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IT TOOL FOR CONTROLLING  
CASHFLOWS IN SARL  
TECHNOBATILUX

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## DESCRIPTION

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<b>Abstract</b>  <p>Growing competition developed quite unfavorable conditions for the companies and pointed at the necessity of a more thorough control of financial flows. The purpose of this study was to identify the strengths and weaknesses of a company and to find out how a micro company with a thorough marketing strategy can enhance its performance through the business intelligence software.</p> <p>The theoretical background consists of three parts. They include the studies concerning cash flows overall, means of analyzing company's activities and business intelligence software and their implementation in real business life.</p> <p>The research data was collected through participant observation during my internship in the French construction company Technobatilux. The practical part included SWOT and value chain analyses which showed not only advantages of the company, but certain weaknesses and needs. Besides, the identification of the concerns of Technobatilux was fulfilled during the in depth interview with the financial manager who determined certain difficulties in the decision making process because of the lack of financial controlling.</p> <p>According to the findings, micro companies and SMEs experience problems with business intelligence software, because they lack financing or skills. Instead of professional programs they use substitutes which partially correspond to their needs. These substitutes are usually familiar accounting programs which include financial analysis functions.</p> <p>As a result of the research, an excel spreadsheet file was developed for the company. It was tailor made to meet the needs of the company – the ability to see the profitability of every project monthly and to analyse various types of costs in order to increase profitability and efficiency.</p>			
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## 1 INTRODUCTION

Cash flow is an important issue in every company. Control of cash flow affects company's profitability. Moreover, it is relevant for all stakeholders to analyze cash payments and predict liquidity and the overall future development of the company.

The thesis is made for a French micro company Technobatilux where I worked as an intern from January till April 2012. The company operates in the southern region of the country. It is a private limited liability company which was created in March 2011. The major company's activities are construction of buildings (private houses) and renovation.

The management developed a detailed marketing strategy which was essential in attraction of the clients and helped to show a positive financial result for the first year of the company's existence. Still, the company faced another problem related to the increasing number of the projects and lack of financial instruments to supervise them. Therefore, the management of Technobatilux responded to the question of how a micro company can maintain sustainability through controlling the company's finances by decision to develop an IT tool for cash management. The system should facilitate the current results of the activities any time. Besides, one of its main functions should be the ability to review every project and to allocate resources where it is necessary.

A wide range of provided services and processes inside the company imply certain complexity in planning and supervising of the projects on daily basis. Thus, the management should find the solution that suits the needs of the company: a tool that would allow seeing the costs and profits of every single project and reacting timely on the unforeseen changes. The purpose of the tool is to facilitate decision making for the management.

The research questions are the following:

1. What are the needs and weaknesses of Technobatilux from the point of view of cash flow?
2. What is the most suitable and cost efficient way to control finances in the company?

These questions are answered through the theoretical framework that covers strategic management and critical success factors which are used to make SWOT and value chain analyses of Technobatilux; and the notion of business intelligence programs and their development, description of business intelligence market leaders 2012. Concerning empirical part, the work includes qualitative research (in-depth structured interviews and participant observation). The selected methods allowed to receive detailed information about cash flow management in the case company and to participate in the project of developing the excel tool.

Thus, the objective of this bachelor`s thesis is to find and develop the most suitable IT solution to control financial activities and provide analysis for Technobatilux.

## **2 CASH FLOW MANAGEMENT**

Cash flow statement belongs to financial statements which are produced during accounting process. They convey economic information about the company`s activities to interested parties who make decisions about financial position of the company, results of operations, and cash flows. Each of the four principal financial statements has its own purpose, but they are interconnected in order to give the full picture about a company`s activities (Marshall 2011, 32).

The financial statements are:

- Balance sheet (or statement of financial position);
- Income statement (or statement of earnings, or profit and loss statement, or statement of operations);
- Statement of cash flows;
- Statement of changes in owners` equity (or statement of changes in capital stock and/or statement of changes in retained earnings) (Marshall, 2011, 32).

### **2.1 Cash flow statement**

According to David Marshall (2011), the statement of cash flows is an obligatory financial statement that shows how accounting evolves to meet the requirements of users of financial statements. Over the decades, the importance of understanding the

cash flows statement of an entity has been highlighted, because income statement does not present cash flows from operations (with the exception for cash related to revenues and expenses) and it does not show information about cash flows from investing and financing activities (Marshall 2011, 41).

The author underlines that the purpose of the statement of cash flows is to identify the sources and uses of cash during the year by reporting the changes in all of the other balance sheet items. Because of the accounting equation (assets equal liabilities plus owners' equity), the total of the changes in every other asset and each liability and element of owners' equity will equal the change in cash (Marshall 2011, 41-42).

Therefore, cash flow statement provides the relevant information about cash payments of a company and it helps to analyze and make certain predictions. Hongren et al. (2012) note that past cash receipts and payments may be useful for several groups of stakeholders. For example, management of the company may use cash flow statement to predict future cash flows; investors may evaluate management decisions concerning investing activities; lenders and stockholders may predict the ability of the company to pay debts and liabilities (Hongren & Harrison 2012, 663).

Cash Flow Statement is prepared like Fund Flow Statement. Preparation of this statement is based on the movement of cash, may be an actual inflow of cash or outflow of cash, Profit and Loss Account and other relevant information. While preparing a cash flow statement, it starts with an opening balance of cash in hand and cash at bank, all the sources of cash are added to an opening balance minus applications of cash is reconciled with the closing balance of cash. The balance represents cash and bank balances at the end of accounting period (Periasamy 2010, 211)

Periasamy(2010) distinguishes the main sources of cash and applications of cash. He refers to the sources of cash (inflows) the following items: cash from operations (trading profit); sale of fixed assets and of investments for cash; raising long-term loans from the financial institutions; issuing of shares and debentures for cash. Applications of cash have the following forms: cash lost in operations (losses); redemption of shares and debentures by cash; purchase of fixed assets; and repayment of long-term loans (Periasamy 2010, 212)

## **Cash flow activities**

Cash flow activities are subdivided into three groups:

- Operating activities
- Investing activities
- Financing activities

To have a closer look at each of them, the description provided by Hongren et al (2012) was used.

### *Operating Activities*

These activities are considered as the most important category of cash flows because they reflect the day-to-day operations that determine the future of an organization. Besides, revenues, expenses, gains, and losses of the company are generated by the operating activities. Moreover, they affect net income on the income statement and current assets and current liabilities on the balance sheet (Hongren & Harrison 2012, 663).

Operating activities may be reported in two ways: the direct method or the indirect method. *The direct method* consists in a separate listing of each major item of operating cash receipt (such as cash received from customers) and each major item of operating cash payments (such as cash paid for merchandise). The cash payments are subtracted from cash receipts to determine the net cash provided by operating activities. *The indirect method* reports net income and then adjusts it for items necessary to obtain net cash provided or used by operating activities. It does not report individual items of cash inflows and cash outflows from operating activities. Instead, the indirect method reports the necessary adjustments to reconcile net income to net cash provided or used by operating activities (Wild & Shaw 2011, 638-639). These two methods of reporting concern only operating activities.

### *Investing Activities*

Investing activities show increase and decrease of long-term assets (such as computers, software, land, premises, and equipment). They include:

- purchases and sales of these assets; long-term loans receivable from others (non-trade) and collections of those loans;
- purchases and sales of long-term investments (Hongren & Harrison 2012, 663).

### *Financing Activities*

Financing activities indicate increase and decrease of long-time liabilities and equity.

They include:

- issuing stock, paying dividends, and buying and selling treasury stock;
- borrowing money and paying off loans (Hongren & Harrison 2012, 664).

## **2.2 Classification of costs**

A cost, in its widest meaning, is “an amount of expenditure on a defined activity” (Weetman 2010, 33). This subchapter chapter explains some of the basic classifications of the expenditures in management accounting.

The traditional classification of costs includes three types:

- variable costs and fixed costs;
- direct costs and indirect costs;
- product costs and period costs (Weetman 2010, 33).

A variable cost is one which varies directly with changes in the level of activity, over a defined period of time. A fixed cost is one which is not affected by changes in the level of activity, over a defined period of time. A semi-variable cost is one which is partly fixed and partly varies with changes in the level of activity, over a defined period of time (Weetman 2010, 35-37).

A fixed cost that increases in steps is called a step cost. The cost is fixed over a specified level of activity but then increases as a further amount of fixed cost is incurred. One example is the cost of renting storage space (Weetman 2010, p.37).

The costs of a business activity can also be classified as direct and indirect costs. Direct costs are those which are directly related to a particular object (such as a product

which has been manufactured) or a particular service (such as a repair job completed) or a particular location (such as a department within the organization). Indirect costs are those which cannot be directly related to a particular object or service or location and therefore have to be apportioned on a basis which is as fair as can be devised (Weetman 2010, 39).

The definition of direct and indirect costs depends on the purpose for which the cost will be used. Direct costs are directly traceable to an identifiable unit, such as a product or service or department of the business, for which costs are to be determined.

Indirect costs are spread over a number of identifiable units of the business, such as products or services or departments, for which costs are to be determined. Indirect costs are also called overhead costs. Overhead costs are the costs which cannot be identified directly with products or services (Weetman 2010, 40).

