
Customer database for Watrec Oy



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ABSTRACT

This thesis is a development project for Watrec Oy.

Watrec Oy is a Finnish company specializes in “waste-to-energy” issues. Customer Relation Management (CRM) strategies are now being applied within the company. The customer database is the first and trial step towards CRM strategy in Watrec Oy.

The reasons for database project lie in lacking of clear customers' data. The main objectives are:

- To integrate the customers' and project data;
- To improve the level of sales and marketing processes;
- To advance existing working procedures in sales and marketing,
- To simplify analytical and reporting processes,
- To adjust overall company's approach to the customer relationship.

Target group for the customer database is the employees involved in sales, marketing and services. Beneficiaries are the company's management and shareholders.

The theoretical part of this thesis describes the grounds for a database creation and main customer relationship management features. Customer database is a part of overall customer oriented strategy and a tool of customer relationship management improvements within the company.

As a result of this work the customer database was established. The software tool (Microsoft Access 2013) and database structure were chosen based on theory and company requirements.

The database is now being applied in sales and marketing processes and remains maintained.

Keywords Database, Customer relationship management, Microsoft Access.


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Appendix 1 Sales tracking document extract

Appendix 2 Watrec case study for Business Intelligence course. Interview with Juhani Suvilampi, CEO Watrec Oy.



1 INTRODUCTION

The following thesis is a development project for a Finnish company Watrec Oy.

Watrec Oy specializes in biogas technology for environmental and energy related issues. The company provides services covered from feasibility assessment studies to turnkey projects.

Customer relation management (CRM) is now being inculcated into company's processes in order to improve the revenue through developed customer relationships and well-organized business processes. Idea of creation of the database became a logical step towards improving customer relationship processes within the company.

The database focus is on the customers. It is important to mention that in this thesis work by the customers are meant all stakeholders. Customers, suppliers and partners are included in the database as they are all elements of the whole business processes chain and are the stakeholders of customer relationship strategy. Moreover, CRM theory of this thesis work covers only business-to-business (B2B) relationship.

The core problem lies in lacking of clear customers' data required for analyzing and reporting on sales and marketing processes. That is why the purpose of this work is a creation of an applicable database with the core contacts (customers) of Watrec Oy and organizing a solid basis for all customer relationship processes.

The main objectives of the database project are:

- To integrate the customers' and project data;
- To improve the level of sales and marketing processes on the customer level;
- To advance existing working procedures and quality standards in sales and marketing;
- To simplify analytical and reporting processes;
- To adjust overall company's approach to the customer relationship.

Since customers' database is one of the tools in customer relationship management the general introduction to CRM, its main features and tools are performed in the theoretical part of this thesis.

2 PROJECT CASE DESCRIPTION

The topic of the thesis became a logical continuation of combination of studies in HAMK and work placement in Watrec Oy.

2.1 Company introduction

Watrec Oy (Watrec) specializes in waste-to-energy solutions, in specific, in biogas technology. The core of company business is biogas plant, but the services also include operation, expertise and aftersales. Watrec provides the customer with turnkey design and construction as well as offers partial technology packages, based on customers' needs. Watrec helps the customer to solve problems with waste in economical and efficient way; to produce renewable energy and high quality fertilizers.

Turnkey projects of industrial level make Watrec one of the national leaders in the biogas plant field. Nowadays Watrec has finished the fifth turnkey biogas plant in Finland with a capacity of six megawatts.

However, the company has leading positions in Finland, the need in new customers and new markets is constantly growing. That is why the company has started to pay more attention to the customer relationship and marketing processes.

2.2 Sales and Marketing processes in Watrec Oy.

Sales and marketing is the hub of customer relationship management in the company. Since autumn 2015 Watrec has begun quality improvements of business processes in sales and marketing field. Tracking and reporting systems were improved by creating Sales Tracking document (Appendix 1), arranging regular based team meetings with minutes, visualizing the processes with process schemes and arranging event on local and international level.

Nowadays sales and marketing team is organized in a matrix manner, consists of the specialists from other departments and have a project oriented mechanism of work. In general, there are five employees constantly involved in sales and marketing processes with a team-leader, sales and marketing manager.

Main markets are Finland, Poland and Vietnam. There are single projects also in Greece and Mexico.

Target groups for Watrec's business are agriculture, ecological and energy businesses, food industry, municipalities, waterworks organizations and existing biogas plants.

2.3 Problematics description

As it was stated above Watrec is establishing customer relation strategies and is in process of quality standards improvements in sales and marketing

field. One of the problems faced throughout marketing and sales processes is lack of clear data on the customers. There is no basis for marketing activities' analysis and sales strategy building in the company.

