FINANCIAL ANALYSIS OF THE EFFECTS OF CRM SYSTEM IMPLEMENTATION IN A CZECH COMPANY MEGA, A. S.

ABSTRACT: Manuscript is focused on the analysis of the financial outcomes of the implementation of a CRM system in a Czech company MEGA, a. s. The paper briefly informs about the history of MEGA, a. s. and their process of implementation of the CRM system. Based on this knowledge further analysis of financial indicators have been made. Calculations have been made based on company financial data. The conclusion is based on all quantitative and qualitative data that has been used for the research in this manuscript. It was concluded that although it is very difficult to quantify the results of the implementation of the CRM system, an improvement was observed in various indicators. This includes productivity per employee as well as several profitability indicators.

Key words: CRM, Czech Company, Financial Indicators, Financial Analysis

INTRODUCTION

This case study is focused on the analysis of the effects of the implementation of a modern approach to strategic management called CRM, more specifically the implementation of a CRM system. The company that

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has been chosen for this study is a Czech company called MEGA, a. s.\(^2\) (Later on, just “MEGA”). I have chosen this company due to the following factors. Firstly, the company has been running since the year 1993 and thus extended historical data are available for research. Secondly, the company has gone through a structural change in a form of implementation of a CRM system (Microsoft Dynamics CRM) to support its management of sales and marketing and as the representatives of the company said, the aim was to make the CRM implementation a key system in the company. The implementation happened in February 2011 and thus there are extensive data available before and after the implementation of the system to see its results and effects. Lastly, the company does not only have a long history, but also a successful one. MEGA is one of the most successful companies in its field in the Czech Republic and thus an implementation of such a system should have a large effect as it can be expected to be pushed to its limits, mostly because of the company’s well-developed organization and an effort of various stakeholders in the company.

ABOUT MEGA, A. S.

MEGA is a company that develops and sells technologically advanced products based on electro-membrane processes such as electrodialysis, electrophoresis, electrode ionization and membrane electrolysis. The technologies that MEGA produces are mainly used in food industry, in agriculture, for wastewater treatment, and in the automotive industry. MEGA is then not only focused on selling goods and services but also on the RnD and extended testing of its products and developed materials and substances. The company is a part of a now larger group of MEGA companies that work in different fields and different regions/countries.

The history of the company at a glance is as follows. In the year 1976 Luboš Novák (the CEO and the owner of the company) enters the research institute of the uranium industry to develop a membrane that cleans water from its uranium contamination. In 1985 the first RALEX2 membrane gets developed. In 1993 Luboš Novák starts MEGA and becomes the CEO and the owner. In the year 2000, a company called MEGA-Tec was founded to cover electrocoating, then in 2007, a company called MEGA ProfiLine was founded in Russia, in 2008 a company called MemBrain was founded. In the year of 2009, the first large dairy focused installation is constructed. In 2012 the biggest water treatment project has been done in Barcelona. In 2013

\(^2\) a. s. is an official abbreviation for a joint-stock company in Czech Republic.
a new company in the MEGA group is founded called Мега-Україна. In 2015 a Membrane Innovation Centre gets opened (MEGA, a. s., 2021).

Company identification:
- Official name: MEGA a. s.
- Headquarters: Drahobejlova 1452/54, Libeň, 190 00 Praha 9, Czechia
- Identification number\(^3\): 44567146

CRM AND CRM SYSTEMS

CRM or customer relationship management is a management system that helps organisations manage their interactions with current or potential customers (SalesForce, 2021). Bardicchia (2020, pp. 12) describes CRM as a process in which a business or an organisation administers its interactions with customers typically by data analysis of a large amount of information they collect. The CRM systems integrate the information and communication technology parts of a complete CRM, which allows businesses and organisations to automate marketing and sales processes and services to create a profitable long-term customer relation (Torggler, 2009, pp. 300). CRM systems put together data from all kinds of communicational channels, such as websites, telephones, live chat, e-mailing, social media and marketing materials (Shaw, 1991). This allows the entity to learn from previous encounters with potential, previous or current customers. Thus, they can for example more effectively optimise the communication or marketing plan in the future and achieve desired strategic goals such as, for example, higher yearly growth in sales.