Another way of looking at the cost as a unit of output of a business is to distinguish product costs and period costs. Product costs are those which are identified with goods or services intended for sale to customers. These costs belong to the products and stay with them until they are sold. If goods remain unsold, or work-in-progress remains incomplete, then the product costs stay with the unsold goods or work-in-progress under the heading of inventory (stock). Period costs are the costs that are treated as expenses of the period and are not carried as part of the inventory (stock) value. Product costs are the costs associated with goods or services purchased, or produced, for sale to customers. Period costs are those costs which are treated as expenses in the period in which they are incurred (Weetman, 2010, 41).

### **2.3 Cash Management**

Cash is a necessary asset of every company. Most companies also own cash equivalents which are assets similar to cash. Cash and cash equivalents are the most liquid of all assets and are easily hidden and moved. Wild et al (2011) insist that an effective system of internal controls protects these assets and it should meet three basic guidelines:

1. Handling cash is separate from recordkeeping of cash.
2. Cash receipts are promptly deposited in a bank.
3. Cash disbursements are made by check.

The first guideline applies separation of duties to minimize errors and fraud. When duties are separated, two or more people must collude to steal cash and conceal this action in the accounting records. The second guideline uses immediate deposits of all cash receipts to produce a timely independent record of the cash received. It also reduces the likelihood of cash theft (or loss) and the risk that an employee could personally use the money before depositing it. The third guideline uses payments by check to develop an independent bank record of cash disbursements. This guideline also reduces the risk of cash theft (or loss) (Wild & Shaw 2011, 321).

The exact procedures used to achieve control over cash vary across companies. They depend on factors such as company size, number of employees, volume of cash transactions, and sources of cash.

### **Cash Equivalents and Liquidity**

Good accounting systems help in managing the amount of cash and controlling who has access to it. Cash is the usual means of payment when paying for assets, services, or liabilities. Liquidity refers to a company's ability to pay for its near-term obligations. Cash and similar assets are called liquid assets because they can be readily used to settle such obligations. A company needs liquid assets to effectively operate. Cash includes currency and coins along with the amounts on deposit in bank accounts, checking accounts (called demand deposits), and many savings accounts (called time deposits). Cash also includes items that are acceptable for deposit in these accounts such as customer checks, cashier's checks, certified checks, and money orders (Wild & Shaw 2011, 321).

Cash equivalents are short-term, highly liquid investment assets meeting two criteria:

- 1 readily convertible to a known cash amount and
- 2 sufficiently close to their due date so that their market value is not sensitive to interest rate changes orders (Wild & Shaw 2011, 321).

Only investments purchased within three months of their due date usually satisfy these criteria. Examples of cash equivalents are short-term investments in assets such as

U.S. Treasury bills and money market funds. To increase their return, many companies invest idle cash in cash equivalents. Most companies combine cash equivalents with cash as a single item on the balance sheet orders (Wild & Shaw 2011, 321).

When companies fail, one of the most common causes is their inability to manage cash. Companies must plan both cash receipts and cash payments. The goals of cash management are the following:

1. Plan cash receipts to meet cash payments when due.
2. Keep a minimum level of cash necessary to operate (Wild & Shaw 2011, 321).

The treasurer of the company is responsible for cash management. Effective cash management involves applying the following cash management principles:

1. Encourage collection of receivables. The more quickly customers and others pay the company, the more quickly that company can use the money. Some companies have cash-only sales policies. Others might offer discounts for payments received early.
2. Delay payment of liabilities. The more delayed a company is in paying others, the more time it has to use the money. Some companies regularly wait to pay their bills until the last possible day allowed—although, a company must take care not to hurt its credit standing.
3. Keep only necessary levels of assets. The less money tied up in idle assets, the more money to invest in productive assets. Some companies maintain just-in-time inventory; meaning they plan inventory to be available at the same time orders are filled. Others might lease out excess warehouse space or rent equipment instead of buying it.
4. Plan expenditures. Money should be spent only when it is available. Companies must look at seasonal and business cycles to plan expenditures.
5. Invest excess cash. Excess cash earns no return and should be invested. Excess cash from seasonal cycles can be placed in a bank account or other short-term investment for income. Excess cash beyond what's needed for regular business should be invested in productive assets like factories and inventories (Wild & Shaw 2011, 321-322).

## 2.4 Control of cash

John Wild et al. (2011) suggest two types of cash control:

1. Control of cash receipts
2. Controls of cash disbursements

Internal control of *cash receipts* ensures that cash received is properly recorded and deposited. Cash receipts can arise from transactions such as cash sales, collections of customer accounts, receipts of interest earned, bank loans, sales of assets, and owner investments. There are two important types of cash receipts: over-the-counter and by mail (Wild & Shaw 2011, 322).

Control of cash disbursements is especially important as most large thefts occur from payment of fictitious invoices. One key to controlling cash disbursements is to require all expenditures to be made by check. The only exception is small payments made from petty cash. Another key is to deny access to the accounting records to anyone other than the owner who has the authority to sign checks. A small business owner often signs checks and knows from personal contact that the items being paid for are actually received. This arrangement is impossible in large businesses. Instead, internal control procedures must be substituted for personal contact. Such procedures are designed to assure the check signer that the obligations recorded are properly incurred and should be paid (Wild & Shaw 2011, 324).

Control of cash disbursements is realized via voucher and petty cash systems of control. A *voucher system* is a set of procedures and approvals designed to control cash disbursements and the acceptance of obligations. The voucher system of control establishes procedures for

- verifying, approving, and recording obligations for eventual cash disbursement;
- issuing checks for payment of verified, approved, and recorded obligations (Wild & Shaw 2011, 324).

A voucher system's control over cash disbursements begins when a company discharges an obligation that will result in payment of cash. A key factor in this system is that only approved departments and individuals are authorized to incur such obliga-

tions. The system often limits the type of obligations that a department or individual can incur.

Petty cash disbursements are the small payments required for items such as postage, courier fees, minor repairs, and low-cost supplies. To avoid the time and cost of writing checks for small amounts, a company sets up a petty cash fund to make small payments (Wild & Shaw 2011, 326).

### **3 ANALYZING BUSINESS ACTIVITIES**

Business activities may be analyzed from different perspectives; the most relevant for this thesis are strategic, marketing, and financial ones. The most common tools for the analysis are to be reviewed in this chapter. They are SWOT analysis as a marketing tool, value chain analysis as a strategic tool; and cash flow analysis as a financial analysis tool.

#### **3.1 SWOT analysis**

SWOT analysis represents the analysis of internal (strengths and weaknesses) and external (opportunities and threats) environment of a company. Each company needs to evaluate its weak and strong points to find new opportunities for development and to oversee possible threats.

SWOT analysis was introduced by Philip Kotler (Kotler et al., 2008). He insists that the business does not have to correct all its weaknesses or boast about all its strengths. The other disputable point, in his opinion, is whether the business should limit itself to those opportunities where it possesses the required strengths or whether it should consider opportunities that mean it might have to acquire or develop certain strengths.

On the other side, all companies are affected macro environment factors (demographic-economic, natural, technological, political-legal, and social-cultural) and significant micro environmental factors (customers, competitors, suppliers, distributors, dealers that affect its ability to earn profits). All these factors should be monitored to establish proper marketing system and look for possible development strategies. For this pur-

pose, the management needs to identify the associated opportunities and threats (Kotler et al., 2008, 52).

Gillian & Wilson (2009) remark that finding out threats and opportunities is a complicated process, as any future development of the company can be categorized as an opportunity or a threat, and the management should assess the action needed to profit from the opportunity or minimization of the impact of the threat. Meanwhile, the authors remark that what might appear to be an opportunity at first sight may not be so after examining the organization's resources, its culture, the expectations of its stakeholders, the strategies available, or the feasibility of implementing the strategy. They suggest understanding an opportunity as any sector of the market where company may obtain competitive advantage. However, the external environment generates not only opportunities, but also threats which may lead to the unfavorable change of the marketing positioning of the company (Gillian & Wilson, 200, 85-87).

Concerning strengths and weaknesses, Gillian & Wilson (2009) classify them into a fundamental strength, a marginal strength, a neutral factor, a marginal weakness, or a fundamental weakness. Connection of these aspects gives a general picture of company's strengths and weaknesses. However, not all the strengths and weaknesses have the same level of the importance. For a more detailed analysis the authors subdivided the strengths and weaknesses according to their relevance (high, medium, low) and according to the factors (marketing, financial, manufacturing and organizational) (Gillian & Wilson, 200, 88-89).

### **3.2 Value Chain analysis**

Value chain is a concept introduced by Michael Porter in 1985 (Porter, 1998). Its aim is to analyze primary and support activities of the company to create value that exceeds the cost of providing the product or service, thus generating a profit margin (Quick MBA).

The value chain describes the activities within and around an organization which create a product or service. It is the cost of these value activities and the value that they deliver that determines whether or not best value products or services are developed. All the activities are divided into primary and support activities (Johnson 2005, 136).

Primary activities are directly concerned with the creation or delivery of a product or service and can be grouped into five main areas:

1. Inbound logistics are the activities concerned with receiving, storing and distributing the inputs to the product or service. They include materials handling, stock control, transport, etc.
2. Operations transform these various inputs into the final product or service: machining, packaging, assembly, testing, etc.
3. Outbound logistics collect, store and distribute the product to customers. For tangible products this would be warehousing, materials handling, distribution, etc. In the case of services, they may be more concerned with arrangements for bringing customers to the service if it is a fixed location (e.g. sports events).
4. Marketing and sales provide the means whereby consumers/users are made aware of the product or service and are able to purchase it. This would include sales administration, advertising, selling and so on. In public services, communication networks which help users access a particular service are often important.
5. Service includes all those activities which enhance or maintain the value of a product or service, such as installation, repair, training and spares (Johnson 2005, 137).

