



DEVELOPMENT OF ADVANCED TOOL FOR FINANCIAL ANALYSIS

The case of UPM-Kymmene Oyj

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ABSTRACT

The commissioner company, UPM-Kymmene Oyj (UPM), formed in 1995 in Finland, is a market leader in the bio and forest industries with long roots history. This thesis has been carried out for UPM's Credit Risk Management Europe organization (CRM) in Tampere, in particular for the Risk Assessment team.

Sound and proactive credit risk assessment is a crucial part of credit risk management in every company including UPM for whom trade credit is a part of the customer strategy. Therefore, it is important for the commissioner to have a sophisticated tool for financial analysis which guarantees high quality risk assessment and brings added value through continuous professional development of the CRM team.

The primary goal of this paper was to develop an advanced tool for financial statements analysis for credit risk assessment purposes. The research for this final thesis was conducted in close cooperation with the commissioner company and the study was carried out via extensive literature reviews on financial and management accounting, business essentials and corporate finance. UPM's objectives and guidelines for credit risk management have been closely studied to make sure that the new tool is in line with them and it meets the company's necessary requirements. The sources of financial information on the commissioner's customers available for CRM team were utilized as well. The key financial ratios have been chosen for designing the new analysis tool and guidelines for the tool application were developed.

It needs to be understood that despite the tool providing a theoretical background, basic knowledge of financial statements and the economics of organizations is required for its successful use. It is advised that financial ratios are compared against other companies within same industries and against previous years. The new tool helps to ask the right questions on an analyzed company's business condition and financial health and benefits the CRM team with better quality analysis.

This thesis includes confidential information that has been removed from the published version on the commissioner's request.

Key words: Credit Risk Ratios Analysis

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1 INTRODUCTION

1.1 Background

Today we live in a time when in many countries business confidence is falling across all sectors. Even the strongest nations are now vulnerable to declines in orders from their trading partners, increase in debts and insolvency cases. The challenging economic situation in Europe is leading to one of the most pressing managerial problems – how to secure a company from non-payment risks and maintain sustainable cash flow to keep the business running.

Non-payment risk arises from the fact that the majority of companies' sales are made on credit. Trade debtors is usually the biggest and riskiest asset on a corporate balance sheet and it requires a lot of attention. Sound and proactive credit risk assessment is a crucial part of credit risk management in each company for whom credit has become part of their customer strategy. Despite the risks involved, good credit practice plays an important role in improving customer relations and business competitiveness. Credit influences demand and enables businesses to buy, thus it is almost impossible to avoid.

Being a leader in the global market, UPM-Kymmene Oyj (UPM) offers trade credit for most of its customers. Therefore, preventing financial losses is one of the key issues for the company. UPM's objectives of the credit risk management are:

- to support the market strategy and business by identifying and eliminating credit risk elements as much as possible in the sales activity;
- to ensure that credit limits reflect the financial capacity of the customers by using effective risk analysis tools;
- to decrease the capital employed in receivables by using effective collection procedure and by controlling payment terms;
- to work towards continuous improvement in the credit risk management area. (UPM 2012)

At the end of the year 2011 UPM conducted an Employee Engagement Survey to find out the areas for development among UPM teams to ensure continuous growth. The results revealed that it is important for the Credit Risk Management team (CRM) to

strengthen the team members' competence in financial analysis and to improve the quality of credit risk assessment.

1.2 Objectives

The primary objective of this thesis is the development of a new tool for financial analysis. Currently the CRM team is using Altman Z-score for assessing customers' financial health and likelihood of bankruptcy based on balance sheets and income statements data. The tool was originally created in 1968 by an assistant professor of finance at New York University, Mr. Edward I Altman. It was mainly for assessing the business of manufacturing companies. Nowadays challenging market and economic conditions create a need for more in-depth financial analysis which requires more complex tools. Therefore, using Altman Z-score alone is not enough anymore.

Together with UPM, the following requirements were set for the new tool which is to be developed in this project:

- excel format;
- easy to use;
- combined with currently used Altman Z-score;
- in-depth analysis of financial statements from different angles: long- and short-term liquidity, profitability and assets management;
- dynamics of the business performance to be shown in both figures and charts/graphs to give a good visual presentation of the analysis results;
- the tool should provide a theoretical background on financial ratios used and how to read and understand the results so that no additional training and teaching would be needed even for newcomers and trainees.

The new tool is to fulfil UPM's objectives on credit risk management, and to support the team members in improving their professional skills in the field of financial analysis.

1.3 Research method

This thesis project is a research with constructive approach. The very essence of the applied science, as property related research, lies in preparing theoretically grounded solutions for practical purposes. The constructive research means problem solving in a real-life organizational setting through the construction of a management system. A constructive method is a solution-oriented normative method where target-oriented and innovative step-by-step developments of a solution are combined, and which empirical testing of the solution is done and utility areas are analyzed. (Linholm 2008)

Constructive research approach was originally developed in the field of management accounting in the 1980s in order to assist management accounting academics in taking a more active role in improving the existing practices and gaining a deeper understanding of the actual practices in organizations. There are seven crucial steps in the constructive research approach:

- to find a practically relevant problem, which also has research potential;
 - to examine the potential for long-term research co-operation with the target organisation;
 - to obtain a general and comprehensive understanding of the topic;
 - to innovate and construct a theoretically grounded solution idea;
 - to implement the solution and test whether it works in practice;
 - to examine the scope of the solution's applicability; and
 - to show the theoretical connections and the research contribution of the solution.
- (Linholm 2008)

The research with constructive approach was chosen for this thesis as the objective of the project is to create a practically applicable tool for financial analysis based on studied literature on the field. The research needs to provide a practical solution for strengthening the quality of credit risk assessment performed by the CRM team and to ensure continued professional development of the team members. The author's personal observation and experience in the field of financial analysis has supported this project.

