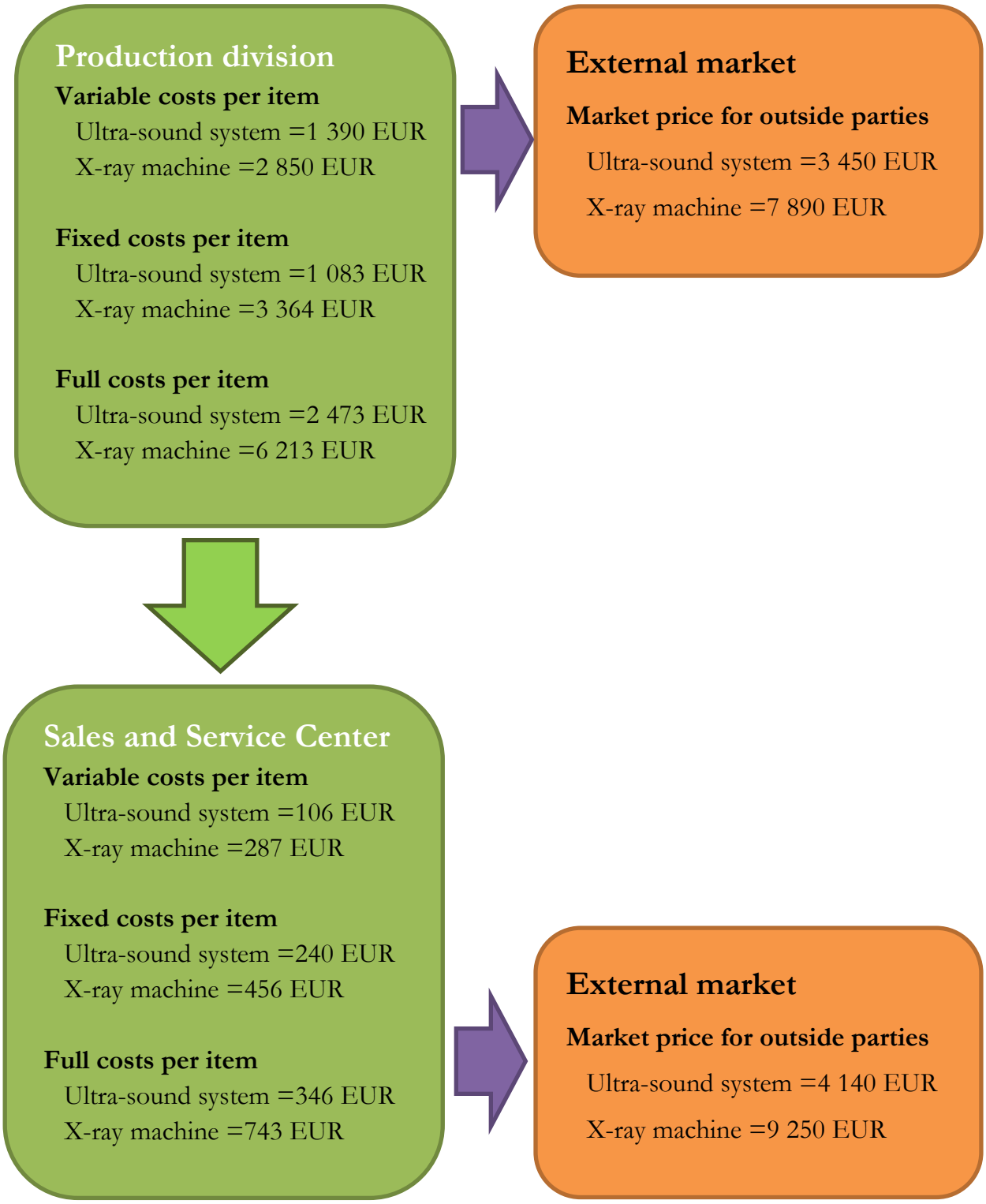

Figure 3. Costs and market prices of the Production Unit and the Sales and Service Center for key products (MedTechnica 1 Sales Report Third Quarter 2012)

5.1 Full-cost transfer pricing method

MedTechnica 1 uses full-cost method to determine transfer prices. Figure 4 illustrates revenues, costs, operating income of selling and buying divisions under full-cost transfer pricing method. In this case transfer price per item equals to variable cost plus fixed costs per item of the selling division.

In the case that the production unit sells internally 25 ultra-sound systems and 15 x-ray machines, which is the usual quarter transfer in MedTechnica 1, the total turnover of the production unit account to 61 825 EUR for ultra-sound systems and 93 210 EUR for x-ray machines. Since turnover is equal to total costs, the profit of the Production dUnit will be equal to 0.

On the other hand, the buying division pays 61 825 EUR for ultra-sound systems and 93 210 EUR for x-ray machines, as a price of transferred products. If the buying division sells goods at average price its turnover from 25 ultra-sound systems accounts to 103 500 EUR, and for x-ray machines to 138 750 EUR. Taking into consideration all the costs of the buying division, the profit from the transfer of ultra-sound systems is 33 025 EUR and 34 395 EUR for x-ray machines. Figure 4 and Attachment 5 illustrate the findings about application of the full-cost transfer pricing method.