In 2015 a sales tracking document (Appendix 1) was created for the purposes of tracking the sales processes in Watrec. It was a substitution of a sales tunnel, so well-known for all businesses. It has been serving a role of tracking the sales but at the same time was lacking some specific features of a tunnel. Those features were unfamiliar to the engineers, which were involved in the sales processes, and the simplification of the document was done on purpose. The document was created in Excel format and contained three main tabs: Customers, Projects and Events.

Since the end of 2015 the sales tracking document (STD) was used efficiently for potential projects and events tracking. However, the Customer tab, which had a function of customer database, did not work properly. Misspells, duplication and empty data became a real problem. Moreover, the customers' names in Project tab did not correspond the customers' names in the Customer tab, which made any correlation between the data almost impossible.

In Poland the company faced another problem: the sales manager filled all the contacts to the STD including potential partners and suppliers. It meant that STD was not used as a sales tunnel anymore.

The situation went worse when the marketing manager needed to send newsletters and Christmas congratulations to different lists. As a result, organizing of those lists was done by hand.

All the mentioned above brought up a decision of the necessity of customer lists' improvement.

2.4 Offered solution

The offered solution is a database creation. The main objectives of the database project are:

- To integrate the customers' and project data;
- To improve the level of sales and marketing processes on the customer level;
- To advance existing working procedures and quality standards in sales and marketing;
- To simplify analytical and reporting processes;
- To adjust overall company's approach to the customer relationship.

Target group is the employees involved in sales and marketing as well as in services. Beneficiaries are the company's management and shareholders.

Main tasks:

- To study customers relationship with the focus on the database;
- To choose the database software;
- To gather the contact details of customers;

- To create the database structure;
- To arrange the data in tables with corresponding content within the database;
- To sort the data according to countries, business areas, project opportunities and future perspective;
- To tie the contacts with the tentative and existing projects.

Among the risks for database project success can be named:

- Low accuracy of data;
- Low usability of the database;
- High costs;
- Restricted functioning of the database.

Database is to become an organic step of customer approach development in the company. One of the missions of this thesis work is to provide a seamless integration of customer relationship strategies into everyday business processes of Watrec, starting from database formation and going through three main stages of CRM – analysis, resource development and implementation.

It is important to emphasize that this thesis work is not aiming on establishing the whole CRM package. It is the goal for the company for the several upcoming years. Main purpose of this work is a customer database creation. However, in order to understand the grounds for this database, CRM in general should be overviewed.

3 CUSTOMER RELATIONSHIP MANAGEMENT

Customer relationship management is fast developing tendency of a modern business world. In many cases CRM is misunderstood, sometimes because of that fact that CRM is a relatively young. Databases, software and marketing are the parts of this field, but not the only ones. (Buttle, 2004.) Nevertheless, in this thesis work understanding the CRM and its main principals are crucial in order to apply one of its tools, a customer database in an appropriate way. That is the reason to start theoretical part with general description of CRM, its main terms and features.

3.1 Why businesses need Customer Relationship Management

Customers' needs and requirements are constantly growing and the businesses should respond to the fast changing world. Customer is the main target for any business today. Any producer should be customer oriented. That is why the customer relationship approach is a necessary way of doing business; it is critical to the company strategy.

Large business companies have been implementing CRM strategies and applying their tools for decades. For a small business company the situation differs. In order to balance between costs and profit the company's management should choose cost-effective tools and mind human and time resources. The consequences from using expensive tools and involving too many employees might bring an opposite effect and end up with losses. In order to escape negative results the management should go through deep analyses on the requirements of the company, moreover, understand the basic reasons for CRM in general.

Two main reasons for implementing CRM strategies are improved revenue through customer relationships and strong competition applying CRM techniques. However, according to Buttle (2004), there is no strong evidence of revenue increase after implementing CRM strategies and return-on-investments (ROI) is a long-term process. Moreover, as it was mentioned above, CRM tools are expensive and that is why it is important to emphasize on unique requirements of the company.

3.2 Customer Relationship Management definition and main characteristics

Buttle (2004) gives a definition of CRM:

“CRM is the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to targeted customers at a profit. It is grounded on high-quality customer data and enabled by information technology.” (Buttle, 2004, 34.)

According to Buttle (2004), CRM can be split into three different layers: strategical, operational and analytical. These three layers form an endless circle where each stage provides the basis for the next one. The strategical

layer is based on the business strategy built by the management. The second layer, operational, brings the strategy into the action. The third layer, analytical, allows analyzing whether operational level functions in a proper way or not and creates the basis for strategy improvements. Based on such analyses the management corrects the strategy and applies the outcomes on the operational level.