Each of these groups of primary activities is linked to support activities. Support activities help to improve the effectiveness or efficiency of primary activities. They can be divided into four areas:

1. Procurement. This refers to the processes for acquiring the various resource inputs to the primary activities. As such, it occurs in many parts of the organization.
2. Technology development. All value activities have a 'technology', even if it is just know-how. The key technologies may be concerned directly with the product (e.g. R&D, product design) or with processes (e.g. process development) or with a par-

ticular resource (e.g. raw materials improvements). This area is fundamental to the innovative capacity of the organization.

3. Human resource management. This is a particularly important area which transcends all primary activities. It is concerned with activities involved in recruiting, managing, training, developing and rewarding people within the organization.
4. Infrastructure. The systems of planning, finance, quality control, information management, etc. important to an organization's performance in its primary activities. Infrastructure also consists of the structures and routines of the organization which are part of its culture (Johnson 2005, 137-138).

### **3.3 Cash flow analysis**

Traditionally, investors and creditors have most commonly used ratios based on accrual accounting. These days, cash-based ratios are gaining increased acceptance among analysts (Kimmel 2009, 639).

In the statement of cash flows, cash provided by operating activities is intended to indicate the cash-generating capability of the company. Analysts have noted, however, that cash provided by operating activities fails to take into account that a company must invest in new fixed assets just to maintain its current level of operations. Companies also must at least maintain dividends at current levels to satisfy investors. The measurement of free cash flow provides additional insight regarding a company's cash generating ability. Free cash flow describes the cash remaining from operations after adjustment for capital expenditures and dividends (Kimmel 2009, 639).

That is Free cash flow measures the operating cash flow available to a company to use after purchasing the property, plant, and equipment (PP&E) necessary to maintain current productive capacity (Warren et al. 2009, 737). The formula of free cash flow is rather simple. (Figure 1.)

$$\text{Free Cash Flow} = \frac{\text{Cash Provided}}{\text{By Operations}} - \frac{\text{Capital}}{\text{Expenditures}} - \frac{\text{Cash}}{\text{Dividends}}$$

**FIGURE 1. Free cash flow**

Most of the ratios use the accrual-based ratios from the income statement and balance sheet for analyzing company's liquidity and solvency. However, some analysts are critical about the adjustments that are usually made in the income statement and balance sheet and they prefer to calculate the ratios based on cash flow statement in addition to the accrual-based analysis. Still, cash flow based ratios have a disadvantage – there are no readily available industry average numbers for comparison (Kimmel 2009, 641-642).

Kimmel (2009) defines liquidity as “the ability to pay obligations expected to become due within the next year”. Mentioning one measure of liquidity - the current ratio (current assets divided by current liabilities) the author remarks its drawback - the ratio uses the numbers of the end of the period only and they may not be representative of the position of a company during the greatest part of the period. Kimmel (2009) suggest the current cash debt coverage ratio as a more objective solution. It is computed as cash provided by operating activities divided by average current liabilities. Generally, a value below 0,4 may require a more thorough look at a company's liquidity (Kimmel 2009, 642).

Solvency is interpreted as “the ability of a company to survive over the long term” and it is measured by means of the cash debt coverage ratio. It is calculated as the ratio of cash provided by operating activities to total debt as represented by average total liabilities. This ratio indicates a company's ability to repay its liabilities from cash generated from operations (without selling the assets of a company such as property, plant, and equipment). If the result of the ratio is below 0,2, then there is a high probability of accounting insolvency (Kimmel 2009, 643).

#### **4 BUSINESS INTELLIGENCE SYSTEMS**

Enterprise financial software grew up to save money by replacing manual systems for accounting and payroll, but then it became some sort of a warehouse of information

with potential for increasing revenues. This led to the appearance of Business Intelligence (BI) applications in the 1990s. Nowadays there exist numerous BI systems which purpose is to facilitate the financial analysis and make the decision making easier.

#### **4.1 Business Intelligence and its development trends**

Philip Hunter (2010) defines Business Intelligence (BI) as “computer-based techniques used in spotting extracting, and analyzing business data (such as sales revenue) by products or departments or associated costs and incomes. “

Business intelligence concept is connected with the concepts of customer relationship management (CRM) and enterprise resource planning. According to Philip Hunter (2010) customer relationship management is managing an organization’s interactions with clients, partners, and distributors; it is connected with BI by involvement of the usage of the technology to organize, automate, and synchronize business processes such as sales activities, marketing, customer service, and technical support.

Speaking about enterprise resource planning (ERP), Hunter (2010) underlines that it is an integrated computer based system which is used to manage internal and external resources such as tangible assets, financial resources, materials, and human resources. The aim of ERP is to facilitate the information interactions between all the departments and stakeholders inside and outside the organization (Hunter 2010).

Software as a service (SaaS) is a model of software deployment using the Internet as a delivery medium. With SaaS, a provider licenses an application to customers for use as a service on demand, either through a time subscription or a ‘pay-as-you-go’ model. Sometimes also known as ‘software on demand’, the SaaS model allows vendors to develop, host and operate software for customer use. Rather than purchase the hardware and software to run an application, customers need only a computer or a server to download the application and Internet access to run it. Therefore, business intelligence software is a collection of decision support technologies for the enterprises aimed at facilitating decision-making for executives, managers, and analysts (Hunter 2010).

Last two decades were remarked by intense growth, both in the offer of products and services and in the adoption of these technologies by enterprises. This growth has been fueled by the declining cost of acquiring and storing very large amounts of data arising from sources such as customer transactions in banking, retail as well as in e-businesses, RFID tags for inventory tracking, email, and query logs for Web sites, blogs, and product reviews. Enterprises today collect data at a finer granularity, which is therefore of much larger volume. Businesses are leveraging their data asset aggressively by deploying and experimenting with more sophisticated data analysis techniques to drive business decisions and deliver new functionality such as personalized offers and services to customers. Today, it is difficult to find a successful enterprise that has not leveraged BI technology for its business. For example, BI technology is used in manufacturing for order shipment and customer support, in retail for user profiling to target grocery coupons during checkout, in financial services for claims analysis and fraud detection, in transportation for fleet management, in telecommunications for identifying reasons for customer churn, in utilities for power usage analysis, and health care for outcomes analysis (Chaudhuri, 2011).

Enterprise financial software grew up to save money by replacing manual systems for accounting and payroll, but then became a repository of information with potential for increasing revenue in more positive ways. Business Intelligence (BI) refers to computer-based techniques used in spotting extracting, and analyzing business data (such as sales revenue) by products or departments or associated costs and incomes. Customer relationship management (CRM) is a strategy for managing an organization's interactions with clients, partners, and sales prospects. It involves usage of the technology to organize, automate, and synchronize business processes such as sales activities, marketing, customer service, and tech support. Enterprise resource planning (ERP) is an integrated computer based system (or software architecture) used to manage internal and external resources including tangible assets, financial resources, materials, and human resources. Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization, and manage connections to outside 'stakeholders' (Chaudhuri, 2011).

Software as a service (SaaS) is a model of software deployment using the Internet as a delivery medium. With SaaS, a provider licenses an application to customers for use as a service on demand, either through a time-bound subscription or a 'pay-as-you-go'

model. Sometimes also known as ‘software on demand’, the SaaS model allows vendors to develop, host and operate software for customer use. Rather than purchase the hardware and software to run an application, customers need only a computer or a server to download the application and Internet access to run it (Hunter 2010).

#### 4.2 Overview of major Business Intelligence systems

Business Intelligence systems are constantly developed by various companies, which provides a wide choice for the companies. A thorough overview of BI systems in this chapter is provided by Gartner analysts John Hagerty, Rita L. Sallam and James Richardson (Hagerty et al., 2012).

They explain that business intelligence (BI) platforms enable all types of users — from IT staff to consultants to business users — to build applications that help organizations learn about and understand their business (Hagerty et al., 2012)..

According to the Figure 2, one may conclude that the leaders of BI market are Oracle, MicroStrategy, Microsoft, IBM, SAS, SAP, Information Builders and QlikTech. They all have their strong and weak points, which are described by the researches.