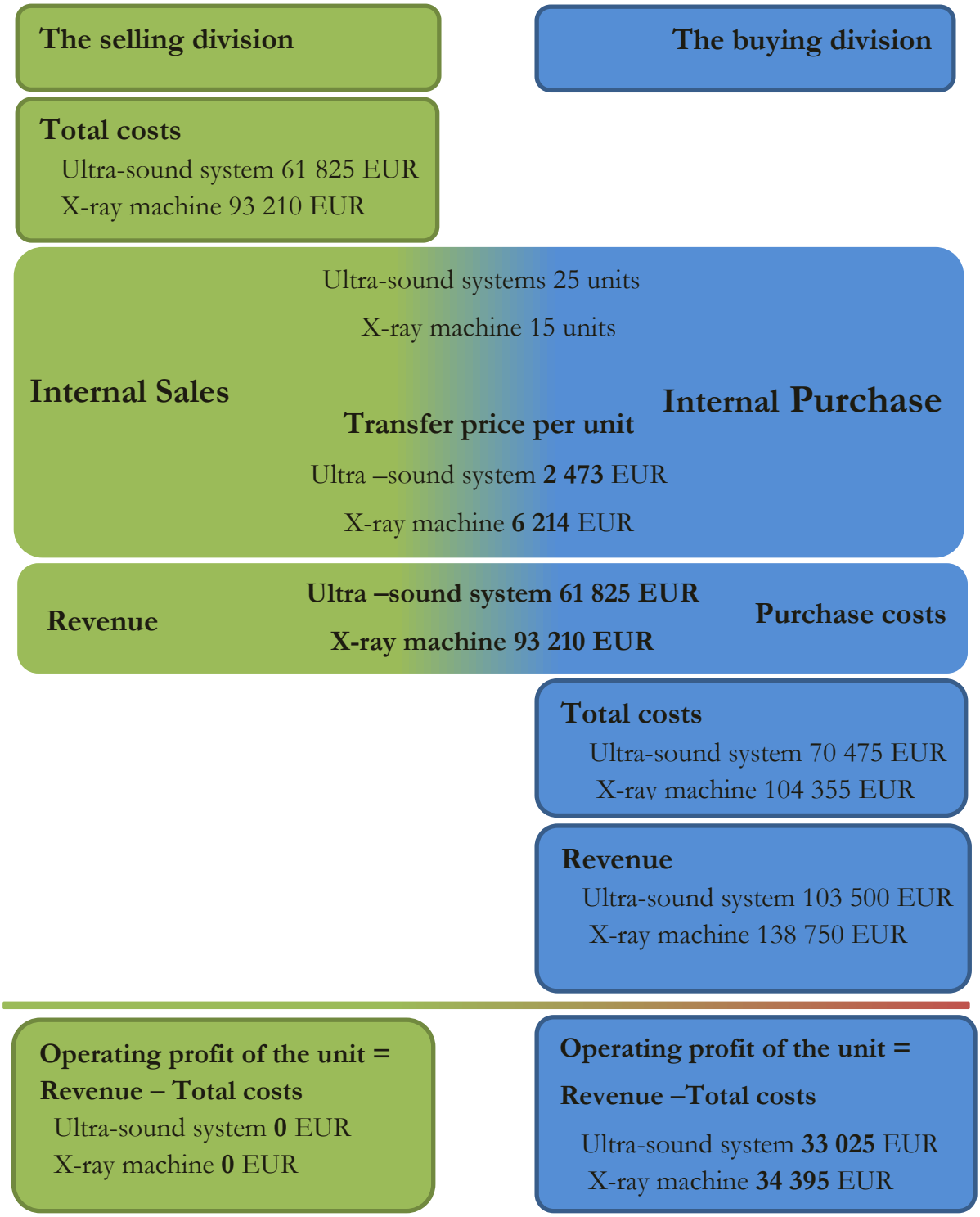

Figure 4. Illustration of the full-cost transfer pricing method. (MedTechnica 1 Sales Report Third Quarter 2012).

5.2 Market-based method.

Next method which I will consider is market – based method. For this I assume that there is a prefect market for the transferred products, and the selling division has no

unused capacity. In this case, the production unit can sell all of its goods to the external market. Attachment 6 and Figure 5 present illustration of market-based method.

In market-based method the transfer price in the case company is determined by the price for external customer of the selling division which is 3 450 EUR for ultra-sound systems and 7 890 EUR for the x-ray machines. Variable and fixed costs of the selling division are similar to the full-cost transfer pricing method. Turnover of the selling division for ultra-sound systems accounts to 86 250 EUR for ultra-sound systems and 118 350 EUR for the x-ray machines. In this case, the selling division gains profit from the transfer, which is 24 425 EUR for the ultra-sound systems and 25 140 EUR for the X-ray machines.

The buying division purchase costs are equal to the turnover of the selling division. Variable and fixed costs are similar to the costs in figure 4, page 33. The turnover of the division does not change, it is 103 500 EUR for the ultra-sound systems and 138 750 EUR for x-ray machines. It means that the buying division gains profit of 8 600 EUR from ultra-sound systems and 9 255 EUR from x-ray machines.