IMPLEMENTATION OF A CRM SYSTEM AT MEGA

A decade ago, MEGA has experienced rapid growth and thus the company decided to implement a CRM system to help the overall management of sales and marketing of the company. Even though MEGA used to have an ERP system for inventory management, they needed a more user-friendly and at the same time a more complex system for everyday use. This change has been scheduled and implemented in February 2011. However, preparations started already in November 2010 and thus the CRM has been in production mode from 1st February 2011. The CRM system MEGA decided to use is Microsoft Dynamics CRM (Žáková, 2011, pp. 10).

\(^3\) A number used to identify a company in the business registry.
In 2012 in a company business finance report MEGA stated that during 2011 works on implementing a CRM system had been done (Justice.cz, Business finance report 2011, pp. 25). They also stated that the CRM system was already improving the efficiency of sales in the company’s technological entities. Moreover, they mentioned that the CRM system was helping to find weaknesses when it comes to the company’s business strategy and selling processes. To make the implementation of the CRM system possible and more efficient they cooperated with another company called LLP Prague, s.r.o. Microsoft Dynamics. In 2013 they also mentioned that MEGA was trying to implement CRM software into all parts of the business processes and then to all associated companies as well.

From this, we can assume that the impacts of the implementation of a CRM system at MEGA should be visible from the year 2011, as they mentioned that it already did impact the effectiveness of their business and that it should impact the effectiveness of sales and thus it should be the priority of the financial analysis in this work.

MEGA’s focus when it comes to the use of CRM system is on maximising the usage of the company’s production cap and working on faster deliveries. MEGA mentioned that even during the first year of implementing the CRM system they had seen an improvement in the delivery time of the most demanded products. Other requirements that MEGA had for the CRM system was that it had to be able to record the activities of individual traders, the development of individual business cases (which is especially useful in large businesses where each sale could take up to two years). They also wanted to keep track of the historical communication with each customer, with project documentation and the related documents. At the same time, the CRM had to be useful in the preparation of marketing and sales projects (Žáková, 2011, ppp. 10).

**METHODOLOGY**

To analyse and understand the impacts of the implementation of the CRM system at MEGA, the analysis of financial indicators of the company before and after the implementation will be studied.

Data that will be used for the financial analysis are the official financial statements, annual reports and auditor’s reports from the public register and the collection of documents of the Czech Republic⁴.

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⁴ The exact financial statements can be found at: https://or.justice.cz/ias/ui/vypis-sl-firma?subjektId=231974
Since the CRM system mostly impacts the sales and marketing management of the company, the financial indicators that will be used in this case study will be focused on sales, rentability of investments, productivity etc. The exact indicators will be defined, and their purpose will be explained in the later parts of the case study.

The period that will be used for the analysis of the effects of implementing the CRM system at MEGA will be the years from 2009 to 2014. The reason for choosing these years is that they represent a period right before, during and after implementing the CRM system. The years 2009 and 2010 were before, the years 2011 and 2012 are the years in which the implementation was in the works (as stated in the company financial reports), and the years 2013 and 2014 are the first years that could be considered years with fully functioning CRM system (of course with still ongoing improvement). However, even though the years 2011 and 2012 are in the sign on implementing the CRM system, the company has been using the system in some shape or form since the February of the year 2011 and thus, it may still have some impacts on the financial data of the company. Later years would most likely not make much sense for analysis as it would be difficult to see what were the impacts of the implementation of the CRM system and what was the development of the company caused by any other factor.