Increasing revenue through customer relationship improvement is the main goal of CRM. In order to achieve that Buttle (2004) suggests going through the following steps:

- Customer portfolio analysis;
- Customer intimacy;
- Network development;
- Value proposition development;
- Manage the customer lifecycle.

The hub of CRM is knowledge management. Buttle (2004) states that in CRM the knowledge can be structured data and unstructured information. For CRM knowledge management the most viable are the following conditions:

- Complete customer profile including all the customer's activity within the organization – e-mails, phone calls, web-links clicks and retention time as well as information on the customer's potential.
- Synchronization on the latest changes and relevance of the data through personalization technologies.
- Accessibility from any place at any time.
- Connection between customer knowledge and solution data (partners, suppliers, service providers, etc.)

According to Buttle (2004) there are three main conditions for implementing successful CRM in the company: Information technology, people and processes. IT tools are described in more details in the Chapter 5. However, it is important to mention that CRM is not only about IT tools. Company's overall approach is an essential condition for making all the people and the processes of the company be oriented on the customer.

3.3 Customer relationship

Watrec aims to become a customer oriented company. What does it mean, in general, customer oriented? What defines whether the company is customer centric or not? Buttle (2004) names characteristics of customer-oriented company. The company should at first identify the customer and understand customer's requirements, obtain customer's knowledge and measure customer's results, such as satisfaction, future intentions, etc. Then the company should develop the product and strategies based on the customer's requirements.

According to Buttle (2004) relationship with the customer is a complex process, which is based on the purchase but accompanied with other tasks and interpersonal episodes. There are several stages of building up a trustworthy

relationship with the customer and the core elements are trust and commitment. Why would a company need such close relationship with the customer? The answer lies in the main purpose of overall business – economical profit. However, Buttle (2004) notes that not all the customers are needed.

Even intuitively, it is understandable that there are certain customers that do not worth the efforts. However, there are on opposite those who deserve the company's attention. How to attract them and what is more challenging, how to retain? In order to answer this question the customer analysis is required. For Watrec this analysis is only a future task which cannot be fulfilled without customized and accurate data on the customer.

3.3.1 Customer retention

Retention of the valuable customer is a need for any business. The main reasons are offered by Buttle (2004):

- Marketing costs are reduced;
- The customer is better understood.

Nevertheless, there are disincentives for customer retention for B2B relationships. Buttle names three main of them:

- Loss of control;
- Resource commitment;
- Opportunity costs.

In order to avoid the above mentioned disincentives it becomes even more important to define the needed customer and to determine this customer's needs. The questions: "Who is our customer?", "What are our customer's expectations?" and "How to retain our customer?" become crucial. The answers might be indefinite without certain indicators. That is why each company should be precise concerning key performance indicators (KPI).

Buttle (2004) suggests to group KPI's of any organization in four sets: finance, customer, internal, learning and growth. In order to be precise and follow the set objectives, the main focus should remain on the customer and only customer KPI's are to be taken into account. Among main customer KPI's Buttle (2004) enlists satisfaction, retention, loyalty, revenue growth, etc.

Retention of a customer is important. In B2B relationships it can be challenging task for a supplier. What are those drivers for the customer to keep the same supplier? According to Buttle (2004) they are:

- Complex product;
- Strategical product;
- Downstream service;
- High financial risk;
- Reciprocity.

There are certain rules for the customer relationship management, however, the theory does not always works well. Each organization should ground CRM strategy on individual goals and values.

4 CUSTOMER PROFILING

Nowadays more and more organizations position themselves as customer-oriented companies. Is it enough to be “customer-oriented”? Organizations that realized the value of the customer had to face changes in company strategy as well as in everyday work. Buttle (2004) insists that there is difference between focusing on the customer and developing customers’ experience. Organizations with CRM approach have their focus on improving customer’s experience. It means that for successful CRM implementation it is important to realize what can improve customer experience.

In order to understand the customer the company should study the customer from different perspectives. For this purposes the customer database should contain various information, which will allow making adequate analysis of existing data and building CRM strategy in the right way.

Within the frameworks of the CRM, conducting appropriate customer profiling is a key to a successful CRM strategy implementation. What should be included in the “perfect” customer profile? What type of data are required? Except standard contact details the customer is to have certain quality characteristics and should be sorted and segmented in accordance to company’s business specifications. Buttle (2004) suggests his own term for customer profiling and brings to it more characteristics. He offers to gather and analyze “customer portfolio”.