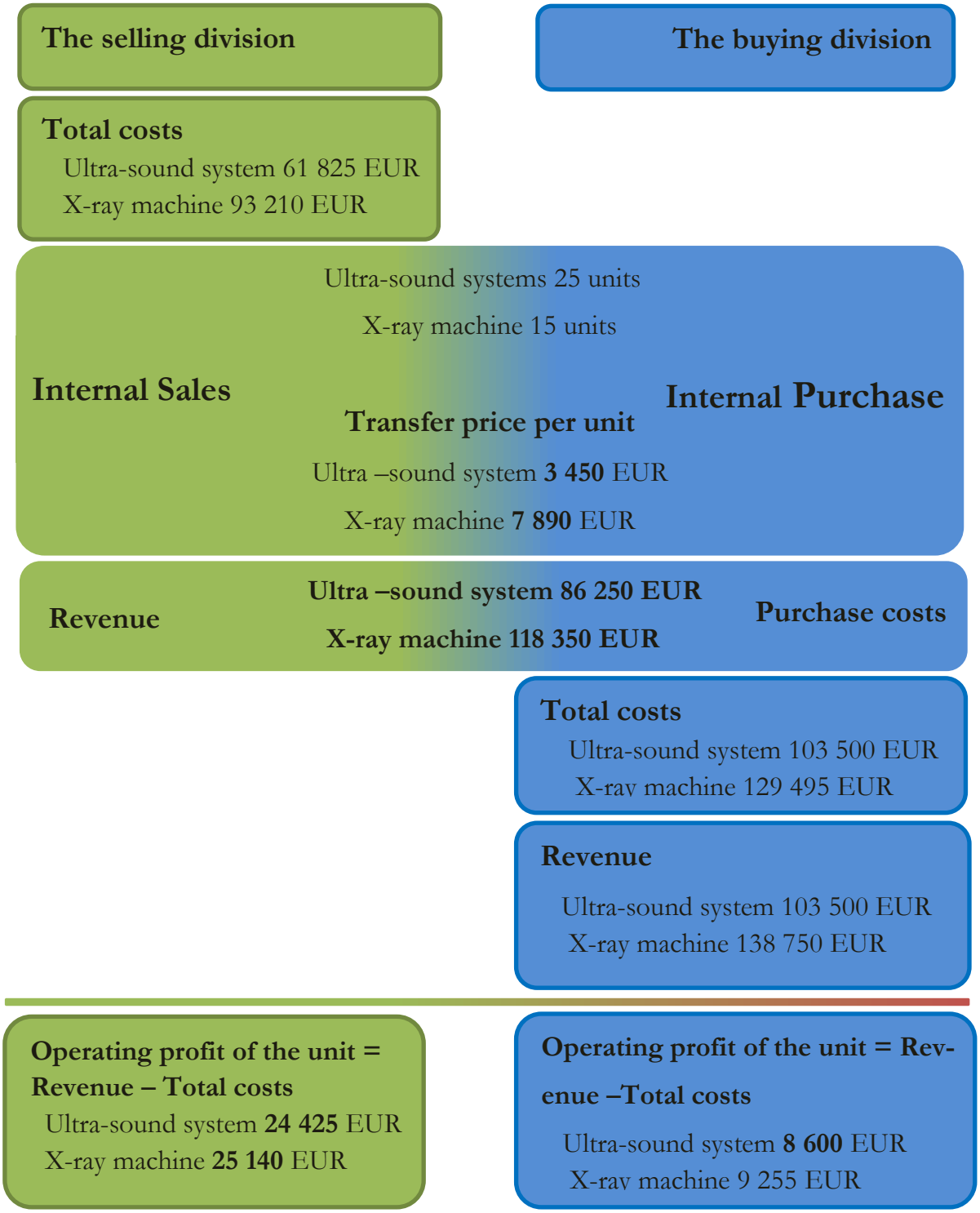

Figure 5. Illustration of the market-based transfer pricing method (MedTechnica 1 Sales Report Third Quarter 2012)

5.3 Full-cost plus a mark-up transfer pricing method

Here I will illustrate full-costs plus a mark-up method (Figure 6 and Attachment 7). Transfer price in this case is based on full costs of the selling division which are 61 825 EUR (ultra-sound systems) and 93 210 EUR (x-ray machines).

From interview with the production unit director I realized that he desires to have at least 25 percent mark-up on full costs when making internal transfers. In this case, transfer price per unit accounts to 3 091 EUR for the ultra-sound systems and 7 767 EUR for x-ray machines. Turnover of the selling division is 77 281 EUR from ultra-sound systems and 116 512 EUR from x-ray machines. It means that profit of the production unit from this transfer accounts to 15 456 EUR from ultra-sound systems and 23 302 EUR from X-ray machines.

The selling division in this case has purchase costs of 77 282 EUR for ultra-sound systems and 116 513 EUR for x-ray machines. Variable and fixed costs are similar to ones mentioned in full-cost method. Revenue of the selling division equals to 103 500 EUR for ultra-sound systems and 138 750 for x-ray machines. Profit of the unit accounts to 17 569 EUR for ultra-sound systems and 11 093 EUR for the X-ray machines.