FINANCIAL ANALYSIS BEFORE AND AFTER CRM SYSTEM

Turnover Ratios

Table 1. – Turnover ratio indicators

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset turnover</td>
<td>1.40</td>
<td>1.14</td>
<td>1.34</td>
<td>1.26</td>
<td>1.19</td>
<td>1.13</td>
</tr>
<tr>
<td>receivables turnover</td>
<td>4.88</td>
<td>3.77</td>
<td>3.69</td>
<td>4.21</td>
<td>4.10</td>
<td>3.09</td>
</tr>
<tr>
<td>liabilities turnover</td>
<td>3.78</td>
<td>3.22</td>
<td>4.13</td>
<td>4.09</td>
<td>3.67</td>
<td>4.51</td>
</tr>
<tr>
<td>inventory turnover</td>
<td>7.98</td>
<td>7.48</td>
<td>8.57</td>
<td>6.40</td>
<td>7.30</td>
<td>8.35</td>
</tr>
<tr>
<td>Inventory turnover time (days)</td>
<td>45.76</td>
<td>48.79</td>
<td>42.61</td>
<td>57.02</td>
<td>49.99</td>
<td>43.70</td>
</tr>
<tr>
<td>Receivables turnover time (days)</td>
<td>74.79</td>
<td>96.77</td>
<td>99.01</td>
<td>86.79</td>
<td>89.08</td>
<td>118.19</td>
</tr>
<tr>
<td>Liabilities turnover time (days)</td>
<td>94.54</td>
<td>110.90</td>
<td>83.73</td>
<td>84.04</td>
<td>95.28</td>
<td>77.87</td>
</tr>
</tbody>
</table>

Reference – Own calculation from business finance data
Interestingly, we can see that the Asset turnover ratio has decreased over the studied years, which could potentially mean that the effectivity of turning assets into sales over time has decreased. However, since most of the other indicators show a different trend, we have to look deeper into this problematic.

Graph 1. – Visualization of various business finance data in reference to the change of Asset turnover ratio development. In thousands of euros.

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>11,934 €</td>
<td>13,530 €</td>
<td>15,119 €</td>
<td>16,766 €</td>
<td>21,253 €</td>
<td>25,021 €</td>
</tr>
<tr>
<td>Fixed assets</td>
<td>4,669 €</td>
<td>5,271 €</td>
<td>5,473 €</td>
<td>5,732 €</td>
<td>6,866 €</td>
<td>6,272 €</td>
</tr>
<tr>
<td>Current Assets</td>
<td>7,194 €</td>
<td>8,212 €</td>
<td>9,585 €</td>
<td>10,925 €</td>
<td>14,314 €</td>
<td>18,632 €</td>
</tr>
<tr>
<td>Stocks</td>
<td>2,093 €</td>
<td>2,070 €</td>
<td>2,360 €</td>
<td>3,305 €</td>
<td>3,455 €</td>
<td>3,391 €</td>
</tr>
<tr>
<td>Short-term receivables</td>
<td>3,420 €</td>
<td>4,106 €</td>
<td>5,483 €</td>
<td>4,715 €</td>
<td>6,157 €</td>
<td>9,170 €</td>
</tr>
<tr>
<td>short-term financial assets</td>
<td>1,681 €</td>
<td>2,035 €</td>
<td>1,741 €</td>
<td>2,590 €</td>
<td>4,702 €</td>
<td>6,071 €</td>
</tr>
<tr>
<td>Sales</td>
<td>16,691 €</td>
<td>15,488 €</td>
<td>20,214 €</td>
<td>21,155 €</td>
<td>25,228 €</td>
<td>28,320 €</td>
</tr>
</tbody>
</table>

Reference – Own calculation from business finance data

The development of the asset turnover ratio over the studied years tells us that the effectivity of turning assets into sales was getting lower. And since in general businesses are trying to increase their asset turnover ratio value as much as possible, it is important to understand what the cause of this underwhelming development was. To do so we must look at the change of the ratio of different kinds of assets to the total assets and figure, what exactly was responsible.
From the previous graph, we can see that it is true that even though the sales were steadily increasing, the amount of firm’s assets were increasing at roughly the same speed, thus relatively lowering the sales per asset ratio, and thus decreasing the turnover ratio. Over the years we see that fixed assets were staying at roughly the same level, which disqualifies them as the main cause of this problem. However, what does seemingly change rapidly over the years is the relative amount of current assets to sales. Over the years we see that current assets were rapidly increasing, faster than any other asset. Thus, we must look at the composition of current assets, which leads us to stocks and short-term receivables (long-term receivables are almost non-existent in this company; thus, they are omitted entirely). Even though we can see some ups and downs in the inventory turnover over the years, overall stocks seem to be increasing as expected to the number of sales, thus we must also disqualify them as the potential main cause of the problem. However, the ratio of short-term receivables and short-term financial assets to sales seems to be increasing rapidly and in correspondence to the rapid lowering of asset turnover in the years 2013 and 2014 (the year 2010 also had a drastic fall of the asset turnover, however that can be credited to a different cause, mostly to the fall of sales in that given year). Therefore, we can see that the main issue of lowering the company’s asset turnover might be the increasing amount of short-term receivables and short-term financial assets. This can be also portrayed by the development of the receivables’ turnover in the studied years, which follows a similar path as the asset turnover.