1.4 Literature

The study was carried out via extensive literature reviews obtained from secondary data sources. Books, journals and e-resources on financial and management accounting, business essentials and corporate finance were studied together with up-to-date practices in financial analysis, techniques and advice from professionals. UPM's objectives and guidelines for credit risk management have been closely reviewed to make sure that the new tool is in line with them and it meets necessary requirements. The sources of financial information on the commissioner's customers available for CRM team were also utilized.

1.5 Thesis structure

This thesis report consists of 7 main chapters. Introduction chapter gives an overview of the problem background, objectives of the project, applied research methods and literature sources. The second chapter introduces the case company UPM-Kymmene Oyj, its history, areas of business and key performance figures. Chapter 3 Credit risk management gives a close overview on what credit risk management is in theory and how it is implemented within the case company. In addition it provides some information about UPM's CRM team for which this research was carried out. Chapter 4 contains details on credit risk assessment processes established at the commissioner company from risk evaluation to limit establishment. It also introduces sources of information utilized by CRM to perform their daily tasks. The following chapter 5 contains theoretical background for financial statements and three types of analysis: trend, vertical and ratio. Chapter 6 introduces the new advanced tool for financial analysis tailored for CRM, as well as description of testing process and developed guidelines for the tool application. The project's summary, findings and recommendations are included in the conclusive seventh chapter of this paper.

2 THE CASE COMPANY

2.1 UPM-Kymmene Oyj

UPM-Kymmene Oyj (UPM) was established in autumn 1995 when Kymmene Corporation, Repola Ltd and its subsidiary United Paper Mills Ltd announced their merger. The new company, UPM-Kymmene, officially started its operations on 1 May 1996.

UPM has a long tradition in the Finnish forest industry. The group's first mechanical pulp mill, paper mills and sawmills started operations in the early 1870s. Pulp production began in the 1880s and paper converting in the 1920s with plywood production starting the following decade.

The present group comprises some 100 production facilities, which were originally functioning as independent companies. Among others, the following companies have been merged into the group: Kymi, United Paper Mills, Kaukas, Kajaani, Schauman, Rosenlew, Raf. Haarla and Rauma-Repola's forest industry operations. The oldest of UPM's mills, Papeteries de Docelles, is located in north-eastern France. The mill was already making quality handmade paper at the end of the 15th century. The first paper machine for this mill was acquired in the 1830s. (UPM 2012)

By 2013 UPM has become a global player in the bio and forest industries with around 22,000 people employed worldwide and with production plants in 17 countries. UPM is the first forest industry company to define itself as a company which combines bioeconomy and forest industry into one. It invests over 1 billion euros in renewable energy and it is the world's biggest user of recovered paper in printing papers. The company's headquarters are situated in Helsinki, Finland and UPM's shares are listed on the NASDAQ OMX Helsinki stock exchange.

UPM's business performance of the last three years of operations is presented in the table 1. It includes the key figures obtained from the company's financial statements from years 2010 – 2012.

TABLE 1. Key financial figures 2010 – 2012, UPM-Kymmene Oyj, Annual report 2012

	2012	2011	2010
Sales, EURm	10,438	10,068	8,924
Operating profit, EURm	-1,350	459	755
excl. special items, EURm	530	682	731
Profit (loss) before tax, EURm	-1,406	417	635
Earnings per share, EUR	-2.39	0.88	1.08
excl. special items, EUR	0.70	0.93	0.99
Operating cash flow per share, EUR	1.93	1.99	1.89
Return on equity, %	neg.	6.3	8.2
excl. special items, %	5.0	6.7	7.5
Dividend per share (2012: Board's proposal), EUR	0.60	0.60	0.55
Shareholders' equity per share at end of period, EUR	11.23	14.22	13.64
Gearing ratio at end of period, %	51	48	46
Capital expenditure, EURm	352	1,179	257

2.2 Business areas

The main business areas of UPM are Energy, Pulp, Forest and Timber, Paper, Label and Plywood.

The Energy business area's generation capacity in Finland consists of hydropower, nuclear power, condensing power and wind power. The total electrical generation capacity is 1,721 MW. UPM owns nine hydropower plants in Finland, is shareholding 44% of the associated energy company Pohjolan Voima Oy and 19% of Kemijoki Oy's hydropower. (UPM 2012)

The pulp business area operates as both a seller and a buyer of pulp. UPM's annual chemical pulp production capacity is 3,2 million tonnes from the four modern and efficient pulp mills based in Uruguay and Finland. In 2012 the company sold approximately 3,1 million tonnes of pulp, 1,6 million tonnes of which were sold to external customers. (UPM 2012)