4.1 Customer portfolio analysis

First, it is essential to give a definition to the “customer” term. In Watrec case we are to focus on B2B relationships and it means that the customer is not an individual, it is “a company (producer or reseller) or an institution (not-for-profit or government body)” (Buttle, 2004, 100).

“Customer portfolio analysis aims to optimize profit-performance across the entire customer base by offering differentiated value propositions to different segments of customers.” (Buttle, 2004, 100.)

According to Buttle (2004) in order to analyze customer’s profitability for the company, customer portfolio analysis (CPA) should be done for both existing and potential customers. Potential customers are to be taken into account because of their perspectives for the company and their input for further development of the company. One should always remember that one of the key principles in CRM is to treat different customers in a different way, meaning that all the customers are having their own peculiarities, which are to be taken into account.

4.2 Market segmentation and CPA

In order to classify the customers into different segments the customer portfolio analysis (CPA) should be done. The analysis is to be started from defining the target areas and segments. “Market segmentation is the process

of diving up a market into more-or-less homogeneous subsets for which it is possible to create a different value proposition” (Buttle, 2004, 101).

Segmentation is mostly based on database and intuitive analysis. In general the data is usually collected from different market researches done by marketologists of the company or an outsource consultant (Buttle, 2004). Any company is to have a clear understanding in which business it is, its niche and easily identify the target market, which can be done through choosing the right variable for analysis and defining market segment’s values.

According to Buttle (2004) one of the important criteria for segmentation is an opportunity, its attractiveness for the company and company’s position comparatively this opportunity. Other key elements are size and growth potential, competition intensity and number, etc. Competiveness of company’s competences is the determinant for the segmentation.

Buttle (2004) suggests the following criteria (user attributes) for customer segmentation:

- Demographic attributes (age, gender, status, household income, etc.);
- Geographical attributes (country, region, etc.);
- Psychographic attributes (lifestyle, personality).

In B2B field these criteria should be transformed accordingly. Buttle (2004) emphasizes that while focusing on the CRM it is important to remember that the customer seeks the benefits from the product not the product as it is and this peculiarity should be taken into account when creating a customer value proposition.

4.3 Business markets

Buttle (2004) recommends, while focusing on the CRM strategy in B2B field, to refer to the Standard Industrial Classification (SIC), which allows segmenting the businesses based on their business activity or a product. SIC provides each segment with a five-digit code and sum them in ninety-two main categories.

Nevertheless, while segmenting, it is important to rely on company’s values at first and build own categorization scheme. For Watrec the segmentation was made based on the target markets the company serves. The list of business markets also included the markets of potential partners, existing suppliers and service providers.

4.4 Customer portfolio analysis tools

When the criteria is defined the customers are no be classified. Buttle (2004) cites examples of different analysis tools. Author mentions Fiocca customer portfolio theory. According to this theory the customer is to be classified based on two main criteria: Strategic importance and difficulty of managing the relationship. The next step of classification is to define the customer attractiveness and strength of buyer/seller relationship. There are various

tools, such as SWOT, PESTE, BCG matrix analysis which can be applied in CRM strategy building, however, all the above mentioned strategies can be applied to the overall sales and marketing strategy, not straight to the customer. According to Buttle (2004) there are three main strategies which can be applied in CRM. The business can either improve relationship with the customer, hold the position or withdraw.

4.4.1 Activity-based costing

Since the core goal of CRM is to improve company's profitability through customer relationship improvement, it is crucial to recognize profitable customers. For this purposes Buttle (2004) suggests an activity based costing analysis (ABC). ABC is an effective CRM tool in B2B relationship cases. Simple revenue from the customer can be easily analyzed based on the invoices. However, profitability of the customer is defined also by the costs of the customer relationship.

According to Buttle (2004), ABC approach divides the costs into volume-based costs and order-related costs. Based on the main subject of this thesis work order-related costs are of a great interest. This type of costs are determined exactly by the particular customer needs which require certain resources from the supplier.

As an example of order-related costs can be taken a Watrec's case in Poland. In order to attract the customer for sludge-treatment technology package the supplier organized two trips and used several working days of a designer and three managers. As a result, the project revenue did not cover the customer costs. This is a widespread example of low-profit projects. Nevertheless, such customers might be necessary for certain strategic steps, likewise in Watrec, when the supplier is a newcomer for the market.

However, there is a common opinion that the bigger project, the bigger profit. Buttle (2004) notes that it can be so, and it can be not. Big projects are in demand of big resources and that is exactly why ABC is essential for customer relationship understanding. ABC helps the company to define the customer's profitability (lifetime value) and further on develop CRM strategies and prioritize company's activities. Lifetime value (LTV) defines the profit the customer brings to the company and is an important criteria for customer classification, as any company would focus on the most profitable customers. It is states that constant profit margin rises with a precondition of customer retention. (Buttle, 2004.)