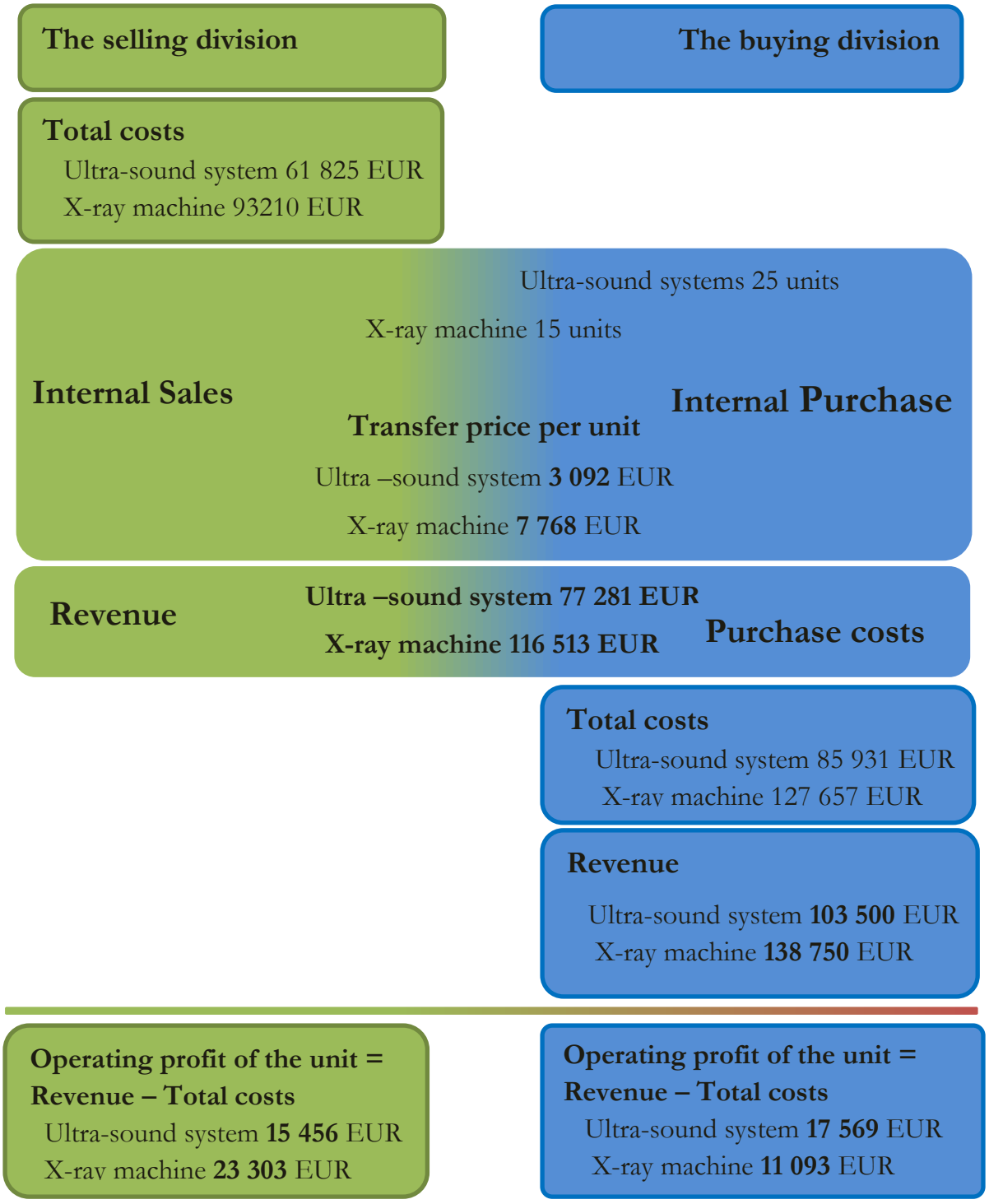

Figure 6. Illustration of full-cost plus a 25% mark-up method. (MedTechnica 1 Sales Report Third Quarter 2012)

5.4 Negotiated transfer pricing method

Here I discuss negotiated transfer pricing method. In this case the managers of the selling and buying divisions negotiate the transfer price. They consider both costs and market pricing in their negotiations.

The buying division perspective:
I assume that the managers of Sales and Service Center (the buying division) look at the selling price of ultra-sound systems which is 4 140 EUR ultra-sound systems and 9 250 EUR for x-ray machines. Then they substrack variable and fixed costs incurred in this division when selling those product. The Sales and Service Center will add to its profit by selling the ultra-sound system if the transfer price is below 4 140-346 = 3 794 EUR, and if x-ray transfer price is below 9 250-742= 8 507 EUR.

The selling division perspective:
The managers of production unit look at what it costs to produce products. First, I assume that there is excess capacity and thus no opportunity costs. That is why transfer prices above variable costs will increase unit's profit. From the perspective of the production division the price above 1 390 EUR for ultra-sound systems and 2 850 EUR for x-ray machine is acceptable.

Different situation occurs if there is no excess capacity in the production unit. External customers are willing to pay 3 450 EUR for the ultra-sound systems and 7 890 EUR for x-ray machines. The production unit gives up on the opportunity costs when transferring goods internally at the price of variable costs. In this situation the minimum price which the production unit will accept is 3 450 EUR for ultra-sound systems and 7 890 EUR for the X-ray machines.

If production unit has some excess capacity, the manager would like to sell at price which will at least cover variable costs of the unit and possible opportunity costs in case the capacity will not allow satisfying both external and internal demand. The minimum acceptable transfer price for the production division is 2 214 EUR for ultra-sound systems and 4 530 EUR for x-ray machines.

When managers negotiate the result depends on many factors: negotiating ability and power of two division managers. The production unit manager would like to sell at the maximum price which the Sales and Service Center will accept. On the other hand managers of the Sales and Service Center would like to buy at the minimum price which the production unit can accept.

Combining requirements of both selling and buying division I will determine the range of acceptable transfer prices. In case there is excess capacity in the Production Unit the range of acceptable transfer prices is 1390-3794 EUR for ultra-sound systems and 2 850-8 794 EUR for x-ray machines. In case there is no excess capacity the range of acceptable transfer prices is 3 450-3794 EUR for ultra-sound systems and 7 890-8 794 EUR for x-ray machines. And in case there is some excess capacity the range of acceptable transfer prices is 2 214-3 94 EUR for ultra-sound systems and 4 530-8 794 EUR for x-day machines. Figure 7 and attachment 8 illustrates negotiated transfer price method in a case when the selling division has some excess capacity.