The Forest and Timber business area ensures supply of wood and biomass to all UPM businesses and also to external customers. The business area also offers forest services for private forest owners and manages forests owned by UPM. The company annually

sources approximately 25 million cubic metres of wood and biomass globally, produces 2,3 million cubic metres of sawn timber products and 0,4 million cubic metres of wood-based products for home interiors, garden and industrial uses. In 2012 sales of Forest and Timber business area increased by 2% from 1,651 MEUR in 2011 to 1,691 MEUR in 2012. (UPM 2012)

UPM's Paper business area produces magazine paper, newsprint and fine and speciality papers for a wide range of end-users. The company's annual paper production capacity is 12,2 million tonnes, manufactured in 21 modern paper mills in Finland, Germany, the UK, France, Austria, China and the USA. Paper sales in 2012 declined due to fierce competition and overcapacity on the market. (UPM 2012)

The Label business area, UPM Raflatac, manufactures self-adhesive label materials for product and information labelling for both high volume and specialised end-use applications. 15 factories and slitting terminals cover all main markets worldwide. Label sales increased by 5% in 2012 compared to 2011 and operating profit improved by 13%. (UPM 2012)

UPM's Plywood business area produces a composite product made from renewable raw materials with unique strength-to-weight properties. It is used for building and construction as well as in a number of industrial applications. UPM's annual plywood and veneer production capacity is one million cubic metres. Plywood sales and operating profit increased by 3% in 2012. (UPM 2012)

3 CREDIT RISK MANAGEMENT

3.1 Credit risk management in theory

According to Capgemini, one of the world's largest management consulting, outsourcing and professional services companies, credit risk is “*a risk of loss due to a party in an agreement not meeting its contractual financial obligations in a timely manner*” (Agarwal 2011). Thus, credit risk management is a necessary tool that a company should use each time before starting to conduct business with other companies/buyers on credit terms.

The granting of trade credit is a powerful selling aid, and is a fundamental foundation upon which trading relationships are built. Both seller and buyer gain advantage from credit facilities, but the risk of slow or non-payment is borne by the seller – risk in the form of non-payment, and cost in the form of the interest expense incurred from the date of the sale to receipt of the funds. (Bullivant)

Looking at credit risk on an enterprise level, a company holds credit risks in accounts receivables which are “one of a corporation's largest and most vulnerable assets. It is the second most liquid asset after cash and represents a significant investment of working capital” (Trade Credit risk 2011). Credit risk management plays a crucial role in creating an understanding on when, where and how much credit risk is incurred by a company and how to protect an organization from losing its assets. According to ACE insurance company and the author's personal observation, companies without well-established credit risk management suffer from financial losses a lot more than those who practice credit risk assessment in their daily business operations.

The management of UPM realized a long time ago the importance of credit risk assessment for the company and made a decision to build a credit risk management organization within UPM. Its structure and roles are presented further in this chapter. Chapter 4 will introduce credit risk assessment processes established at the commissioner company.

3.2 Credit risk management at UPM

3.2.1 The organization structure

Confidential. Not published.

3.2.2 Credit risk management Europe

Confidential. Not published.

4 UPM CREDIT RISK ASSESSMENT PROCESSES

4.1 Risk evaluation

Confidential. Not published.

4.2 Limit establishment

Confidential. Not published.

4.3 Information sources for credit risk assessment

For credit risk assessment purposes Risk assessment team uses the following sources of information:

- Dun & Bradstreet or other providers of financial information.
- Customer's financial statements (Balance sheet, Profit & Loss statement, Cash Flow statement).
- Customer visit reports by UPM CRM or sales personnel.
- Information provided by UPM local sales managers.
- Daily news on country specific market and economic overview provided by credit insurance companies or brokers.
- Customers' internet web-pages.

The two main information sources on a customer's financial position are presented further in this chapter.

4.3.1 Dun & Bradstreet

Dun & Bradstreet (D&B) is the leading source of business information on more than 207 million companies in 220 countries which is updated on a daily basis. UPM has been working with D&B for many years and their reports are widely used by CRM team

members. The most frequently ordered reports are comprehensive and business information reports. They have clear and understandable layout and as a rule contain the following information on a company:

- Parent details, principals and bankers
- Public record information, history, operations
- Financial information:
 - Trend of turnover & pre-tax profit
 - Trend of key Balance sheet items (Net Worth, Total Assets, Working Capital)
- Ratios:
 - Current ratio
 - Solvency ratio
 - Fixed assets/Net worth (%)
 - Current liabilities/Net worth (%)
 - Asset turnover (%)
 - Sales/Net working capital
 - Assets/Sales (%)
 - Net profit margin (%)
 - Shareholders return (%)
 - Return on Assets (%)
 - Sales/employees
 - Profit/Employees
 - Balance sheets and Profit & Loss statements
 - Risk assessment and credit limit recommendation

Other reports available for CRM purposes are for example country risk reports and global family trees. The amount of information included in D&B reports varies depending on which country an analysed company is located in due to differences in local legislation on disclosing financial and other information.

4.3.2 Customers financial statements

As a general practise for analysing UPM's customer's business performance, financial health and for assessing credit risks, the risk assessment team conducts financial

statements analysis. As it was mentioned earlier, D&B business reports don't always contain financial data, thus, thorough analysis of financial statements provided by UPM's customers is of a high importance for sound credit risk assessment.

Many organizations such as banks, financial institutions and suppliers offering trade credits, widely use specific analysis tools to closely review their customers' financial statements for risk evaluation and decision-making purposes. UPM is not an exception here and such tools play an important role for the risk assessment team.