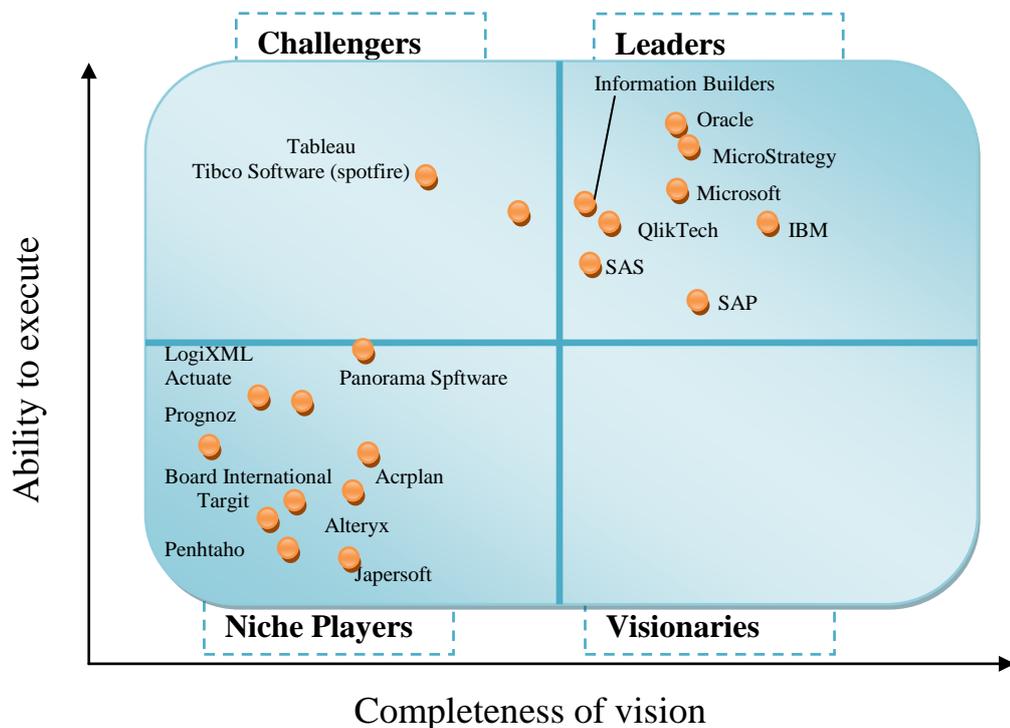


FIGURE 2. Magic Quadrant for Business Intelligence Platforms (February 2012)

The most interesting group for this study is the leaders of the BI industry and Microsoft software particularly. Therefore, Gartner's overview of the advantages and drawbacks of Microsoft is immensely important for further research.

### **4.3 Microsoft Excel as a BI solution for small business**

Business intelligence solutions are expensive by the standards of many, and maybe most, small businesses. There is a real danger of small businesses spending too much on BI systems and finally finding it too complicated to use for their requirements.

Gerry Blackwell (2010) points out several challenges of a professional BI:

- High price (for example, it costs from \$20,000 to \$200,000 to implement QlikView)
- Extra charges (monthly; for extracting data from commonly used applications;
- Data from all sources must also be free of errors and inconsistencies, therefore, you need a competent employee to check it (Blackwell, 2010)

What is the possible solution to avoid high costs? Some experts say it is Microsoft Excel. One of them is Rick Sherman (Sherman, 2005), who made a research about the usage of Microsoft Excel as a Business Intelligence tool. According to the article (Sherman, 2005), Microsoft states that there are over 150 million Excel users, with many of them using it for reporting and analysis of corporate data.

For many years BI vendors have been building front-end tools to try to replace spreadsheets for querying, reporting and analyzing data results. But despite the fact that tens of thousands of BI tool licenses have been sold, spreadsheets are still the most pervasive and dominant tool.

Sherman (2005) explains the popularity of the program by the following reasons:

- It is on practically everyone's PC; there are no extra costs;
- it's easy to learn;
- it does the data manipulation and data graphics companies need for most reports and analyses;

- many business people mastered excel spreadsheets (Sherman, 2005)

BI vendors initially responded in two ways. Firstly, they tried to develop Excel-like interfaces. Secondly, they "integrated" with spreadsheets by exporting data in spreadsheet formats like CSV (without formulas or formatting). This one-way transfer often required business users to reformat and recreate formulas, which did not make them or their IT people (Sherman, 2005).

As far as many analysts confirm that Microsoft Excel is the best solution for small and medium companies, it is important to look at the Microsoft BI products generally (their core offerings). Gartner's research which was made in February 2012 by Hagerty was taken as the basis for defining the strengths and weaknesses of Microsoft as a BI vendor.

### **Strengths.**

Microsoft offers a competitive set of BI capabilities, packaging and pricing that appeal to Microsoft developers and its independent distributor channel. The company has consistently invested in building and enhancing BI capabilities into three of its core offerings — Microsoft Office (specifically Excel), Microsoft SQL Server and Microsoft SharePoint — in order to increase their value and drive upgrades. By incorporating BI capabilities into its most ubiquitous products, Microsoft virtually guarantees its BI offering's continued adoption, particularly in organizations with a Microsoft-centric information infrastructure. As a result of this strategy, since the company's serious entry into the market in 2000, Microsoft's BI market share has grown steadily to take the No. 3 spot in 2010 (Hagerty et al., 2012).

Microsoft's low-license-cost bundling strategy for BI platforms makes it a compelling license-cost value proposition for organizations that are seeking to deploy BI to a wider range of users, or that are aiming at decreasing overall BI portfolio license costs by using lower-cost BI tools for basic BI functions. Its license cost profile is comparable to open-source BI vendors, and it is considerably less than its commercial competitors. Moreover, Microsoft has added a new BI package (server/client access license model) for SQL Server 2012, which makes it easier for customers to license the SQL Server BI portion of the stack. As Microsoft continues to enhance its BI capabilities in prod-

ucts that most companies already own (Office, SQL Server and SharePoint), the functionality premium for alternatives may become increasingly difficult to justify for many organizations. In the Magic Quadrant customer survey, more Microsoft customers cited TCO and license cost as the core reason for selecting Microsoft as a BI vendor than for most other vendors in the survey (Hagerty et al., 2012).

Microsoft's market success is also driven in part by its IT-oriented, BI authoring tools within SQL Server, which are based on Visual Studio, the broadly adopted development environment. This approach, along with targeted marketing efforts and programs for building strong developer communities and support, has helped Microsoft lower the cost and expand the availability of its BI skills. In the Magic Quadrant survey, Microsoft customers rate its BI platform infrastructure among the highest compared to most other vendors, and a higher percentage of customers use it extensively. Moreover, "wide availability of skills" is among the top reasons why customers select Microsoft more often than all other competing vendors in the survey (Hagerty et al., 2012).

While Microsoft has traditionally focused on the developer, it continues to enhance reporting, dash boarding and data discovery capabilities in Excel with the intention of making Excel not only the most widely deployed BI tool, but also the most functional for business users. With its April 2010 release of SQL Server PowerPivot and the upcoming release of Power View in SQL Server 2012, Microsoft has earned the distinction of being the first mega vendors to offer a credible response to the groundswell of interest in, and acceptance of, interactive visualization tools as an alternative and complement to traditional report-centric architectures. Compared to what is available with competing stand-alone data discovery products, the user and usage monitoring capabilities of PowerPivot workbooks in SharePoint give IT greater control over what content is shared, and the process of validating data sources, models and calculations contained in PowerPivot workbooks. With the SQL Server 2012 release Microsoft is expected to build on this set of managed business user capabilities by enabling PowerPivot to move seamlessly from a personal workbook to an enterprise data source and deployment. Specifically, IT will be able to import user-created content from a personal PowerPivot model into the professional BI environment of Visual Studio. This capability can help to bridge the departmental silo/enterprise divide, without compromising on business-user flexibility (Hagerty et al., 2012).

Use of OLAP functionality by Microsoft customers is among the highest when compared to other vendors. This can be attributed to the success and adoption of Microsoft SQL Server Analysis Services functionality bundled with Microsoft SQL Server and its optimizations with Microsoft front-end tools. Building on the in-memory capabilities of SQL Server PowerPivot, in SQL Server 2012, Microsoft will introduce a fully in-memory version of Microsoft Analysis Services cubes that enables the subsecond analysis of billions of rows (as opposed to hundreds of millions of rows supported today by PowerPivot), to address the needs of organizations that are turning to newer in-memory OLAP architectures over traditional multidimensional OLAP architectures to support dynamic and interactive analysis of large datasets (Hagerty et al., 2012)..

Microsoft's cloud-based DataMarket offering, which makes external data easier to consume, analyze and integrate with internal data, is a unique enhancement to Microsoft's portfolio of BI capabilities. DataMarket is an online data market that enables ISVs and business users to access, purchase and analyze trusted, public-domain and commercial premium data (Hagerty et al., 2012)..

### **Cautions.**

Since Gartner began surveying BI platform customers for this Magic Quadrant research five years ago, this is the first year that Microsoft has scored below the survey average on key Ability to Execute measures, including overall product functionality, support and customer experience. These results are reflected in Microsoft's lower relative Ability to Execute position on the Magic Quadrant compared to last year (Hagerty et al., 2012)..

Multiproduct complexity is a challenge. Because Microsoft's BI platform capabilities exist across three different tools (Office, SQL Server and SharePoint) that also perform non-BI functions, integrating the necessary components and building the applications is left to the organization. Microsoft's do-it-yourself approach puts more of the BI solutions development and integration ones for the platform components on customers, compared with the all-in-one purpose-built BI platforms offered by most other vendors in the BI market. Microsoft's road map for Office, which features the consolidation of more and more front-end reporting, dashboard and analysis capabilities in Excel, should begin to address some of this complexity over time. Moreover, although

BI in the cloud is not yet a high priority for most organizations in the Magic Quadrant survey, Microsoft has placed cloud deployment at the top of its list of major development and go-to-market initiatives for BI by ultimately making its core BI products — SQL Server, SharePoint and Office — available in the cloud. This investment and emphasis is core to Microsoft's strategy to make BI easy to deploy and low-cost — cloud-based BI will, in theory, remove some of the complexity of the three-component requirement (Hagerty et al., 2012).