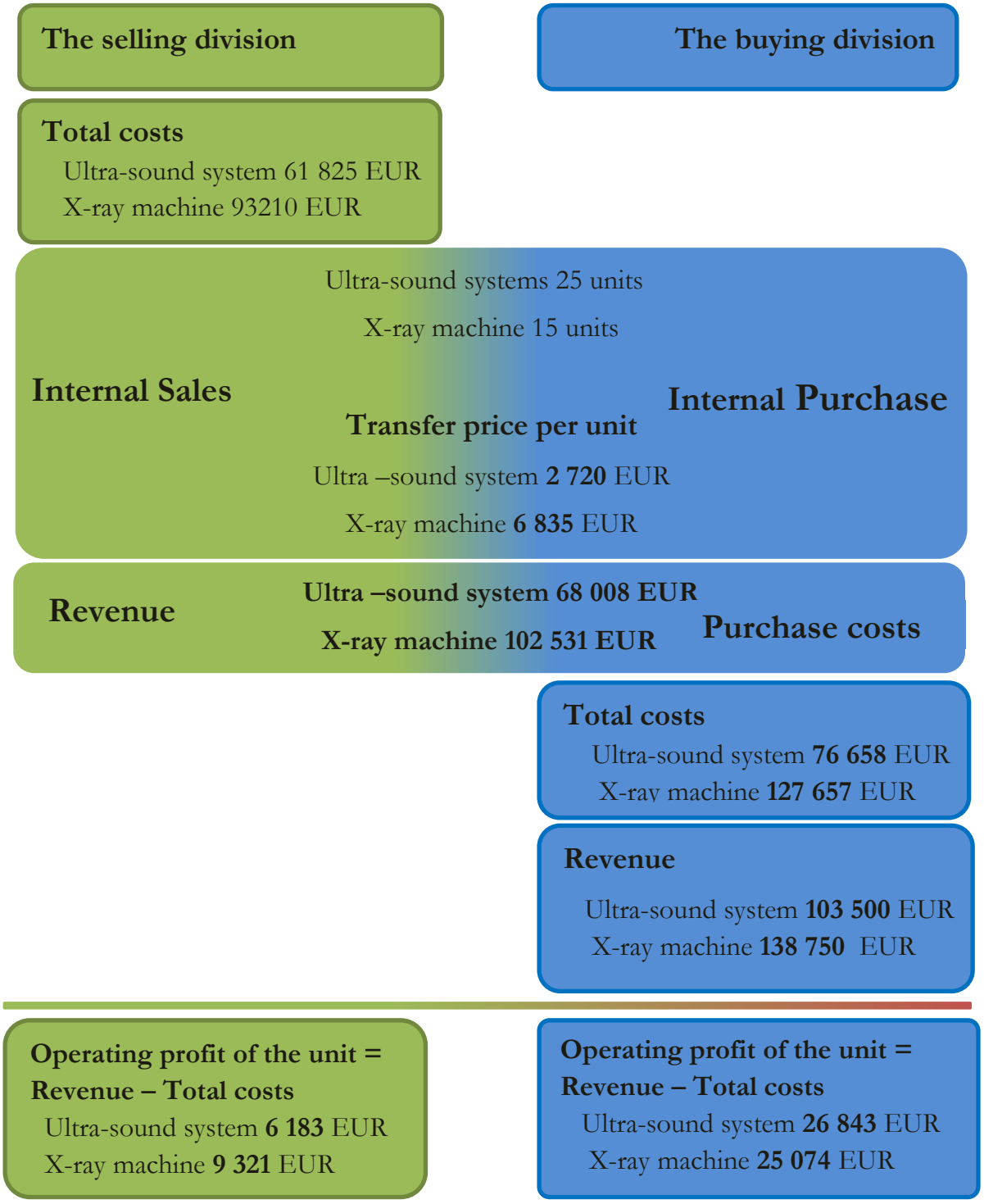

Figure 7. Illustration of the Full-cost plus a 25 percent mark-up method. (.)

After negotiations the price can be at the level of 2 720 EUR for the ultra-sound systems and 6 835 EUR for x-ray machines. Turnover of the selling division from this transfer accounts to 68 008 EUR for ultra-sound systems and 102 531 EUR for x-ray machines. Fixed and variable costs are similar to the costs mentioned in the full-cost

transfer pricing method. Therefore, the selling division gains profit from this transaction 6 182 EUR from ultra-sound systems and 9 321 EUR from x-ray machines.

The buying division purchase costs equal to 68 008 EUR for ultra-sound systems and 102 531 EUR for x-ray machines. Turnover is similar to one mentioned in other methods, as well as, variable and fixed costs. Therefore, profit of the buying division accounts to 26 843 EUR from ultra-sound systems and 25 074 EUR from x-ray machines.

6 Discussion and conclusion

In this chapter I elaborate more on investigative question 4, and give answer to investigative question 5. The aim of this chapter is to answer to the main research problem which is what is the most appropriate method of transfer pricing in the case company for selected key products. In this chapter I discuss the validity of data collected and my learning experience. I also give suggestions for further research.

Table in Attachment 9 combines illustrations of different methods for ultra-sound systems. Table Attachment 10 combines illustrations of different methods for x-day machines. Tables show that transfer price influences to turnover and profit of the selling division and purchase costs, total costs, turnover and profit of the buying division. Variable costs, fixed costs of both selling and buying divisions stay constant; turnover of the selling division does not change as well.

6.1 Findings on different transfer pricing methods in the case company

Transfer price based on full-cost

This subchapter analyses every method which I applied in chapter 5. For analysis I use four evaluation criteria mentioned in chapter 2.2.4 which are:

- transfer pricing method promotes goal congruence (criteria 1),
- transfer pricing method drives manager to exert a high level of effort (criteria 2),
- transfer pricing method helps top managers to evaluate the performance of individual units(criteria 3),
- transfer pricing method supports units' autonomy in decision making (criteria 4).

First I analyze full-cost transfer prices method. It is currently used in the case company. All interviewees agreed that this method is easy to understand and implement on the level of unit and organization as whole. It reduces disputes as the figure is objective and it generally leads to suboptimal decisions

Both units get profit from their operations. Managers are able to influence to the performance of their units. Actions which units' managers take to improve the performance and profit of their divisions also improve the profit of the company as a whole. This transfer pricing method does not provide an incentive for the Production Unit to transfer goods in internal market because price the does not include any profit margin. Nevertheless, units which are produced for Sales and Service department lower the fixed costs per item in the Production Unit. To summarize, this method promotes goal congruence (criteria 1), but not in all situations.

During interview the Production Unit Director pointed out that he is more concerned about cutting costs in his unit, than gaining larger revenue, since it is the key issue from the perspective of the whole organization. This demotivates him and other managers of the unit, because performance of this unit, as a profit center, is measured by profit. Internal transfers are significant part of the Production Unit business, so they understate this unit's profits. Moreover, transfer price is based on actual costs (not budgeted costs) what means that managers of this unit are not motivated to control costs of production. From company's perspective it is a big disadvantage of this method.

For the Sales and Service Center transfer prices based on full-costs allow the price to be competitive in external market. Managers of this unit do not need to bring incentives for better customer service or product development, because it is easy to gain profit from every deal when costs are low. It helps to gain market share for the unit. Full-cost transfer prices do not drive managers to exert a high level of effort (criteria 2). It is difficult for top managers to evaluate fair performance of units (criteria 3).

Full-cost transfer prices do not take into account changes in external market environment, such as increase of average market price. This transfer price method does not support units' managers' autonomy in decision making (criteria 4), since it is rule-based. Only full costs of the Production Unit determine transfer price, so managers are unable to negotiate on it.