Nowadays there are many different types of financial analysis tools available in the financial field. For example Balanced scorecard, Benchmarking, Altman Z-score are all based on financial statements data. The last one is currently used by UPM risk assessment team but as mentioned earlier challenging market and economic conditions plus increasing risks of business failures create a need for more in-depth financial analysis, which requires more complex tools than Altman Z-score. This project is meant to design such a tool which would enable the commissioner company's CRM team to conduct more in-debt analysis of customers' businesses and assess potential credit risks. The following chapter will provide details on financial statements, what they actually are and what analysis methods can and should be applied when assessing companies financial health and business condition. The chapter also includes a description of the development process of the new analysis tool for UPM risk assessment team.

5 FINANCIAL STATEMENTS' ANALYSIS

5.1 Financial statements

Financial statements are a collection of reports about an organization's financial results and condition. They are useful for the following reasons:

- to determine the ability of a business to generate cash, and the sources and uses of that cash;
- to determine whether a business has the capability to pay back its debts;
- to track financial results on a trend line to spot any looming profitability issues;
- to derive financial ratios from the statements that can indicate the condition of the business;
- to investigate the details of certain business transactions, as outlined in the disclosures that accompany the statements. (Accounting tools 2013).

Financial statements include Balance sheet, Income statement, Statement of cash flows and supplementary notes. Balance sheet (figure 4) always consists of two parts: assets, and liabilities and shareholders equity, and shows a company's position on a certain date of the year. Assets include everything that a company owns, uses for business operations and can convert into cash within a short or long period of time. Long-term or fixed assets include for example property, plants and equipment. Short-term or current assets mainly consist of cash, receivables and inventories.

Liabilities and shareholders equity are the sources for financing a company's assets and they consist of shareholders equity and long-term and short-term (current) liabilities. Current liabilities are the debts and obligations that a company owes that are coming due within a fiscal year. They primarily include short-term bank loans, accounts payable and other current liabilities. Long-term debts are those to be paid after 12 months or longer and as a rule mainly include long-term bank loans.

Finally, shareholders equity is a company's own capital plus profits or losses retained starting from the first day of business activity.

BALANCE SHEET	
ASSETS	
<u>Current Assets</u>	
Cash	\$ 710,000
Receivables	2,379,000
Inventories	3,361,000
Prepaid Expenses	43,000
	<hr/>
Total Current Assets	6,493,000
Other Investments	5,111,000
Property, Buildings and Equipment	5,227,000
	<hr/>
TOTAL ASSETS	16,831,000
	<hr/> <hr/>
LIABILITIES AND PATRON EQUITIES	
<u>Current Liabilities</u>	
Short-Term Notes Payable	1,800,000
Current Portion of Long-Term Debt	367,000
Payables and Accruals	1,775,000
	<hr/>
Total Current Liabilities	3,942,000
Long-Term Debt	1,082,000
	<hr/>
TOTAL LIABILITIES	5,024,000
TOTAL PATRON EQUITIES	11,807,000
TOTAL LIABILITIES AND PATRON EQUITIES	16,831,000
	<hr/> <hr/>

FIGURE 4. Balance sheet (Bookkeeping basics)

Income statement or profit and loss statement is a financial report that summarizes a company's revenues, costs and expenses and shows net profit or loss results over a specific time period. Usually a month, quarter or year. The format of an income statement depends on how complicated a company's business activities are. However, most organizations will have in their profit and loss statement such items as sales revenues, cost of sales, operating and administrative expenses, financial income and expenses, income tax expenses and profit or loss as a bottom line. An example of multiple step income statement is presented in figure 5.

ABC Company	
Income Statement	
For the Year Ended December 31, 2009	
Revenue:	
Sales	\$ 1,480,000
Interest revenue	35,000
Dividend revenue	15,000
Infrequent or unusual gains	9,000
Total revenue	1,539,000
Expenses:	
Cost of goods sold	600,000
Selling	100,000
Administrative	220,000
Interest expense	15,000
Infrequent or unusual losses	4,000
Total expenses	939,000
Income before income taxes	600,000
Income taxes	208,000
Income from continuing operations	392,000
Discontinue operations:	
Income from operations, less income tax of \$24,800	54,000
Loss on disposal, less income tax of \$41,000	(90,000)
Total discontinued operations	(36,000)
Income before extraordinary item	356,000
Extraordinary item, less income tax of \$23,000	(45,000)
Net income	\$ 311,000

FIGURE 5. Multiple step income statement of ABC Company (Docstoc 2009)

Income statements show companies profitability but they don't show cash receipts or cash paid out. This information is always recorded in cash flow statements which “provide aggregate data regarding all cash inflows a company receives from both its ongoing operations and external investment sources, as well as all cash outflows that pay for business activities and investments during a given quarter” (Investopedia 2013).

Cash flow from operating activities mainly includes net income for the period, depreciation and amortization, decrease/increase in trade payables and receivables and other relevant expenses/income. Cash flow from investing activities includes received interests from such activities, expenses on purchasing of property, plant and equipment and income from sale of property, plant and equipment. And finally, cash flow from financing activities includes dividend payments, purchase of a company's own shares and repayments of shareholders loans etc. An example of a cash flow statement is shown in figure 6.