As was mentioned above, customer profitability defines CRM strategies, but there are more attributes which can form the strategies except LTV. Buttle (2004) cites the following attributes: high volume customers, benchmark customer, inspirational customers, door openers (as in Watrec's example in Poland) and technology partners. Many companies arrange their own models and Buttle (2004) gives an example of FinnCo model with five main groups. They identify the strategic customer based on the following criteria:

- "Economic return;

- Future business potential;
- Learning value;
- Reference value;
- Strategic values” (Buttle, 2004, 132).

While creating customer’s value classification it is important to set the strategy towards the customer based on the relationship goals. Buttle (2004) notes that the strategy would depend whether the company expects to start, enhance or end up the relationship with the customer. Customer portfolio analysis is an essential step before building any CRM strategy, as each customer group is to have a group specific approach.

5 INFORMATION TECHNOLOGY FOR CRM

As Buttle (2004) alludes, applying CRM throughout the years, organizations started to consolidate different departments' knowledge of a customer to one common view of a customer, a single system of customer information, optimizing it in databases. However, from technical point of view it appeared to be uneasy to arrange all customer channels into one source and the challenge of integration remains until nowadays.

5.1 CRM software peculiarities

Fast changing world forces us to be at the same page and immediately adapt to those changes. Same in business, same in CRM. One of the most important requirements for the CRM system is to be easily and efficiently adjustable, as well, simply integrated to the core software of the enterprise.

One of the most challenging tasks in CRM software used to be and remains the consolidation of different channels into one system available to all stakeholders. For such purposes vendors applies special technologies. Buttle (2004) refers that technology used for multiple organization touch points allows the customer data be visible across all the departments (or employees) involved in customer relations.

5.1.1 Necessary features of CRM

Each CRM software should correspond the certain requirements and have its own functions. According to Buttle (2004) CRM software is to have the features of "usability, performance, flexibility and scalability", they are "key considerations in delivering a favourable customer experience" (Buttle, 2004, 70).

Buttle (2004) notes that usability in most cases is determined by intuitive interface, minimum training of a user and high responsiveness for the customer. The latest tendency became a web-browser interface which allows usage of links and make the interface looks familiar for any user.

By flexibility Buttle (2004) means flexible data modeling, which should remain flexible and support many-to-many relations between customers and employees, as well as, support role modelling when the customer is not exactly a client for the company's business but another stakeholder such as employee, partner or supplier. Flexibility can be not only in relationships between stakeholders but also in time and place sense, meaning mobility. In many businesses nowadays, the application should be approachable not only through stationary desk top but also through laptop and smartphones. In such cases cloud based systems will be a solution.

Everyday usage requires high performance from software application. According to Buttle (2004), delays in synchronization, inability to separate high-load sections, limited alternatives or program bugs can bring dramatic

consequences to software application inside organization and what makes it worse – to the customer.

There is an important feature to be taken into account: all the software require updates and any type of upgrading requires money to fulfill the task.

5.1.2 Integration

Application integration – the process of application connection together in order to simplify and automate business processes. At the same time, the process of integration allows excluding remarkable changes to the existing structures. (Menard, 2010.)

Integration technology– is one of the most challenging part in software and application usage. According to Buttle (2004) there are four main integration areas required for CRM: application, telephony, e-mail and web integration. While telephony is not widely used by the customer in Watrec case, the three others are to be taken into account. E-mail and web integration can be solved through hyperlinks and automated redirection and replies, on-line forms and chats. Internet technologies nowadays allow to provide the customer with very high service standards. In Watrec case, one of the e-mail CRM tool is MailChimp application (application for newsletter distribution).

In general, CRM applications and tools are applied in sales, marketing and services. However, as Buttle (2004) concludes, nowadays they are used even in more fields, such as partner relationship management (PRM) or product management, especially if it concerns B2B relationships. In Watrec example, the company has a complex project structure, providing the customer with turnkey solutions, meaning involving into customer services all the product development stages starting from designing and logistics and ending up with operational and aftermarket services.

Buttle (2004) suggests looking wider. The stakeholders of CRM can be not only direct customers, but also employees (B2E), suppliers (SRM) and investors. In B2E the main function of CRM tool is to make an employee professionally equipped and knowledgeable. While in SRM case the CRM tools are applied in order to set mutual understanding and improve the overview of the supplier. The CRM application can be used even in the construction field, e.g. when the customer complaints are collected.