Market-based transfer prices

Next method to consider is market-based. This method leads to optimal decision making when the market for transferred product is perfectly competitive, interdependences of subunits are minimal and there are no additional costs or benefits to the company as a whole from buying or selling in the external market instead of transferring internally. When transfer price is equal to external selling price manager of the Production Unit or the Sales and Service Center unable to influence directly of those prices by their own actions. The Production Unit managers are motivated to sell internally, because it brings extra profit to the unit. They are also motivated to cut costs to increase the profit margin of each item. Transfer price takes into account opportunity costs of the Production Division.

Nevertheless, the transfer price based on market price is high what makes it harder for managers of the Sales and Service Center to compete at the market. It forces managers to be innovative in all aspects to make their product stand out. Director of the Sales and Production Center mentioned that in Belarus market-based the transfer price limits power of sales manager when negotiating contracts. In medical equipment business one should be ready to give 7-12 percent discount for regular customers and 5 percent discount on large orders. In case transfer price is market-based the profit margin of the Sales and Service department accounts to 8 percent for ultra-sound systems and 7 percent for x-ray machine. Therefore, in current external environment market-based transfer prices almost make it impossible for managers to give discounts. Those limits can negatively effect on companies sales and market share in Belarus, and to MedTechica 1 as a whole, since sales of the Sales and Service Center accounts to more than 25 percent of the total sales of the company.

Market – based transfer price motivates managers to put effort in general. But in the current market conditions this method does not support goal congruence of MedTechnica 1, due to the limitation it brings to actions of the Sales and Service Center. It also demotivates managers of this unit (criteria 2), since profit margin is low and the success of negotiations with regular customers is questionable.

This transfer pricing method support units' autonomy (criteria 4), both units can sell and buy goods in external market. Market-based transfer prices also serve to evaluate performance and profitability of each unit individually (criteria 3). Units are evaluated based on their profit. The Production Unit is able to sell goods either internally or externally, profit per item is the same. Managers of both units are motivated to increase profitability of their units. The actions that maximize profit of each division will also bring benefits to MedTechnica 1 as a whole.

Full-cost plus a 25 percent mark-up method

Full-cost plus a 25 percent mark-up method overcomes some limitations and disadvantages of other methods. It motivates managers of the Production unit to transfer goods internally, since transfer price covers full costs and contributes to operating profit of the company. This method promotes goal congruence (criteria 1). The Production Unit managers can concentrate more on their sales, not only on cutting costs in the unit.

Transfer prices of full-cost plus a 25 percent mark-up method motivates managers of both units (criteria 2), if it is based on budgeted figures. Managers of the Production Unit can increase profit by decreasing the actual costs through innovation, new materials or suppliers. This transfer price pushes manager of the Sales and Service Center to put in extra efforts, since transfer price is higher than in full-costs transfer pricing method. Nevertheless, this price allows making discounts mentioned previously.

This method provides top management with data, which enables fair evaluation of units' performance (criteria 3). Nevertheless, this method does not fully support autonomy of units (criteria 4), since prices are fixed according to budgeted figures. As with full-cost transfer pricing method, it is easy to implement. It does not require a significant effort from top management of the company and managers of units when switching methods.

Negotiated transfer prices

Negotiated transfer prices method allows manager to freely bargain with each other. Managers of both the Production Unit and the Sales and Service Center can concentrate on the performance of their units, are motivated and put an effort to make results of the units better (criteria 2).

The agreed transfer price depends on the negotiation skills and bargaining power of the managers involved. Sometimes the result of the negotiation process may not be optimal for the case company as a whole. It happens because managers of the Production Unit and the Sales and Service Center have unequal bargaining power, and this is important for negations to be successful. The Sales and Service Center depends more on the results of negotiations, since it suffer serious consequences if agreement is not reached on the proposed internal transfers.

Moreover this transfer pricing method might lead to conflicts among managers of the Production Unit and the Sales and Service Center and the resolution of such conflicts may require top managers to get involved. Measurement of a units' profitability also depends on the negotiation skills of managers, what may lead to incorrect evaluation of units' performances (criteria 3).

The process of negotiations is time consuming. Nevertheless, this transfer pricing method gives managers full independence on their decisions over costs and revenue. It means that this method supports units' autonomy (criteria 4). Overall, negotiated transfer prices do not always lead to optimum decision making and therefore do not promote goal congruence (criteria 1). Negotiated transfer prices may lead to increase of profits as well as to the loss of profits from negotiated non-optimal transfer prices.

In conclusion, all method discussed have advantages and disadvantages. This should be considered by the case company when making decision which transfer pricing method to use. I suggest that the case company start to use full-cost plus a mark-up method when setting transfer prices. Compare to other methods this method is the most suitable for the case company. I suggest using budgeted costs for setting transfer prices.

This motivates managers of the Production Unit to control costs. This method pushes managers of the Sales and Service Center to put extra effort on development of customer service, and gives opportunity to make successful negotiations. Therefore, it promotes goal congruence. Full-cost plus a mark-up method helps top managers to evaluate individual performance of units. This method can be easily implemented. Nevertheless, it is important to understand disadvantages of this method, such as limitations of units' autonomy in decision-making.

6.2 Validity and reliability of the research.

Validity refers to the issues of whether or not an indicator that is devised a concept really measures that concept. Reliability refers to the consistency of measure of a concept (Bell & Bryman 2012, 158). During the research I collaborated with the commissioning company. If the data is not usable by the commissioning company then it is invalid (Silverman 2009, 176). Most importantly, without the commissioning company, this research would not have been possible because all of the interview questions were discussed with representatives from the commissioning company. Documents for calculations were provided by the commissioning company as well. The research was carried out for the case company, what made all parties involved in the process.

The company advisor for this thesis is the bookkeeper of the commissioning company, and he has been very active in the research. The company needs to make a change in their transfer pricing system. I also emphasize that all of the accounting calculations and principles are valid for this research and have been approved by the commissioning company. The final decision on new method of transfer pricing has been made on the board of directors meeting in December 2012: from new accounting year (1st April 2013) MedTechnica 1 will use full-cost plus a 25 percent mark-up method to determine prices for all transfers within the company.