	Year ended 30 April 2011 £'000	Year ended 30 April 2010 £'000
Cash flows from operating activities		
Profit after taxation	10,180	11,577
Depreciation	2,942	2,916
Excess of pension contributions over service cost	(1,182)	(200)
Net finance costs	228	477
Corporation tax expense	5,538	6,174
Increase/(decrease) in trade and other payables	6,127	(4,556)
(Increase)/decrease in trade and other receivables	(10,301)	9,974
Cash generated from operations	13,532	26,362
Interest paid	(213)	(551)
Corporation tax paid	(6,081)	(5,652)
Net cash from operating activities	7,238	20,159
Cash flows from investing activities		
Interest received	206	74
Proceeds from sale of property, plant and equipment	410	343
Acquisition of subsidiary undertakings	-	(2,537)
Purchases of property, plant and equipment	(1,820)	(825)
Net cash from investing activities	(1,204)	(2,945)
Cash flows from financing activities		
Payment of finance lease liabilities	(647)	(779)
Shareholder loan repayments	(1,247)	(43)
Dividends paid	(3,500)	(10,520)
Purchase of own shares	(1,243)	-
Net cash used in financing activities	(6,637)	(11,342)
Net (decrease)/increase in cash and cash equivalents	(603)	5,872
Cash and cash equivalents at beginning of year	24,771	18,508
Effect of exchange fluctuations on cash held	(286)	391
Cash and cash equivalents at end of year	23,882	24,771

FIGURE 6. Cash flow statement (Turner & Townsend 2011)

5.2 Analysis

There are several methods for analyzing financial statements: horizontal (trend analysis), vertical and ratios. Horizontal analysis is the comparison of financial information over a series of reporting periods, while vertical analysis is the proportional analysis of financial statements, where each line item on a financial statement is listed as a percentage of another item (Accounting tools 2013). Ratio analysis includes calculation of different ratios which are then compared to ratios from previous years or other companies and industries.

Due to differences in the quality of financial information available to the UPM risk assessment team the financial statements analysis methods can't always be utilized to their full extent. For example, trend analysis can't be applied when financial data from previous years is missing or if the format of provided financial statements is rather short as some of the ratios simply can't be calculated and assessed due to the lack of information in the statements.

After the quality and formats of financial statements provided by UPM's customers together with financial information included in D&B reports have been studied, the analysis methods and number of ratios have been limited to only those that can always be applied. They are all described further in this chapter and to be included in the new analysis tool.

5.2.1 Trend (horizontal) analysis

A horizontal financial statement analysis compares current financial statements to a previous years financial information. Companies often conduct this analysis by putting several years of financial statements in a side-by-side comparison format. This enables them to review the same period over several years and to determine if revenues, expenses or assets/liabilities have increased, decreased or stayed the same. Companies can also use a horizontal analysis to compare changes in currency amounts or a percentage change when comparing financial statements. (Vitez)

5.2.2 Vertical analysis

Vertical financial statement analysis is conducted by using common size financial statements. A common size financial statement shows each item on a financial statement as a percentage figure for each statement line item. A vertical analysis gives a different option for reviewing financial information. The percentage figure represents how individual line-item amounts compare to the aggregate total of the financial statements. (Vitez)

5.2.3 Ratio analysis

A traditional financial statement analysis tool is financial ratios. These ratios take information from a company's financial statements and calculate economic indicators for comparison to another company or the industry standard. Financial ratios include liquidity, asset turnover, financial leverage and profitability calculations. Liquidity ratios calculate a company's ability to meet short-term financial obligations. Asset turnover ratios indicate how well the company uses its assets to generate profits. Financial leverage ratios calculate the long-term solvency of a company. Profitability ratios help companies determine how much profit they are generating from the sale of various goods or services. (Vitez)

Liquidity (or short-term solvency)

Short-term solvency ratios as a group are intended to provide information about a firm's liquidity and these ratios are sometime called *liquidity* measures. The primary concern is a firm's ability to pay its bills over the short run without undue stress (Ross, Westerfield & Jordan 2008). Three best known and frequently used liquidity ratios are current ratio, quick ratio and working capital. Since UPM is a short-term creditor, assessment of short-term solvency of the customers is essential for the company. The Risk assessment team always has to consider these three main liquidity measures and take the necessary actions if negative trend occurs.

Current ratio is a financial ratio used for measuring a company's ability to pay current debts out of current assets. If this ratio is less than 1, it means that a company would be unable to pay its obligations on due dates and the risk of overdues is higher than average. UPM CRM needs to consider this ratio when maintaining credit limits.

$$\text{Current ratio} = \frac{\text{Current _ Assets}}{\text{Current _ liabilities}}$$

Quick ratio is another indicator of a company's liquidity. The quick ratio measures a company's ability to meet its short-term obligations with its most liquid assets (Investopedia 2012). In other words, would a company fully cover its current liabilities if they came due immediately? The higher the quick ratio, the better the position of the

company. For the risk assessment team this ratio is less important than current ratio but it is advised to look at it to create a better picture of an analysed company's liquidity.

$$\text{Quick ratio} = \frac{\text{Current_assets} - \text{Inventory}}{\text{Current_liabilities}}$$

Working capital is a common measurement of a company's liquidity, efficiency, and overall health. Positive working capital generally indicates that a company is able to pay off its short-term liabilities almost immediately. In general, companies that have a lot of working capital will be more successful since they can expand and improve their operations. Companies with negative working capital may lack the funds necessary for growth. (Ready ratios 2012)

This ratio is one of the most important for UPM CRM and is always measured when assessing credit risks. When a negative trend in working capital takes place, it is always a sign that the risk of payment delays is high and UPM can expect to face slowed-down receivables collection from such buyers. The ratio also alerts the risk assessment team and indicates that a stricter approach is needed. Credit limits and payment terms should then be reconsidered.

$$\text{Working capital} = \text{current assets} - \text{current liabilities}$$

Days payable outstanding is an accounting liquidity metric that evaluates how fast a company pays off its creditors (suppliers). The ratio shows how many days it takes in a given period (typically 1 year) for a company to pay its average accounts payable.