Nevertheless, sales and marketing area will always remain the main stakeholder for the CRM applications. Buttle (2004) notes that marketing management requires customers' list for planning, implementing and analyzing company's activities, by sorting the customers depending on the value and characteristics, segregating the target audience. The sales processes are usually based on the communication with the customer and are reflected in typical sales tunnel. In order to maintain the tunnel as a single and automated source of all required information about the customer, there should be a strict collaboration with the CRM applications. Moreover, the analytical

part of sales and marketing can be facilitated with the help of CRM tools through graphs, diagram and reports.

5.1.3 CRM analytics

Reporting is an important part not only to CRM but also to all business processes. Reporting is a cross-section of the business activities, which allows analyzing whether the current actions are having positive effect on business or not. Reporting can be done in different ways, either with simple lists (e.g. financial documents) or complex cross-functional reports (e.g. pivot tables). Complex reports allow getting specified narrow data as well as allow bringing fine precision to the results.

Online analytical processing (OLAP) technology allows easy slicing of the data for all the stakeholders. Buttle (2004) shows the data flow process of CRM OLAP in Figure 1:

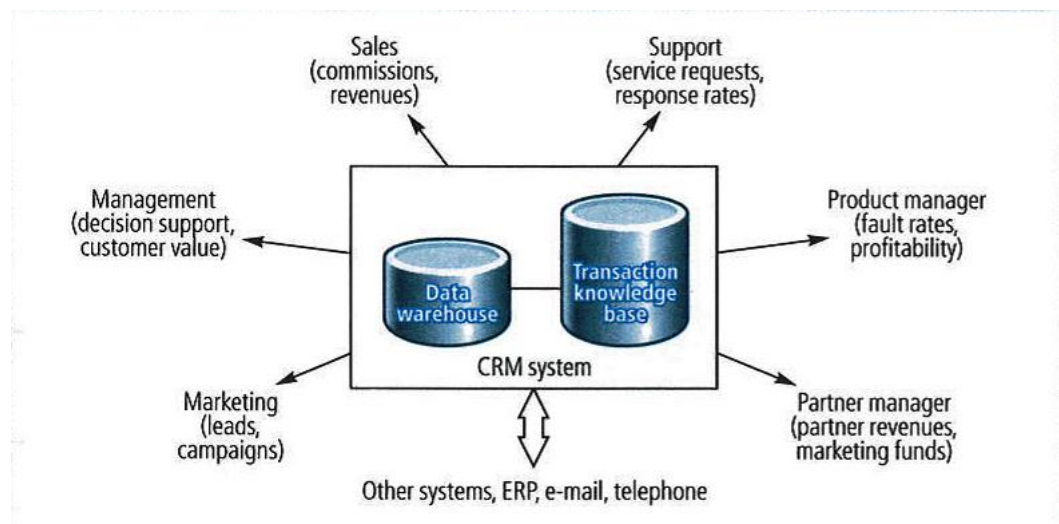


Figure 1. OLAP technology (Buttle, 2004, 91).

The scheme on Figure 1 simply illustrates the necessity as well as examples of application of CRM system. The CRM system contains two core elements: data warehouse and transaction knowledge base. According to Buttle (2004) data warehouse is generally consists of several schemas:

- "Customer;
- Opportunity;
- Service request;
- Activity;
- Marketing response" (Buttle, 2004, 91).

Buttle (2004) states that information delivery mechanism is one of the key elements in CRM analytics. How to show the data and make it easy for analyzing, should it be shown on the desktop or browser? Each CRM application user can vary in the demands and choose the vendor based on the business specific requirements.

When the management decides on creation of an appropriate CRM system in the company, there should be a clear understanding of the requirements. CRM systems demand a strong IT basis, which should provide data logistics through different devices and users.

6 CHOOSING THE SOFTWARE FOR WATREC OY

One of the main steps in building CRM in the company is to choose the hardware and applications. The conditions that stipulate the choice are based on the following questions: What are the main targets of the database and its functions? What is the size of the data? What is the platform and existing technology applied in the company? Who are the stakeholders (internal and external), their location and professional background? What is more important, what are company's capabilities and resources? The answers should give a clear understanding of the scale and complexity of the database.

Buttle (2004) notices that on early stages CRM was mostly focusing on sales and services and nowadays has shifted towards marketing. Today's most well-known CRM software products are Siebel, SAP, Oracle, PeopleSoft, etc. All the above mentioned are mostly wide spread among large or midsize enterprises. There are vendors supplying small size markets as well (e.g. Microsoft). Moreover, there are producers of industry specific applications. However, among all those highly specific products is one common characteristic – they are expensive and the service part is the most appreciable.