Microsoft lags behind most other BI vendors in delivering mobile BI capabilities. It has, instead, relied on partners, such as Decision Support Panel, Roambi and Extended Results, to build mobile solutions for Apple iOS that integrate with Microsoft BI components. Microsoft BI assets can run in a browser today, but they are not optimized for iOS, Android or Windows devices. Microsoft has stated that it plans to optimize browser experiences on mobile devices in the future, including the version of Safari provided by the iPad. It is notable that despite limitations to Microsoft's current mobile BI capability, an above average percentage of Microsoft BI customers report that they plan to deploy a mobile BI solution in the next 12 months (Hagerty et al., 2012).

Microsoft discontinued the development of Microsoft Office PerformancePoint Server 2007 (PPS 2007) as a stand-alone solution for financial analytic applications (for example, planning, budgeting and consolidation) in favor of moving its CPM capabilities, such as financial reporting, into the Dynamics applications. Microsoft moved the functionality in PPS 2007 for dashboards, scorecards and analysis natively into SharePoint as SharePoint 2010 PerformancePoint Services. As a result, Microsoft's performance management product strategy lags behind that of the other stack vendors (IBM, Oracle and SAP) that offer stand-alone CPM products. Microsoft instead relies on its partners to deliver Microsoft-based CPM solutions (Hagerty et al., 2012).

There is currently no single business metadata layer or capability that spans Microsoft's BI platform components, and there are limited capabilities for sophisticated metadata modeling, impact analysis, data lineage and change management. In Gartner's BI platform customer surveys, Microsoft scores below average year after year for its metadata capabilities. The lack of a unified semantic model of Microsoft system has been a key customer pain point and limitation. In response, Microsoft will be

shipping the BI semantic model as the single business metadata layer, in the SQL Server 2012 release for relational and multidimensional data, and is adding data lineage, impact analysis and master data services in SQL Server 2012. As customers upgrade, one would expect these results to improve in next year's Magic Quadrant survey (Hagerty et al., 2012).

Microsoft's recent announcement to support Hadoop on Windows is a signal that it has plans to support diverse data types. However, unlike Oracle and IBM, beyond Hadoop, even though Microsoft has Bing, its core search engine, and FAST, its enterprise search engine in SharePoint 2010, Microsoft has not articulated a comprehensive vision around delivering analytics for diverse data. At the time of the FAST acquisition, However, FAST was gaining some traction with its BI search capabilities (Hagerty et al., 2012).

## 5 RESEARCH METHODS

While conducting a business research, data collection and data analysis are divided into quantitative and qualitative. The quantitative method is based on numerical data, qualitative research, on the contrary, relies on non-numeric data (words).

Mark Saunders, Philip Lewis and Adrian Thornhill (Saunders et al., 2009) define **quantitative data** as any data collection technique (for example, a questionnaire) or data analysis procedure (such as graphs or statistics) that deals with numerical data. **Qualitative research**, on the other hand, mainly implies as data collection technique (an interview) or data analysis procedure (categorizing data) that handles non-numerical data. Even though qualitative research is usually referred to words, it can sometimes deal with types of data such as pictures and video clips (Saunders et al., 2009, 151).

Therefore, focus groups, in-depth interviews, content analysis, ethnography, evaluation and semiotics are among the many approaches that apply to qualitative research, but in its most basic form this method involves the analysis of any unstructured data, including open-ended surveys, literature reviews, audio recordings, pictures and web pages.

## 5.1 Interview

Analyzing various BI systems, it is important to find out what IT software is useful for the case company. An in-depth interview was chosen as a research method for getting detailed data.

Before starting the interview process, it is essential to define what the interview is and choose a proper type. According to Mark Saunders, Philip Lewis and Adrian Thornhill (Saunders et al., 2009), an interview is “a purposeful discussion between two or more people”. The use of interviews can help to collect valid and reliable data that are relevant to the research questions and objectives.

There are various classifications of the interview. Interviews may be highly formalized and structured, using standardized questions for each research participant (often called a respondent), or they may be informal and unstructured conversations. In between there are intermediate positions (Saunders et al., 2009, 320).

In the book “Research methods for business students” Mark Saunders, Philip Lewis and Adrian Thornhill mention several classifications. One of them, presented by Healey and Rawlinson (Healey 1991; Healey and Rawlinson 1993, 1994), differentiates standardized and non-standardized interviews. The other typology, created by Powney and Watts (1987), distinguishes respondent (participant) and informal interviews (Saunders et al., 2009, 320).

The current research was based on the typology introduced by Mark Saunders, Philip Lewis and Adrian Thornhill (Saunders et al., 2009). It subdivides the interviews into:

- Structured interviews;
- Semi-structured interviews;
- Unstructured or in-depth interviews.

**Structured interviews** are basically questionnaires which contain a predetermined and identical set of questions. These interviews may be referred as interviewer-administered questionnaires. As the purpose of the structured interviews is to collect quantitative data they are also referred to as ‘quantitative research interviews’ (Saunders et al., 2009, 320).

By comparison, **semi-structured and in-depth interviews** are ‘non-standardized’. In this type of the interviews the researcher has a list of topics and questions to be discussed during the interview, although these may vary in certain situations. Therefore, it is possible to omit some questions in particular interviews, or to ask extra question that occur in the process, creating a specific context of the interview. The order of questions may differ as well, depending on the flow of the conversation. Besides, additional questions can be necessary to explore research topic and objectives given the nature of events within particular organizations. The nature of the questions implies that the data will be recorded by audio-recording the conversation or note taking (Saunders et al., 2009, 321).

Unstructured interviews are informal and the researcher does not have a predetermined list of questions to be discussed during the interview. Though, the researcher needs to have a clear objective and the understanding of the most important aspects for the interview.

## **5.2 Observation**

Observation is the other research method used for the thesis. Mark Saunders, Philip Lewis and Adrian Thornhill (Saunders et al., 2009) subdivide observation method into:

- Participant observation
- Structured observation

According to the authors, structured observation is systematic and has a high level of predetermined structure. The observer is more detached and interested in quantifying behavior. The disadvantage of such observation is that it gives the information about how many times these types of actions happened , but does not explain the motives why it happened (Saunders et al., 2009, 300).

Participant observation belongs to the qualitative research and it originates from the science of social anthropology. Structure observation, on the other hand, is quantitative and its main purpose is to count the number and the frequency of the actions (Saunders et al., 2009, 288).

Giving a more detailed look at the participant observation, there exist several roles for the observer:

- complete participant (a researcher is trying to become a research group member and does not reveal his or her purposes);
- complete observer (a researcher does not participate in the activities of the observing group and keeps the purpose secret);
- observer as participant (a researcher here is more a spectator, but the group knows that they are being observed);
- participant as observer (a researcher reveals the purposes of the research process and participates in the activities) (Saunders et al., 2009, 293-295).

The first two roles (complete participant and complete observer) mean that the researcher conceals his or her identity. These roles make the observation more objective, because the group does not know about the research and group members behave as usual. However, these roles are problematic from the ethical point of view. Last two roles (observer as participant and participant as observer) help to explore the process deeper, because a researcher may discuss certain issues with the group.

Besides, Mark Saunders, Philip Lewis and Adrian Thornhill (Saunders et al., 2009) subdivide data received by means of observation into primary, secondary and experiential. Primary observations are mostly taking notes or record of the events. Secondary observations are observers' statements about the events and they include the interpretations. Experiential data is connected to the perceptions of the observer during the observation process and the way they might change (Saunders et al., 2009, 296).

Mark Saunders, Philip Lewis and Adrian Thornhill (Saunders et al., 2009) adduce the following factors which determine the choice of the role:

- the purpose of the research;
- available time (participant roles are more time consuming);
- personal traits (participant observer role requires more flexibility);
- organizational access;
- ethical considerations (Saunders et al., 2009, 295-296).

Therefore, before starting observation, a researcher should choose the appropriate role considering the research purpose, personal qualities, the subject of the research and ethical issues.

### **5.3 Research process**

The purpose of the conducted research was to learn about the current situation of the financial flows control in the case company Technobatilux and discuss the requirement for the IT tool which can facilitate the decision making in the company. In-depth interview and participant observation were chosen as research methods.

The first research method was participant observation. The role was participant as observer. The choice of the role was determined by the fact that I worked as an intern in the company for 3 months (January – April 2012) and my activities directly involved dealing with accountancy of the company (double- entry bookkeeping, understanding the accounting principles in the company) and participation in the project with the purpose to create an excel file which would facilitate cash flow control in the company.

The first stage of primary data collection was carried out during my internship by keeping the records for the internship report about what the situation used to be and what is the current situation of financial management in the company is. As far as the company was organized in March 2011, they did not have a need of employing a full-time accountant. They made a contract with an outside accountant who was making all reports about VAT, salaries, pensions etc in his office for several companies. It lead to a mess in accounting, because management could not get the data in time, the accountant was quite difficult to reach when they needed his advice.

Therefore, from 2012 they made a decision to do all the bookkeeping themselves and hire a chartered accountant for consultations and preparing reports for tax and other state services. After a considerate check, he found several mistakes and educated office staff (including me) about the right usage of the accounting program “Ciel” and the correct accounting practices. From that moment it was he who prepared quarterly and yearly reports for the government and calculated the salaries monthly.

Still, the management realized the need for more control over finance. To define the needs of the company, the best solution was in-depth interview. Firstly, it would allow obtaining the required necessary data through the pre-prepared set of topics and questions. Secondly, it implies flexibility and helps to ask extra questions and get deeper data. Finally, it was more suitable for the current research, because the interview was held on-line via Skype.