**Liquidity Indicators**

Since the issues that cause the asset and receivables turnovers getting lower are identified we can look at the following table with liquidity indicators and figure how their values have changed and if they are in a reasonable value range.

<table>
<thead>
<tr>
<th>Table 2 – Liquidity indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
</tr>
<tr>
<td>current ratio</td>
</tr>
<tr>
<td>quick ratio</td>
</tr>
<tr>
<td>cash ratio</td>
</tr>
</tbody>
</table>

*Reference* – Own calculation from business finance data
The current ratio\(^5\) shows us that the increasing amount of receivables and short-term financial assets in the last years had a significant impact on the value. The value moved from a lower part of the recommended range to slightly exceeding it in 2014. However, this should not be considered as a bad thing as higher liquidity is better than the threat of not being able to pay off current debts and liabilities.

The quick ratio\(^6\) was also brought up to high values in the last studied years due to the increase in the short-term receivables and cash and equivalents (mostly money in the bank account). But since the too high value is much better than too low as it may cause a lower efficiency in using assets but will not endanger the company by not being able to pay off short-term liabilities, this should not be viewed as too big of an issue. When we look at the cash ratio, we see that the ratio went from lower than recommended to much higher values. Values lower than 0.5 are, according to Tuovila (2020), something businesses should avoid.

In conclusion, even though the asset turnover was impacted negatively, the liquidity ratios show us that the change was not just negative. MEGA became more secure to cover its short-term debts and liabilities. The reason for this change was the increasing amount of short-term financial assets and short-term receivables which didn’t allow MEGA to use these assets and thus we could say that the company couldn’t increase its sales appropriately and thus lost its previous efficient use of current assets.

### Rentability Indicators

Another important economic indicator that must be analysed is rentability. The indicators that will be studied are; return on sales\(^6\), equity\(^7\) and assets\(^8\). In the following graph, we can see the development of the indicators in the studied years.

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\(^5\) Current ratio = Current assets / short-term liabilities  
\(^6\) ROS = EBIT / Sales  
\(^7\) ROE = Net Income / Equity  
\(^8\) ROA = Net Income / Total Assets
In the previous graph, we can see all rentability indicators are showing a large growth during the studied years. ROS tells us that the sales are increasing, and expenses are being handled better each year and in the later years they are reaching acceptable values. The graph tells us that the rentability increased from almost 2% to 14%.

ROE indicator tells us about the financial performance of the company, by dividing the net income by the company’s equity. The previous graph tells us that the financial performance of the company was almost consistently increasing over the years, from 2% to almost 20%. The last studied rentability indicator is the return on assets. This indicator tells us how profitable a company is compared to its total assets. During the studied years, the company also experienced a large increase, from 1% to almost 13%.

To understand what caused this rapid increase in rentability we can take a look at the following graph explaining the development of sales of goods and own production and also the development of costs.
Graph 3 – Visualisation of the ratio between sales of goods and own production and their costs

Reference – Own calculation from business finance data

Graph 4 – Visualization of the relation of costs to total sales over time

Reference – Own calculation from business finance data
In Graph 3 we can see that both sales of goods and own production were steadily increasing during the studied years. On the other hand, the costs were increasing at a much slower pace, which allowed the rentability indicators to grow. When looked in more detail, we can see that the costs of goods were growing accordingly with the number of sales of goods. However, personal expenses and production costs seem to have been growing at a slower pace, thus allowing to create a higher profit.

An additional indicator that we can take a look at is the return on costs in Graph 4, which shows us what the ratio of total costs to total sales is. It is visualised in the previous graph. The graph shows us a rapid decrease in the ratio of costs to sales, which allows MEGA to create higher profits. After implementing the CRM system in 2011 the improvement became marginal which is highly optimistic.

**Indebtedness Indicators**

Indebtedness is a hot topic for many companies as financing investments by foreign assets is always cheaper than using company equity. However, it brings a lot of risk to the business. The following graph shows the development of the dept to asset ratio and the dept to company equity ratio.