6.1 Watrec requirements

Choosing a software for a specific organization should be based on its unique requirements and existing IT basis.

One of the main tasks of Watrec's database is to organise and sort the contacts, relate them to projects, analyse and manage the relationship with these contacts. Since Watrec is a small business company, the data size is corresponding. According to marketing Newsletter's lists, the company maintains relationship with around three hundred contacts. Moreover, the company is a project oriented and has a lot of subcontractors and suppliers. New contacts appear every now and then.

Among the potential risks in the case description were mentioned low usability of the database, high costs and restricted functioning of the database. It brought up a requirement for the software to be not expensive, flexible and easy to use.

6.2 Watrec software background

Watrec utilizes Microsoft Office platform and has two management applications – Lemonsoft and Vertex Flow. The detailed description of the business processes organisation (business intelligence) can be seen in the transcription of the interview with the company's CEO (Appendix 2). Lemonsoft is used for administrative and financial purposes. Vertex Flow for project management and documentation flow arrangement. How to ingrate CRM processes into existing application without creating new obstacles for the users? What tools correspond to all Watrec's requirements?

Since Watrec has never applied any database, it was decided to make a pilot project and to see how the database will be established and how it will correlate to other business processes. As it was previously mentioned Watrec is doing the first steps in developing CRM within the company and it is important not to invest into developing expensive tools. Based on the existing software package and all the conditions listed above Microsoft Access has become the most suitable application.

6.3 Microsoft Access 2013

MS Access is regarded as a basis for most databases and it is obviously important that the company employees are able to work with such application. MS Access corresponds all the basic requirements of Watrec and CRM in general. The most important features are low costs and relational table structure. As it was stated in previous chapter, efficient CRM software should obtain the following features: usability and performance, flexible data modelling and knowledge data management. MS Access corresponds to all of the above mentioned. It appears to be relatively cheap and efficient. It is not just a CRM tool, but also a full-fledged application, which allows establishing the database and moderating the relationship between them. Moreover, nowadays MS Access allows using it from the cloud and provides remote database access.

Together with Watrec IT team it was decided to buy one license for Microsoft Access for the pilot project and create a sharepoint on the Watrec's cloud in Microsoft office 365. Remote access will allow the employees to check the files from different access points, including those that are abroad. No any other applications were bought.

7 BUILDING A CUSTOMER DATABASE.

Since Watrec is about to implement customer-oriented strategies, customer database is one of the basic steps towards the targets. In order to create an efficient customer database it is important to understand the roots of the necessity of the database, its functions and application.

7.1 What is a database? Relational model.

“Database is a collection of data in an organized structure. A typical database is stored in a computer as a set of records each having a number of fields for holding data items of a particular kind, such as character strings, numbers, or pointers to data located somewhere else.” (Graefe, G. & Alger, J. 2001.) In other words, database is any organized collection of data.

According to Buttle (2004), the databases can be hierarchical, network and relational. Wikipedia gives examples of larger amount of the models. However, since “relational databases are now the standard architecture for CRM databases” (Buttle, 2004, p. 152) it will be regarded as the only option for this project.

“The relational model (RM) for database management is an approach to managing data using a structure and language consistent with first-order predicate logic, first described in 1969 by Edgar F. Codd. In the relational model of a database, all data is represented in terms of tuples, grouped into relations. A database organized in terms of the relational model is a relational database” (Wikipedia.org).

Relational Model

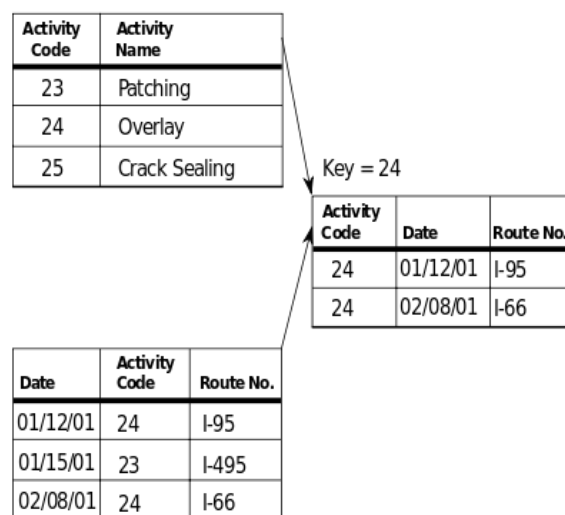


Figure 2. Example of relational model of database (Wikipedia.org)

Buttle (2004) states that relational model in any database software has specific peculiarities, which make it very attractive for the CRM purposes. One of them is an opportunity to build relationships (linkages) between data

from different tables and even databases. There are three types of such relations: one-to-one, one-to-many, many-to-many. One-to-many is the most common relation type. Example is pictured on Figures 3.