The preparation included several stages:

1. Deciding on the main topic and questions to be asked (Appendix 1.)
2. Making an appointment for the interview.

As a result, the interview was conducted with the financial director Marina Bogacheva on the 8th of November 2012. Establishing the contact was quite easy because of the warm relationships developed during the internship. Moreover, the company itself is interested in the development of the project and possible improvements which were already made and are going to be made.

The interview helped to reveal the reasons why the company needs a tool to control the cash flow, what were the requirements for this tool and what has been done and what is planned to be done. Combination of the research methods mentioned above (observation and interview) ensures that the research is reliable and unbiased.

## **6 SARL TECHNOBATILUX AND CASH MANAGEMENT**

This chapter is aimed at giving the general ideal about the company and its activities and its analysis by means of SWOT and Value Chain analysis. Besides, it describes the cash flow management in the company before January 2012.

SARL Technobatilux is a French private limited liability company founded by two entrepreneurs: Mr. Chaouch, who has over 25 years experience in the construction and renovation in Italy (Milan) and Monaco; and Miss Bogacheva, who has over 10 years experience in finance and international investment, mainly with a consulting world-wide company: PricewaterhouseCoopers, Moscow, Russia.

## 6.1 Description and activities of the case company

The company was organized in March 2011 on the basis of the previously existed company (2009-2011). The company was reorganized because of the change in partnership and new management vision. Mr. Chaouch is now the chief and technical director and head of the projects and Miss Bogacheva is responsible for the foreign affairs administration and accounting.

The former company made a turnover of 684,000 Euro in 2009, with net income of 120,400 euro, and in 2010 the turnover was 1,645,300 euro. Contrary to all expectations, the net income for 2010 was a loss of almost 300,000 euro. This loss began the long process of analysis of weaknesses in business, resulting in antagonisms between the two partners. The conducted analysis highlighted the following problems:

- Inflexibility of organizational structure (in February 2011 there were 54 workers with open-ended contracts),
- Lack of discipline (non-compliance with working hours, strikes),
- Lack of control over expenditures,
- Uncertain purchasing policy,
- Lack of budgeting / planning / project management control, etc.

These problems resulted in long delays in the work and very high costs. Mr. Chaouch, technical director and project manager, saw the solution of problems in proper financial management. According to his plan, new treaties were concluded in March 2011. The new company was created on the 31<sup>st</sup> of March 2011 and it exists nowadays.

The economic sector here the company operates is the Building and Public Works and it includes all activities of design and construction of public and private buildings, industrial or otherwise, and infrastructure such as roads or pipelines.

To define the position of the company at the market, it is necessary to describe its activities and have an overview of the major competitors. The information was gathered by means of observation and secondary sources research.

## Competition

The construction sector in France is represented by about 480 000 companies (of which 93% have fewer than 10 employees because of a great number of independent craftsmen (Les entreprises - Métiers du BTP, 2012).

In 2009 there were about 52 000 construction enterprises in Provence-Alpes-Côte d'Azur which employed more than one hundred people. The turnover in building was 9 632 million euro (without VAT), and 3 537 million euro in public works (Les entreprises - Métiers du BTP, 2012). Therefore, the sector may be considered as a competitive one.

Technobatilux faces two types of competition: direct and indirect.

Direct competition consists of all firms offering similar products or services: the construction of private houses, the renovation and maintenance of apartments and shops.

It can be subdivided into:

- 1) Large scale construction enterprises (EIFFAGE, VINCI, Maisons France Confort , FAYAT etc)
- 2) Small and medium sized enterprises
  - a. Companies with specialization in construction of residential and non-residential buildings (Maisons Avenir Tradition, Maisons Olivia De L'Oustal etc.)
  - b. Companies with specialization in certain fields like plaster works, joinery, installation of heating etc.
- 3) Self-employed craftsmen

Indirect competition is made up of businesses, offering a different product or service but meeting the same need – for example, the increasing popularity of “Do It Yourself” trend (online guidance, booklets, magazines etc). These factors make the competition rather intense.

## Activities

The activities of Technobatilux are designed to meet the need of two market segments:

B to C: The major target market is Eastern European customers (particularly from Russia and Ukraine) who would like to have a house built or an apartment renovated on Côte D'Azur (Nice, Cannes and other French cities on the Mediterranean coast). These customers usually do not speak French or fluent English, so TECHNOBATILUX provides its services in Russian.

B to B: The other segment is a professional one: company has a number of partner companies (suppliers of the materials, smaller companies-sub-contractors that provide specific services like plumbing etc)

The activities of construction companies in France are determined by NAF 2008 codes (Insee, 2010). (Table 1.). All the codes were translated from the French language, because there was no English version.

**TABLE 1.** Company's activities

<b>Code</b>	<b>Description</b>
<b>41.20A</b> <b>Construction of residential and nonresidential buildings</b>	General construction or various trades taking overall responsibility for the construction of a building
	The modification or renovation of existing residential structures
<b>43.99C</b> <b>Masonry and general structural works</b>	Construction activities specializing in one aspect common to different structures, requiring specialized skill or equipment: <ul style="list-style-type: none"> <li>• masonry, paving;</li> <li>• masonry and concrete work</li> <li>• realization of fencing of masonry or concrete plates</li> <li>• mounting frames for concrete forms</li> </ul> <p style="text-align: right;">To be continued</p>

**TABLE 1.** Company's activities (continues)

	<ul style="list-style-type: none"> <li>• realization of roads and connections to various networks (excluding trenching)</li> <li>• structural works without overall responsibility for construction</li> <li>• refacing using the mortar</li> </ul>
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The planning of the houses is provided by an outside architecture. The company employs a plan-maker, who can implement usual renovation projects. For more exquisite projects, Technobatilux offers the services of designers and accepts the plans made by independent designers.

Therefore, the company provides the following services:

1. Construction of individual houses - "turnkey" projects;
2. Renovation of business premises and apartments;
3. Minor works (masonry, plumbing, electrical, tiling, air conditioning, etc).

## **6.2 Cash flow management in SARL Technobatilux**

As it was mentioned before, Technbatilux is relatively young and they did not have their own accountant (that is a common practice for small companies in France). They had a contract with an accountant that provided services for several companies that made it quite inefficient. Besides, due to the nature of its activities, the company got a lot of bills from the suppliers and sub contractors which were paid by cash or its equivalents. It made cash management extremely important.

The company cash management deals with receipts control, petty cash and cash disbursements control. Receipts control was already well-organized in the company: all the receipts from the cafés, supermarkets, restaurants, petrol stations were collected into one envelope on a monthly basis. Talking about the bills from the suppliers and sub contractors, they were put into chronological order starting with the 1<sup>st</sup> day of the month. Besides, the company had agreements with the major supplier: once a month

the supplier sent them the copies of all the bills (paid and unpaid), so it was easy to track whether some bills were lost.

Concerning cash disbursements control, it was quite secure, because the access to the check book and the corporate bank cards had only two people: the director and the supplying manager. Still, it occurred, that the checks did not contain enough information (for example, there was no indication of the date and to whom the check was given). This fact made verifying the bills with the back records quite time consuming.

Petty cash was a weak point, because usually there were no records about whom and in what amount the money from the till were given. The only prove were receipts, which were sometimes lost.

As a result after almost a year of operating, the company had to revise all the receipts and bills and verify all the data with the bank accounts. Because some receipts were missing, there were some minor differences in the cash the company had and the amount it spent.

### **6.3 SWOT analysis of Technobatilux**

Analysis of the company by means of SWOT was carried out by means of the participant observation during my internship. SWOT analysis was made to determine major problems of the company and its possible threats which can be solved by more precise controlling of cash flows.

It allows to look and strong and weak points inside the company and to see the opportunities of possible improvements. Therefore, carrying out SWOT analysis which consists of strengths and weaknesses of Technobatilux (Table 2) and opportunities and possibilities (Table 3) is essential to correct possible weaknesses and avoid threats aiming at developing the business and creating competitive advantage which would grow into sustainable development of the company.

**TABLE 2.** Strengths and weaknesses of Technobatilux

	<b>Strengths</b>	<b>Weaknesses</b>
<b>Product</b>	<ul style="list-style-type: none"> <li>- High quality of provided services with 10-year warranty</li> <li>- Additional services individualized for every customer (picking up from the airport, help with shopping and dining for clients who do not speak French etc)</li> </ul>	<ul style="list-style-type: none"> <li>• The individualization of the services requires more time, as a result the company is not capable to take more products and the costs are higher</li> </ul>
<b>Price</b>	The company's main pricing strategy – skimming- allows increasing profit margins. Meanwhile, price flexibility in certain situations	<ul style="list-style-type: none"> <li>• The product quality and market positioning ( building and renovation of top quality) does not allow the usage of low quality material)</li> <li>• The company has all legal permissions for constructing in France, it provides</li> </ul>
<b>Place</b>	<ul style="list-style-type: none"> <li>• Versatile distribution : <ul style="list-style-type: none"> <li>- Real estate agents in Russia and France</li> <li>- Web-Site and e-mail</li> </ul> </li> </ul>	The cost of distribution via intermediaries (real estate agents) is quite high (3 – 7% of the project price).
<b>Promotion</b>	<ul style="list-style-type: none"> <li>- Versatile promotion, especially via internet : web-site, on-line catalogues, web-site</li> <li>- High quality services provide intense word-of-mouth advertising</li> <li>- Professional site, logo build recognizable image of the company</li> </ul>	The lack of print and outdoor advertising, because of high costs

It is evident that the company has a lot of strengths, but still it has certain weaknesses (especially it concerns financial issues)

**TABLE 3. Opportunities and threats**

	<b>Opportunities</b>	<b>Threats</b>
<b>Offer</b>	<ul style="list-style-type: none"> <li>• Possibility of penetration to new markets (Monaco, Italy) due to increasing interest of Russian speaking clients to these countries</li> <li>• Obtaining the certification for swimming pool construction</li> </ul>	Intense competition because of the easiness of market penetration
<b>Demand</b>	<ul style="list-style-type: none"> <li>• Constant increase in demand on real estate in the south of France</li> <li>• Increasing interest of Russian speaking customers in real estate in Southern Europe as a whole</li> </ul>	Customers' taste may change under the influence of the fashion, they may become more picky, experienced etc
<b>Environment</b>	<ul style="list-style-type: none"> <li>• The concept of sustainable development, which is one of the point of the company's strategy</li> <li>• Government favors long-term investments which may stimulate the company's growth</li> <li>• A great number of skilled workforce</li> <li>• The development of the constructing technologies</li> </ul>	Constantly changing legislation (especially tax legislation)

To sum up the SWOT analysis, it is possible to conclude that the company has a well-developed marketing strategy, but as far as the market is not stable the company definitely needs other tools for sustainable activities.