**Graph 5 – Representation of indebtedness ratio indicators over time**

*Reference – Own calculation from business finance data*
In both indicators, we see a highly positive development. Especially in the dept to company equity ratio, which was almost halved. This development was caused by the fast increase of assets and company equity and the slower growth of borrowed capital in the studied years.

**Graph 6 – Representation of EBIT covering interest expenses over time**

![Graph showing times interest earned ratio from 2009 to 2014](image)

*Reference – Own calculation from business finance data*

Graph 6 shows us the development of an indicator describing the amount of time interest costs that were earned each year. From the graph, we can see the values increased rapidly. The reason for this is the same as for the development of the previous indebtedness indicators.

**Other Financial Indicators**

One of the most frequently used financial indicators to understand the health of company finances is the coverage of fixed assets by long-term resources, which we can see in Graph 7.
The graph shows us that the development of this indicator was highly positive. That applies especially to the years after 2010 that brought the value to double as much as in the year 2009. This is good for the security of the firm as it is recommended to never cover assets by short-term assets.

In 2011 MEGA representatives said in an interview that the CRM system allowed them to see more information regarding the work of their employees, management, and expensive product specialists, which allowed them to manage the work of each person more effectively (Žáková, 2011, pp. 10). Other than that, they acknowledged that the CRM helped with overall workflow, getting in contact with relevant documents and being able to see all price offers and real-time company data helped them with more efficient decision making. To see how the effectiveness has developed, we have to take a look at the sales per static indicator such as the amount of workforce there is in the company, and thus see if it leads to a higher effectiveness per worker. To see this progress, we can look at the sales per employee in the following graph.
**Graph 8** – Visualisation of the progress of sales per employee throughout the studied years in thousands of euros.

In Graph 8 we can see that the sales per employee were increasing rather fast during the years when the CRM system was actively used (2011 to 2014). This growth corresponds to the statement of MEGA representatives that commented on the positive effects of the CRM system on managing and making employees more effective.

**CONCLUSION**

Even though it is often hard to associate the development of various financial indicators to their real cause, or to quantify the impacts of the implementation of the CRM system, we can still say that the CRM system must have made a positive impact in many ways. First of all the statements from company representatives about increasing effectiveness of managing workers and field specialists have shown the positive development of sales per worker, thus we can assume the statements are indeed true. Then right after the company began to use CRM system, the ratio of production costs to sales was decreasing which is highly positive. Another positive fact is that the indebtedness ratios was getting much better after the usage of the CRM system. The same goes for the fixed assets coverage by long-term assets and
the increasing number of times interest costs were earned each year. Lastly, the liquidity and rentability ratios were corrected and uplifted to much more acceptable values. One thing that we learned that was not positive was the development of asset turnover which was getting lower, mostly because of the higher amount of short-term receivables and stocks. However, that also impacted the previously mentioned indicators positively.

In conclusion, it is hard to determine what exactly has the implementation of the CRM system affected and in what way. However, the analysis shows some highly positive progress that could be associated to the CRM system. Also, the CRM system most likely brought more positive effects to the development of MEGA`s financial health. However as the years go, it gets more difficult to see the difference that the CRM has made as we cannot compare it to any recent year without such CRM system.

REZIME
FINANSIJSKA ANALIZA EFEKATA IMPLEMENTACIJE CRM SISTEMA U ČEŠKOJ KOMPANIJI MEGA A. S.

Rad je fokusiran na analizu finansijskih ishoda implementacije CRM sistema u češkoj kompaniji MEGA, a. s. Rad ukratko informiše o istoriji MEGA, a. s. i njihov proces implementacije CRM sistema. Na osnovu ovih saznanja urađena je dalja analiza finansijskih indikatora. Proračuni su napravljeni na osnovu finansijskih podataka kompanije. Zaključak je zasnovan na svim kvantitativnim i kvalitativnim podacima koji su korišćeni za istraživanje u ovom radu. Došlo se do zaključka da iako je veoma teško kvantifikovati rezultate implementacije CRM sistema, uočeno poboljšanje u različitim pokazateljima. To uključuje, produktivnost po zaposlenom kao i nekoliko indikatora rentabilnosti.

Ključne reči: CRM, češka kompanija, finansijski pokazatelji, finansijska analiza

REFERENCES