All of the parties involved in the research are well-experienced employees with good knowledge and understanding of the company situation and research problem of this thesis. The theories used cover the purpose.

6.3 Suggestions for further research

This research is demarcated and does not cover all aspects of the transfer pricing phenomenon. That is why in this subchapter I make suggestions on further research which can be valuable for the case company and different field of studies.

This research does not take into account tax considerations or tax minimization possibilities for the case company. Transfer prices affect not just income taxes, but also payroll taxes, customs duties, sales taxes, value-added taxes and other government levies. I think a study which will consider mentioned issues will be relevant and useful for the case company and accounting field of study.

The case company does not have nonfinancial performance indicators to evaluate and reward managers. I think it useful to have a developed system of indicators to better evaluate performance at lower management levels. For further research I suggest to develop such a system, introduced it in the case company and collect feedback from managers.

Furthermore, this research does not include the perspective of subsidiary in Yekaterinburg. I suggest conducting research similar to this case study where a researcher will describe and explore relations between subsidiary in Yekaterinburg and the Production Unit. Suggested research will discuss domestic transfer pricing, which was not explored in this study. As I mentioned previously transfer prices are not widely used, so a research on domestic transfer pricing can be reported as guidelines for Russian companies.

For accounting and human resource field of study it would be interesting to look on how change of transfer pricing method influences the case company. A researcher can explore changes in motivation of managers, selling prices for external customers, innovation processes etc. in both the Production Unit and the Sales and Service Center.

Russian Federation joint World Trade Organization (WTO) in August 2012. What means that some regulations and laws regarding international trade will be change or

adapt in accordance to WTO agreements. For example, it will influence transfer pricing regulations and laws. For future research I suggest to compare transfer pricing legislation before and after Russia joint WTO, and provide examples on how companies faced those changes.

6.4 Assessment of my learning

Thesis writing and ability to research problem in a case company has indeed taught me a lot, improved my skills and enlarged my professional knowledge. This thesis project was a challenge for me due variety of views on which transfer pricing method should the case company use. I have been able to discuss the problem with all participants involved, and found the method which got positive feedback from all of them. It has been my pleasure to cooperate with MedTechnica 1 for this study. Managers at all level of the organization showed their interest in my study and have been providing al necessary information.

This research started with literature review, which enabled me to analyze the current situation in my research area, to compare and contrast different theories and the opinions of experts, and to find out the context of this study. The literature review helped me to determine a scope for this study. I noticed that in accounting journals and periodical authors talk about transfer pricing mainly from the perspective of financial accounting, more precisely, the possibility for multinationals to reduce their tax burden by use of transfer pricing. That is why I decided that in my research I look on the transfer pricing from a managerial accounting point of view.

During my studies I touched shortly the topic of transfer pricing. This study allowed me to look deeper into the theories in this topic area, compare them and explore how theories can be applied in the case company. I have been able to connect theory and practice during this research. I think it is crucial for my professional development.

I used semi-structured interviews as a data collection method. Even I have previous experience using them, but I have never take interview via phone. Surprisingly, it was very different from taking interview face-to-face. I improved and enlarged my inter-

viewing skills while data collection. I also found useful tips for conducting semi-structured interviews, which I used later at my workplace.

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Attachments

Attachment 1. Overlay matrix

Investigative question	**Theory chapter**	**Data collection tool/s**	**Results and discussion chapter**
What key products are transferred within the case company?	2.1	Documentary analysis	4.1
What is the current transfer pricing system in the case company?	2.2	Semi-structured interviews, documentary analysis	4.2
How can different transfer pricing methods be applied in the case company?	2.2	Documentary analysis	5
Which transfer pricing method is the most effective method of setting transfer prices of the case company?	2.3	Semi-structured interviews, documentary analysis	6.1

Attachment 2. Theory review

Author	Transfer pricing methods
Choi & Meek (2011)	- Market- based transfer pricing, - Comparable uncontrolled price method, - Comparable uncontrolled transaction method, - Resale price method, - Cost-plus pricing, - Comparable profits method, - Profit-split methods
Bhimani , Horngren, Datar, Rajan (2012)	- Market-based transfer prices, - Cost-based transfer prices, - Negotiated transfer prices
Garrison & Noreen (2003)	- Market-based transfer prices, - Cost-based transfer prices, - Negotiated transfer prices
Horngren, Datar, Rajan (2012)	- Market-based transfer prices - Cost-based transfer prices - Hybrid transfer prices
McWatters, Zimmerman & Morse (2008)	- Market –based transfer prices - Variable cost transfer prices - Full cost transfer price - Negotiated transfer price

Attachment 3. MedTechnica 1's sales by Categories (2010-2012)

Category	Total sales, EUR		
	2010	2011	2012
Medical equipment	**1 149 750**	**1 432 917**	**2 015 790**
Ultra-sound scanners	620 865	798 255	1 072 440
X-ray equipment	441 833	534 141	886 253
Medical furniture	87 053	100 521	57 098
Cosmetology equipment	**307 148**	**291 708**	**268 110**
Spa equipment	106 763	68 985	101 783
Massage tables	103 478	139 941	136 538
Body massage apparatuses	96 908	82 782	29 790
Suplimentary services	**185 603**	**246 375**	**198 600**
Total	1 642 500	1 971 000	2 482 500

Attachment 4. Sales and Service Center's sales by Category (2010-2012)

Category	Sales of transferred product, EUR		
	2010	2011	2012
Medical equipment	**88 025**	**233 374**	**558 942**
Ultra-sound scanners	57 920	153 560	367 784
X-ray equipment	30 105	79 814	191 158
Medical furniture	-	-	-
Cosmetology equipment	**49 945**	**74 102**	**108 850**
Spa equipment	21 776	36 236	54 099
Massage tables	15 733	20 971	23 294
Body massage apparatuses	12 436	16 895	31 458
Suplimentary services	**-**	**-**	**-**
Total	137 970	307 476	667 793