#### 6.4 Value chain analysis of Technobatilux

Technobatilux value chain analysis was made together with the financial manager in March 2012. Its purpose was to point out the major management needs and to think about the possible solutions. (Table 4.)

**TABLE 4.** Value Chain analysis.

<b>Primary Value chain activities</b>	<b>Management Needs</b>
<b>Inbound Logistics</b> include the receiving, warehousing, and inventory control of input materials	<ul style="list-style-type: none"> <li>- Get the supplies in time</li> <li>- Correct transportation and storage conditions to avoid damage</li> </ul>
<b>Operations</b> (the processes of transforming inputs into finished products and services)	<ul style="list-style-type: none"> <li>- Compliance with due dates</li> <li>- Quality control</li> <li>- Constant customer support (weekly reports about the progress of the projects, pick-up from the airport etc)</li> </ul>
<b>Outbound Logistics:</b> activities required to get the finished product to the customer, including warehousing, order fulfillment	<ul style="list-style-type: none"> <li>- Invoicing in time</li> </ul>
<b>Marketing &amp; Sales:</b> activities associated with getting buyers to purchase the product, including channel selection, advertising, pricing, etc.	<ul style="list-style-type: none"> <li>- Promotion channels</li> <li>- Customer satisfaction</li> <li>- Pricing</li> </ul>

- To be continued

**TABLE 4.** Value Chain analysis (continues).

<b>Service:</b> the support of customers after the products and services are sold to them (customer support, repair services, etc.)	<ul style="list-style-type: none"> <li>- Warranty</li> <li>- After service relations</li> </ul>
<b>Support Activities</b>	
<b>The infrastructure of the firm:</b> organizational structure, control systems, company culture, finance, legal, quality management etc.	<ul style="list-style-type: none"> <li>- Financial control</li> <li>- Legislation compatibility</li> <li>- Service quality management</li> </ul>
<b>Human resource management:</b> employee recruiting, hiring, training, development, and compensation.	<ul style="list-style-type: none"> <li>- Recruitment of skilled personnel</li> <li>- Planning of the staff schedules</li> <li>- Salaries</li> <li>- Safety</li> </ul>
<b>Technology development:</b> technologies to support value-creating activities.	<ul style="list-style-type: none"> <li>- Usage of efficient technologies</li> </ul>
<b>Procurement:</b> purchasing inputs such as materials, supplies, and equipment.	<ul style="list-style-type: none"> <li>- Creation of qualitative supply chain</li> <li>- Professional subcontractors</li> </ul>

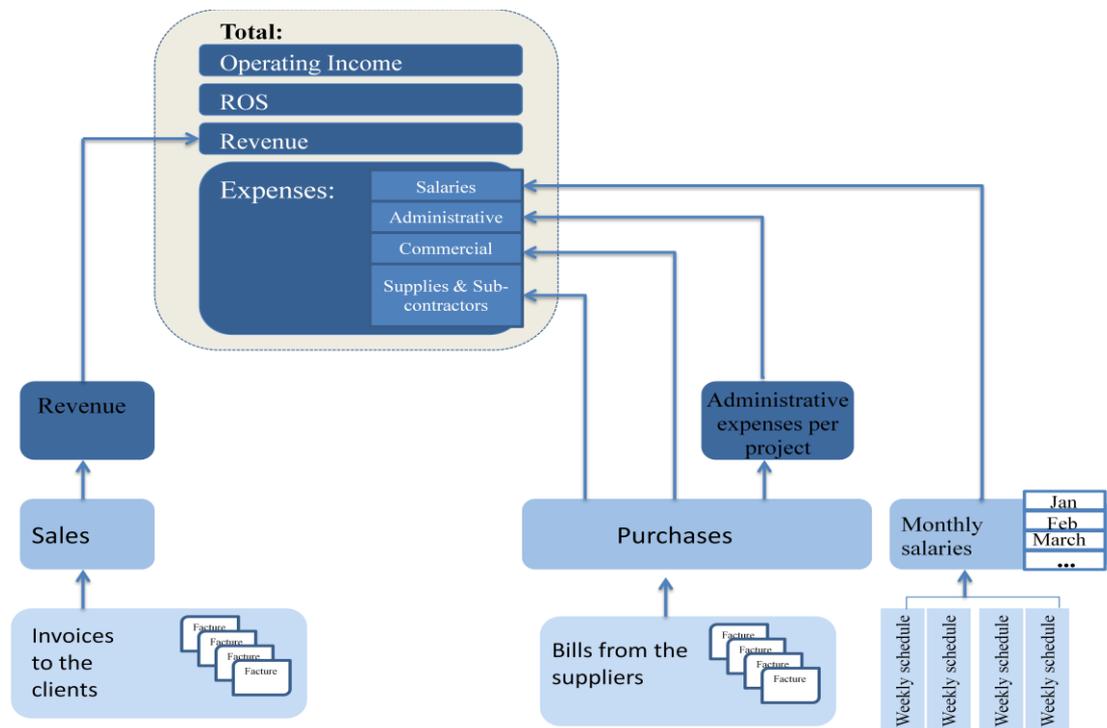
## 7 CASH FLOW CONTROL TOOL FOR TECHNOBATILUX

The solution for the company was created together with the financial director of Technobatilux Marina Bogacheva who had eight year experience in financial management before establishing Technobatilux in France. The project was held during January – April 2012 and during this period a demo version of the Microsoft Excel file was developed. The important details about the functionality and possible improvements were received from the in-depth interview

## 7.1 Developing Excel spreadsheet for cash control in Technobatilux

The employer of this project is a micro company, thus, it cannot afford buying expensive software. Some of the professional software is pretty complicated, expensive or both. After the analysis, the management concluded that Microsoft excel matches the needs of the company and it is the best solution during the current stage of the company's development, because the company already has Microsoft Office 2010, the employees are competent in Microsoft Excel, and it is suitable for the small number of projects (usually, 2-5) the company implements at a time.

Considering the company's need, it was decided that Excel spreadsheets should include the most essential information. (Figure 3.)



**FIGURE 3. Structure of the Excel Spreadsheets**

The structure of the demo version which was developed during the internship in January-May 2012, differed from the one mentioned above. It included only the most essential things such as sales, purchases and the total summary of costs and profits. Below one may see these tables and their description. It is important to note that all the numbers, dates and names are changed due to business ethics reasons.

The first spreadsheet is devoted to the sales. (Table 5.). Here a manager can see:

- Date of issuing the invoice
- Invoice amount with and without tax and also tax amount
- Name of the client and the code of the project
- Number of the invoice from the register
- Sum which is to be received (accounts receivable) or is already received and the mode of payment (usually, clients pay by bank transfers and checks, rarely by cash).

**TABLE 5. Excel Spreadsheet “Sales”**

SALES									
DATE	Price including tax	Net of Tax	VAT	Client	Code	Invoice #	Received	Accounts receivable	Mode of Payment
08.01 .2012	7 000	6 635	365	Client 1	021	2012/04	7 000	0	Bank Transfer
20.01 .2012	5 000	4 739	261	Client 2	005	2012/09	0	5 000	
28.01 .2012	10 000	9 479	521	Client 2	005	2012/05	10 000	0	Check
06.02 .2012	50 000	47 393	2 607	Client 2	005	2012/08	50 000	0	Bank Transfer
07.02 .2012	20 000	18 957	1 043	Client 2	005	2012/10	20 000	0	Bank Transfer
21.02 .2012	10 000	9 479	521	Client 2	005	2012/06	10 000	0	Bank Transfer

The next spreadsheet is “Purchases”. (Table 6.) It includes all the expenses and bills the company has to pay. The expenses are subdivided into

- Administrative (they have the code 038); these are the expensive connected with office activities and the cost is less than 500 euro. Besides, administrative costs include all fixed costs such as rent, insurance etc;

- Commercial (all the money spent on the client services; usually meetings in the restaurant, excursion, presents etc);
- Salaries;
- Supplies and Subcontractors (bills from the suppliers as well as credit notes; contracts with other companies)
- Banking charges.