Payment requirements usually vary from supplier to supplier, depending on its size and financial capabilities. A high number of days means there is a relatively short time between purchase of goods and services and payment for them. Conversely, a lower ratio usually signifies that a company is slow in paying its suppliers. But a high days payable outstanding ratio is not always in the best interest of a company. Many companies extend the period of credit turnover getting extra liquidity. (Ready ratios 2012)

For the credit risk assessment purposes this ratio can be compared to a payment term that UPM offers to a particular buyer. For example, if the commissioner company offers 30 days net from date of invoice payment term but the customer's days payable outstanding ratio is 65 days, it means that on average the company pays its bills within 65 days and payment delays towards UPM are most likely to take place. The ratio's trend is advised to be watched and if negative, the necessary conclusions are to be made.

$$\text{Days payable outstanding} = \frac{\text{Accounts payable}}{\text{Cost of Sales}} \times 365$$

Asset management

Inventory turnover measures the number of times a company sells its average level of inventory during a year. A fast turnover indicates ease in selling inventory; a low turnover indicates difficulty. It is important to remember that inventory turnover varies widely with the nature of the business and it is recommended to evaluate the turnover, by comparing the ratio over time. (Harrison & Horngren 2008)

The risk assessment team should consider this ratio to evaluate effectiveness of customers' inventory management. If there are any difficulties in selling the goods, inventories will pile up and it can lead to increased costs for holding inventories, decrease in profitability and decrease in cash flow from operations.

For UPM CRM purposes the inventory turnover ratio is calculated in days to make it comparable with day's sales in receivables ratio. This way of calculation has been specifically requested by the team since it is important to understand how many days it takes for a particular buyer of UPM's to sell its inventories and how soon the money can be collected.

$$\text{Inventory turnover in days} = 365 / \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Day's sales in receivables ratio shows how many days' sales remain in Accounts receivable turnover measures the ability to collect cash from customers. (Harrison & Horngren 2008)

Trend in day's sales in receivables ratio is important to follow up since it will tell how fast and smooth the cash from a company's main business operations is coming in. If collection slows down, it can affect an organization's payment behaviour towards its creditors and to UPM in particular. This ratio will provide additional information to CRM on the quality of a buyer's asset management and will enable the risk assessment specialists to be proactive in their actions and decision-making.

$$\text{Days sales in receivables} = \frac{\text{Average _ receivables}}{\text{Net _ sales}} \times 365$$

The risk assessment team should carefully watch trends between these three ratios: days payable outstanding, inventory turnover and day's sales in receivables. Sales, receivables and inventory as a rule move and change together. Increased sales lead to higher receivables and require more inventories in order to meet demand. Strange movements among these items may indicate that there is something wrong with the business and it requires extra attention from CRM specialists.

Financial leverage (long-term solvency)

Financial leverage ratios provide an indication of the long-term solvency of the firm. Unlike liquidity ratios that are concerned with short-term assets and liabilities, financial leverage ratios measure the extent to which the firm is using long term debt (Net MBA). These ratios include debt and debt-to-equity ratios, and equity multiplier. For UPM CRM purposes, it was decided to concentrate only on debt and debt-to-equity ratios.

Debt ratio tells the proportion of assets financed with debt. A debt ratio of 1 reveals that debt has financed all the assets. A debt ratio of 0,5 means that debt finances half the assets. The higher the debt ratio, the greater the pressure to pay interest and principal. The lower the ratio, the lower the risk. (Harrison & Horngren 2008)

$$\text{Debt ratio} = \frac{\text{Current _ liabilities}}{\text{Current _ assets}}$$

Debt-to-equity ratio is a financial ratio indicating the relative proportion of an entity's equity and debt used to finance an entity's assets. Debt-to-equity ratio is the key financial ratio and is used as a standard for judging a company's financial standing. It is also a measurement of a company's ability to repay its obligations. When examining the health of a company, it is critical to pay attention to the debt/equity ratio. If the ratio is increasing, the company is being financed by creditors rather than from its own financial sources which may be a dangerous trend. Lenders and investors usually prefer low debt-to-equity ratios because their interests are better protected in the event of a business decline. Thus, companies with high debt-to-equity ratios may not be able to attract additional lending capital. (Ready ratios 2012)

Debt and debt-to-equity are by far two of the most important ratios for credit risk assessment purposes, thus they cannot be forgotten by CRM team. They must always be considered when analysing UPM's customers and giving credit limit recommendations.

$$\text{Debt-to-equity ratio} = \frac{\text{Total _ liabilities}}{\text{Total _ equity}}$$