Attachment 5. Transfer pricing using Full-cost method

	Ultra-sound system	X-ray machines
The selling division		
Internal Sales, units	25	15
Transfer price per item, EUR	2 473	6 214
Turnover, EUR	**61 825**	**93 210**
Variable costs, EUR	34 750	42 750
Fixed costs, EUR	27 075	50 460
Total costs, EUR	61 825	93 210
Profit of the unit, EUR	**0**	**0**
The buying division		
Internal Purchase, units	25	15
Purchase price per item, EUR	2 473	6 214
Purchase costs, EUR	**61 825**	**93 210**
Variable costs, EUR	2 650	4 305
Fixed costs, EUR	6 000	6 840
Total costs, EUR	**70 475**	**104 355**
Turnover, EUR	**103 500**	**138 750**
Profit of the unit, EUR	**33 025**	**34 395**

Attachment 6. Transfer pricing using market-based method

	Ultra-sound system	X-ray machine
The selling division		
Internal Sales, units	25	15
Transfer price per item, EUR	3 450	7 890
Turnover, EUR	**86 250**	**118 350**
Variable costs, EUR	34 750	42 750
Fixed costs, EUR	27 075	50 460
Total costs, EUR	61 825	93 210
Profit of the unit, EUR	**24 425**	**25 140**
The buying division		
Internal Purchase, units	25	15
Purchase price per item, EUR	3 450	7 890
Purchase costs, EUR	86 250	118 350
Variable costs, EUR	2 650	4 305
Fixed costs, EUR	6 000	6 840
Total costs, EUR	**94 900**	**129 495**
Turnover, EUR	**103 500**	**138 750**
Profit of the unit, EUR	**8 600**	**9 255**

Attachment 7. Transfer pricing using full-costs plus 25 percent mark-up method

	Ultra-sound system	X-ray machine
The selling division		
Internal Sales, units	25	15
Transfer price per item, EUR	3 091	7 767
Turnover, EUR	**77 281**	**116 512**
Variable costs, EUR	34 750	42 750
Fixed costs, EUR	27 075	50 460
Total costs, EUR	61 825	93 210
Profit of the unit, EUR	**15 456**	**23 302**
The buying division		
Internal Purchase, units	25	15
Purchase price per item, EUR	**3 091**	**7 767**
Purchase costs, EUR	77 281	116 512
Variable costs, EUR	2 650	4 305
Fixed costs, EUR	6 000	6 840
Total costs, EUR	**85 931**	**127 657**
Turnover, EUR	**103 500**	**138 750**
Profit of the unit, EUR	**17 568**	**11 092**

Attachment 8. Transfer pricing using Negotiated price method.

	Ultra-sound system	X-ray machine
The selling division		
Internal Sales, units	25	15
Transfer price per item, EUR	2 720	6 835
Turnover, EUR	**68 007**	**102 531**
Variable costs, EUR	34 750	42 750
Fixed costs, EUR	27 075	50 460
Total costs, EUR	61 825	93 210
Profit of the unit, EUR	**6 182**	**9 321**
The buying division		
Internal Purchase, units	25	15
Purchase price per item, EUR	2 720	6 835
Purchase costs, EUR	**68 007**	**102 531**
Variable costs, EUR	2 650	4 305
Fixed costs, EUR	6 000	6 840
Total costs, EUR	**76 657**	**113 676**
Turnover, EUR	**103 500**	**138 750**
Profit of the unit, EUR	**26 842**	**25 074**

Attachment 9. Calculations for ultra-sound systems

	Full-cost transfer pric-ing method	Market-based transfer pric-ing method	Full-cost plus a mark-up transfer pric-ing method	Negotiated transfer pricing method
The selling division				
Internal Sales, units	25	25	25	25
Trasnfer price per item, EUR	2 473	3 450	3 091	2 720
Turnover, EUR	**61 825**	**86 250**	**77 281**	**68 000**
Variable costs, EUR	34 750	34 750	34 750	34 750
Fixed costs, EUR	27 075	27 075	27 075	27 075
Total costs, EUR	61 825	61 825	61 825	61 825
Profit of the unit, EUR	**-**	**24 425**	**15 456**	**6 175**
The buying division				
Internal Purchase, units	25	25	25	25
Purchase price per item, EUR	2 473	3 450	3 091	2 720
Purchase costs, EUR	**61 825**	**86 250**	**77 281**	**68 000**
Variable costs, EUR	2 650	2 650	2 650	2 650
Fixed costs, EUR	6 000	6 000	6 000	6 000
Total costs, EUR	**70 475**	**94 900**	**85 931**	**76 650**
Turnover, EUR	**103 500**	**103 500**	**103 500**	**103 500**
Profit of the unit, EUR	**33 025**	**8 600**	**17 569**	**26 850**

Attachment 10. Calculations for X-ray machines

	Full-cost transfer pric-ing method	Market-based transfer pric-ing method	Full-cost plus a mark-up transfer pric-ing method	Negotiated transfer pricing method
The selling division				
Internal Sales, units	15	15	**15**	15
Trasnfer price per item, EUR	6 214	7 890	7 768	6 835
Turnover, EUR	**93 210**	**118 350**	**116 513**	**102 525**
Variable costs, EUR	42 750	42 750	42 750	42 750
Fixed costs, EUR	50 460	50 460	50 460	50 460
Total costs, EUR	93 210	93 210	93 210	93 210
Profit of the unit, EUR	**0**	**25 140**	**23 303**	**9 315**
The buying division				
Internal Purchase, units	15	15	15	15
Purchase price per item, EUR	6 214	7 890	7 768	6 835
Purchase costs, EUR	93 210	118 350	116 513	**102 525**
Variable costs, EUR	4 305	4 305	4 305	4 305
Fixed costs, EUR	6 840	6 840	6 840	6 840
Total costs, EUR	104 355	129 495	127 658	**113 670**
Turnover, EUR	138 750	138 750	138 750	**138 750**
Profit of the unit, EUR	34 395	9 255	11 093	**25 080**