The last three columns represent the money which was paid or not paid and how they were paid. Here the modes of payment differ more than in sales. The company pays by bank card, via bank transactions, cash, bank checks, standing orders.

**TABLE 6. Excel Spreadsheet “Purchases”**

Purchases										
DATE	Price including tax	Net of Tax	VAT	Supplier	Code of project	Reference #	Type of expenses	Paid	AP	Mode of payment
	970	811	159					770	200	
11.11.2011	100	84	16	Supplier 1	038	1 234	Adm	100	0	Bank card
11.11.2011	50	42	8	Cafe 1	021	201	Com	50	0	Cash
11.11.2011	200	167	33	Supplier 2	003	12 345	Mat	0	200	
11.11.2011	150	125	25	Supplier 4	003	12 346	Mat	150	0	Cheque
11.11.2011	500	418	82	Company 2	021	10	Subcon	500	0	Bank card
11.11.2011	20	17	3	Bank	038	98 765	Bank	20	0	Bank card
12.11.2011	-50	-42	-8	Supplier 2			Credit	-50	0	

The main spreadsheet “Total” represents the summed up information for every project: revenue, expenses (salaries, administrative, commercial, supplies and subcontractors). As a result, it shows the operating income and calculates ROS (Return on Sales –a ratio that provides insight into how much profit is being produced per euro of sales and shows the company’s efficiency in a project). (Table 7.)

**TABLE 7. Excel Spreadsheet “Total”**

Year			
2011			
	Code	004	005
	INFO	Project 1	Project 2
YEAR 2012	<b>Operating Income (EURO)</b>	12 000 €	0 €
	<b>ROS (%)</b>	22%	#DELO!
	<b>Revenue</b>	55 500 €	0 €
	<b>Expenses TOTAL</b>	48 500 €	0 €
	Salaries	7 850 €	0 €
	Administrative	1 100 €	0 €
	Worker 1	2 000 €	0 €
	Worker 2	1 000 €	0 €
	Worker 3	0 €	0 €
	Worker 4	1 150 €	0 €
	Worker 5	0 €	0 €
	Worker 6	1 000 €	0 €
	Worker 7	1 600 €	0 €
Supplies & subcontractors	6 400 €	0 €	
Administrative expenses	1 500 €	0 €	
January	<b>Operating Income (EURO)</b>	8 500 €	0 €
	<b>ROS (%)</b>	34%	#DELO!
	<b>Revenue</b>	25 000 €	0 €
	<b>Expenses TOTAL</b>	16 500 €	0 €
February	<b>Operating Income (EURO)</b>	-1 500 €	0 €
	<b>ROS (%)</b>	-5%	#DEL/0!
	<b>Revenue</b>	30 500 €	0 €
	<b>Expenses TOTAL</b>	32 000 €	0 €

As it is seen in Table 8, the manager is able to see if the project is profitable or not every month and then allocate resources next month to make it more profitable. The “total” spreadsheet is interlinked with other spreadsheets where revenues, costs and salaries are calculated. The dependence between the work sheets allows avoiding manual typing of the data. (Table 8.)

**TABLE 8. Description of the Excel document**

<b>№</b>	<b>Title of the spreadsheet</b>	<b>Description</b>	<b>Incoming Document</b>	<b>Outcoming Document</b>
Level1. Automatic				
1	Total	Includes: - Operating Income - Revenue on Sales - Revenues - Charges (administrative, commercial, salaries, supplies and subcontractors)  This spreadsheet reflects revenue and profitability of every project on monthly and yearly basis.	- Revenue (2) - Administrative Costs (3) - Salaries (6) - Purchases (5)	-
2	Revenue	It reflects the amount of money the company receives from a client for every project.	Sales(4)	Total (1)
3	Administrative charges per project	Administrative charges are calculated per each project proportionally to the overall price of the project	Purchases(5)	Total (1)

To be continued

Level 2, Semi automatic				
4	Sales	It shows paid and not paid customers' bills( may be compared to the accounts receivable)	Invoices to the clients (7)	- Revenue(2) - Total (1)
5	Purchases	It fixes all the costs depending on the category (administrative, salaries etc.)	Bills from the suppliers(8)	
6	Salaries	This spreadsheet contains the name and professions of the employees and the number of working hours per project.	Weekly schedule (9)	Total (1)
Level 3. Manual (which are not included to the excel, but fixed in the accounting)				
7	Invoices to the clients	Invoices that are to be paid by the client	-	Sales(4)
8	Bills from the suppliers	Bills that received from the suppliers	-	Purchases (5)
9	Weekly schedules	Papers filled by the employees (how many hours an employee worked at a project during a week)		Salaries (6)

## 7.2 Possible development and further application

The first part of the sub-chapter is based on the in-depth interview that helped to point out at some corrections that have been made and some points where the file could be improved. The second part is devoted to the advantages of the developed system and its possibilities for other companies.

First demo addition that was made during summer 2012 concerns the cost of work per project on monthly basis (table 9.). It allows seeing what kind of works was completed during one month period and how many days were spent on the certain type of job.

**TABLE 9.** Cost of jobs per month

<b>TOTAL January</b>				
	<b>Code of the project</b>	<b>Total cost</b>	<b>001</b>	<b>004</b>
	Days		20	12
	Cost of works	6 450	4 450	2 000
	Office Workers	0	200	0
	Tiler	0	0	1 000
	Electrician	0	0	0
	Unskilled workers	0	2 000	1 000
	Carpenter	0	750	0
	Painter	0	0	0
	Plumber	0	1 500	0

This addition was considered an important one, because it gives the idea about the situation with every single project. Besides, it facilitates the tasks of a manager who gives monthly reports to the clients about what was done during the month and whether the company follows the contract timing if there are some delays. The other improvement that was made is to include more financial analysis ratios to see more detailed results. Besides, the file should definitely include liquidity and solvency ratios that were described in chapter 3.3.

However, it is hard to control which project the employee was working on, as one person may sometimes work on several projects during one day. Probably, the solution to it would be presence leaves (Appendix 2.) These presence leaves may contain the information not only about the hours spent on this or that project, but also notes about the absence and reasons. Although, as a rule, employees do not work on Saturdays, sometimes they are required to finish the job if the deadline is close.

The developed IT tool has certain benefits, which can attract micro and small businesses that are looking for a simple business intelligence solution. First of all, most of the companies use Microsoft office which already includes Excel, so they do not need to spend extra money on buying professional software. Secondly, BI software is mainly developed to large businesses and as a consequence it includes a great number of the functions which are unnecessary for small companies. Thirdly, usually all managers are proficient users of Excel, therefore, in case of employing a new worker, the company will not need a lot of time for retraining. Fourthly, excel is safer, because it

is stored on the office computer and does not send any data on the internet server. Lastly, it is easily adjustable to the company's need and situation (for example, a producing company may add a spreadsheet concerning cost of goods sold).

## 8 CONCLUSION

Normally small companies have to find opportunities that are well suited to the particular resources and competences of the firm. The conducted research was aimed at developing an IT tool for controlling cash flows in the French company Technobatilux which was the company where I used to work as an intern for three months. During my internship I was working on the project of cash flow control tool and also improved my accounting skills.

After theoretical and practical analysis of possible business intelligence solutions, the conclusion is that the main disadvantage of the existing BI systems is their price and necessity of special skills. It makes them unaffordable for micro and small companies. Moreover, purchasing a professional BI system may involve extra costs (both financial and labor). The overview of the BI market leaders and of analysts' opinions showed that professional business intelligence software is suitable only for large companies which have disposable resources. In the same time, a great number of SMEs prefer not to have BI programs and to find their substitutes that match their needs.

To obtain reliable and objective results, the research combined two methods observation and an in-depth interview. This combination allowed to learn the situation in details, participate in the activity of the creating an excel file and get an experience.

Microsoft Excel was chosen as a substitute for SARL Technibatilux. A corresponding excel file was developed during this study. It includes the revenues, invoices, purchases and profitability of each project of the company. It responds to the need of the management of controlling profitability of every single constructing project on real time basis. Besides, the thesis includes recommendations for improvements of the system.

To sum up, adjustability and adaptability of the developed IT tool may easily serve small companies as a substitute for business intelligence system. By suggested improvements every company may develop and improve the system according to their needs and goals.

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**Main interview questions:**

Q1: When is your company founded?

Q2: Why did you reorganize it?

Q3: How is the company's financial management organized?

Q4: What was the goal of developing an Excel file to control cash flows?

Q5: Why did you choose Microsoft Excel?

Q6: What were the major points to include into this IT tool?

Q7: Are you satisfied with the demo version which was developed? Were there any corrections after the trial of the demo version?

Q8: What are the corrections?

Q9: Would you like to make some further improvements into the developed system?

**Presence Leaves**

Presence Leave

Name

:

.....

Monday		____ . ____ . 2012	
Project #		8.00-12.00	14.00-18.00
1			
2			

Tuesda y		____ . ____ . 2012	
Project #		8.00-12.00	14.00-18.00
1			
2			

Wednesda y		____ . ____ . 2012	
Project #		8.00-12.00	14.00-18.00
1			
2			

Thursday		____ . ____ . 2012	
Project #		8.00-12.00	14.00-18.00
1			
2			

Friday		____ . ____ . 2012	
Project #		8.00-12.00	14.00-18.00
1			
2			

Saturday		____ . ____ . 2012	
Project #		8.00-12.00	14.00-18.00
1			
2			

Notes

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