Profitability ratios

Net profit margin is one of the most widely used profitability measures. It indicates how efficient a company is and how well it is run. For CRM purposes, this ratio is useful when it is compared over time and with profit margins of other companies in the same sector. UPM has very well-defined business segments that the company's customers belong to so it is relatively easy to benchmark. In general, low net profit margin means that in case of even small changes in operating expenses or decline in sales revenue, a profitable business can easily turn to a loss-maker.

$$\text{Net profit margin} = \frac{\text{Net _ profit}}{\text{Sales _ revenue}} \times 100\%$$

Return on assets is a financial ratio that shows the percentage of profit that a company earns in relation to its overall resources (total assets). Return on assets is a key profitability ratio which measures the amount of profit made by a company per dollar of its assets. It shows the company's ability to generate profits before leverage, rather than by using leverage. (Ready ratios 2012)

Return on assets is not a priority ratio for UPM CRM but it is used in order to create a complete picture of customers' overall profitability.

$$\text{Return on assets} = \frac{\text{Net_income}}{\text{Total_assets}}$$

Return on equity is the amount of net income returned as a percentage of shareholders equity. It reveals how much profit a company earned in comparison to the total amount of shareholder equity found on the balance sheet. Return on equity is one of the most important financial ratios and profitability metrics. It is often said to be the ultimate ratio or the 'mother of all ratios' that can be obtained from a company's financial statement. It measures how profitable a company is for the owner of the investment, and how profitably a company employs its equity. (Ready ratios 2012)

$$\text{Return on equity} = \frac{\text{Net_income}}{\text{Total_equity}}$$

Return on equity as well as return on assets is used by CRM for overall profitability analysis of customers. For better quality assessment the ratios are to be compared against previous years and other companies within same industry. As previously mentioned, UPM's business segments are well-defined so CRM specialists can benchmark customers under their responsibility areas operating within same industries/markets/countries.

All analysis methods and ratios described above are to be included in the new analysis tool tailored for UPM CRM. The following chapter will provide details on how the tool was designed, and how analysis techniques together with UPM's set requirements have been implemented.

6 TOOL FOR FINANCIAL ANALYSIS

6.1 Design

Confidential. Not published.

6.2 Testing

Confidential. Not published.

6.3 Guidelines

Confidential. Not published.

7 CONCLUSION

Sound and proactive risk assessment is of extreme importance for a company like UPM-Kymmene Oyj who widely offers trade credit for many of its customers. Good credit practice has an important role in improving customer relations and in surviving tough competition in the paper and forest markets.

The main objective of this thesis project was to create a practically applicable tool for financial analysis and a solution-oriented method of research was needed. The author demonstrated a constructive approach to the work which was meant to provide practical solution for improving the quality of credit risk assessment performed by the CRM team and ensure the continuous professional development of the team members. The research methods main steps mentioned in chapter 1.3 of this thesis were necessary for solving practically relevant problems and they have been successfully fulfilled.

Secondary data sources were utilized to carry out the study. Literature on financial and management accounting, business essentials and corporate finance was thoroughly reviewed. Also the sources of financial information on the customers available for CRM team together with the author's personal observation and experience in the field of financial analysis have supported the research.

The commissioner company, UPM-Kymmene Oyj established in 1995 in Finland, is a global player in the bio and forest industries with a long history. The company's credit risk management is a global organization with Group CRM located in Helsinki and three CRM continental teams in Europe, North America and APAC. This thesis deals with CRM Europe Risk assessment team located in Tampere, Finland. The team executes risk reduction/loss preventive measures, conducts UPM Credit risk management guidelines and credit insurance policy conditions, performs customer risk assessment, process insurance and internal limit applications and manages credit blocked orders. The serviced market areas are Europe, Russia, Africa, Middle East and Latin America.

Credit risk is a risk of loss due to a buyer not meeting its contractual financial obligations in a timely manner. Non-payment risk arises from the fact that most of a

company's sales are made on credit terms. Trade debtors is usually the biggest and riskiest asset on a corporate balance sheet and requires a lot of attention. UPM defines the most important conditions to be considered when assessing credit risk and preventing losses. They are for example a buyer's willingness to pay obligations, ability to pay when a debt is due and generate positive cash flow, a buyer's equity and net worth and access to additional financial resources.

Due to the importance of sound credit risk assessment, the company requires a high quality performance from the CRM team. UPM set a number of rules, guidelines and defined processes for how risk assessment needs to be implemented in the company. An Employee Engagement Survey conducted by UPM in 2011 revealed challenges in CRM's team performance. Main goals for development were set and one of them was to strengthen quality of credit risk assessment.

The primary objective of this final thesis was the development of a sophisticated tool for financial analysis which was meant to fulfil UPM's goals and also to help the CRM team members to strengthen their professional skills in the field of financial analysis. In the past mainly Altman Z-score was used for assessing customer's financial health and a likelihood of bankruptcy, but nowadays challenging situation in the market and global economy as a whole requires a deeper approach when analysing credit risks.

The new analysis tool tailor-made for CRM team purposes fulfils all the requirements proposed by the author and has been accepted by the commissioner company. It was tested in practise and improved the quality of credit risk assessment performed by CRM and is a valuable asset. Training on how to use the new tool as well as on developed guidelines for the tool application was provided to the team by the author together with a CRM Senior Specialist.

Reviewing theories and up-to-date practises in financial statement analysis, deciding on the set of ratios to be used and designing the tool layout were the main challenges of this project. The new analysis tool is now implemented and in full use by the commissioner company UPM-Kymmene Oyj, CRM Europe Risk assessment team. It created an added value to the performed credit risk assessment and helped to improve the quality of financial analysis.

However, it needs to be considered that despite the presence of theoretical background in the tool, basic knowledge of financial statements and economics of an organization is required for its successful use. It is advised that financial ratios are compared against other companies within same industries and against previous years. The new tool helps to ask the right questions of an analysed company's business condition and financial health and provides the CRM team a better quality analysis.

REFERENCES

Berk, J., DeMarzo, P. & Harford, J. 2012. 2nd edition. Fundamentals of corporate finance. Essex: Pearson Education.

Bhimani, A., Horngren, C., Datar, S. & Foster, G. 2008. 4th edition. Management and cost accounting. Essex: Pearson Education.

Bragg, S. 2007. 2nd edition. Financial analysis: a controller's guide. New Jersey: Wiley.

Buffet, W. & Clark, D. 2011. Warrant Buffet and the interpretation of financial statements. The search for the company with a durable competitive advantage. London: Simon & Schuster UK Ltd.

Ebert, R. & Griffin, R. 2009. 7th edition. Business essentials. New Jersey: Pearson education.

Harrison, W. & Horngren, C. 2008. 7th edition. Financial accounting. New Jersey: Pearson Education.

Horngren, C., Sundem, G. & Stratton, W. 2002. 12th edition. Introduction to management accounting. New Jersey: Pearson Education.

Marr, B. 2012. Key performance indicators: the 75 measures every manager needs to know. Harlow: Pearson Education.

Ross, S., Westerfield, R. & Jorda, B. 2008. 8th edition. Corporate finance fundamentals. New York: McGraw-Hill/Irwin.

Saunders, M., Lewis, P. & Thornhill, A. 2009. 5th edition. Research methods for business students. Essex: Pearson Education.

Internet sources

Accounting tools. 2013. Read 15.10.2012.

<http://www.accountingtools.com/definition-financial-statemen>

Agarwal, A. 2011. Credit risk management: trends and opportunities. Read 02.10.2012.

http://www.finextra.com/Finextra-downloads/featuredocs/Credit_Risk_Management_Trends_and_Opportunities.pdf

Bookkeeping basics. Balance sheet. Read 09.11.2012.

<http://www.bookkeeping-basics.net/balance-sheet.html>

Bullivant, G. Fecma. Federation of European Credit Management Associations. Credit policy. 05.10.2012.

<http://www.fecma.eu/Documents/FECMA%20Credit%20Policy%20chapt%20%201.pdf>

Docstoc. 2009. Sample Multiple Step Income Statement ABC Company Income Statement. Read 17.02.2013.

<http://www.docstoc.com/docs/3611092/Sample-Multiple-Step-Income-Statement-ABC-Company-Income-Statement-For>

Fecma. Federation of European Credit Management Associations. Risk assessment in trade (commercial) credit. Read 07.01.2013.

http://www.fecma.eu/Documents/FECMA%20Risk%20assessment%20chapt%20%20%20%20_corr%20%20Josef_.pdf

Financial statements school. 2008. Accounts payable turnover ratios. Read 08.01.2013.

<http://financialstatementschool.com/2008/07/29/accounts-payable-turnover-ratios.aspx>

Investopedia. 2013. Cash flow statement. Read 21.01.2013.

<http://www.investopedia.com/terms/c/cashflowstatement.asp>

Investopedia. 2012. Quick ratio. Read 21.01.2013.

<http://www.investopedia.com/terms/q/quickratio.asp#axzz28ydptjD>

Linholm, A.-L. 2008. Constructive study on creating core business relevant CREM strategy and performance measures. Read 19.11.2012.

<http://lib.tkk.fi/Diss/2008/isbn9789512293605/article5.pdf>

Net MBA. Business knowledge center. Financial ratios. Read 25.10.2012.

<http://www.netmba.com/finance/financial/ratios/>

Ready ratios. 2012. Accounts payable turnover ratio. Read 08.01.2013.

http://www.readyratios.com/reference/asset/accounts_payable_turnover_ratio.html

Ready ratios. 2012. Debt to equity ratio. Read 10.01.2013.

http://www.readyratios.com/reference/debt/debt_to_equity_ratio.html

Ready ratios. 2012. Return on assets. Read 10.01.2013.

http://www.readyratios.com/reference/profitability/return_on_assets.html

Ready ratios. 2012. Return on equity. Read 10.01.2013.

http://www.readyratios.com/reference/profitability/return_on_equity.html

Ready ratios. 2012. Working capital. Read 11.01.2013.

http://www.readyratios.com/reference/liquidity/working_capital.html

Turner & Townsend. 2011. Financials results. Consolidated cash flow statement. Read 09.11.2012.

<http://www.turnerandt Townsend.com/annualreview/balance/financialresults04.htm>

Vitez O. Small business. Financial statements analysis tools. Read 27.09.2012.

<http://smallbusiness.chron.com/financial-statement-analysis-tools-3776.html>

Other sources

UPM-Kymmene Oyj. 2012. Annual Report 2012.

UPM-Kymmene Oyj, Intranet (several), unpublished.

UPM-Kymmene Oyj, internal (several), unpublished.

UPM-Kymmene Oy. 2013. Credit risk management guidelines, CRM Europe, unpublished.