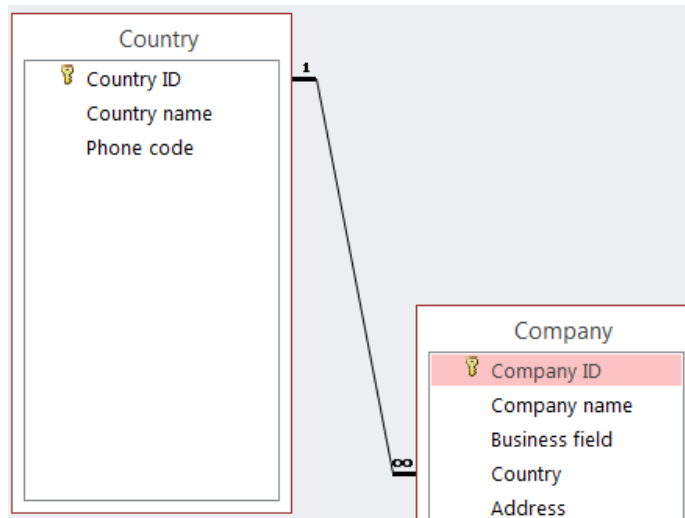


Figure 3. Example of one-to-many relationship

According to Ulrich-Fuller and Cook (2013), the reasons for the relational structure is – efficient storage, greater accuracy. Relational tables are the best way to follow transactions and more fields for application.

7.2 Database functions and information requirements.

As it was stated in Chapter 2, customer database has operational and analytical functions. Based on the company requirements Watrec customer database would mostly have analytical functions, such as customer value recognition and statistical basis for the CRM strategies.

Along with analytical functions, there are operational functions for sales and marketing department. For example, database application for sales tunnel and marketing newsletter distribution.

The database is a source of data, which different employees would search for and further on apply for business needs. It means that the data in the table should correspond users' expectations. Based on the functions customer database should gather the answers to multiple questions on the customer. What this information should be about? Buttle (2004) suggests standard fields for any database, which are to be taken into account in order to create a functioning database. Among them: “contact data, contact history, transactional history, intentions, needs, benefits, expectations, preferences and benchmarks” (Buttle, 2004, 142). Since contact data and history do not require explanations, the rest of the issues can be more complicated.

According to Buttle (2004) customer intentions are mostly based on the previous experience, on purchasing history. For B2B relationship, it might

mean that all the strategies and plans of the customer would affect the supplier. Some plans can bring the certain needs of the customer and at this point the supplier should understand the reasons for these needs and how to cover them. Watrec generally faces the single case order and should take care of the maintenance and aftersales actions. That is why the database requires manager actions' description.

As it was mentioned in Chapter 2, customer wants to acquire benefits the product brings, not the product itself. Buttle (2004) emphasizes that it is important to create a list of those benefits that the company is to offer through its products and services. Knowing customer preferences switches supplier-customer relationship to interpersonal relationship zone. Taking into account different cultural and professional communicational rules might bring customer loyalty and cannot be underestimated. In Watrec's database the choice of possible solution are to be enlisted stipulating customer's preferences.

7.3 Database features

According to Buttle (2004) all the data for CRM database should obtain a number of features. The data should be "Sharable, Transportable, Accurate, Relevant, Timely and Secure" (Buttle, 2004, 147). These features are determined by end-users of the data, so called stakeholders. Sharable, transportable and timely data allow all the inside users apply the data anytime and place. This approach also eases the updating processes that are to be done on time. To provide data security is essential when creating the database, especially on the cloud or server. Accuracy and relevance are the most challenging features and at the same time the most important. They provide reliability of the whole CRM system. Inaccuracy can bring financial losses as well as mislead the whole CRM process and become basis for the false strategy of the company in general.

According to Buttle (2004) four main steps are to be done in order to make the database relevant:

- "Verify the data;
- Validate the data;
- De-duplicate the data;
- Merge the data from different sources" (Buttle, 2004, 156).

All these steps are time consuming and require attention. But this work is important in order to make the data accurate and up-to-date.

Generally, the data is gathered from different sources. In order to obtain relevant information it is important to understand which source will provide full and accurate information on the customer. Buttle (2004) mentions that in B2B relationship the information can be collected from different departments, starting from marketing and ending up with procurement. Moreover, this task looks rather more challenging. Collected data of different content usually require different sources.

In Watrec case the internal data are collected from Vertex and Lemonsoft – applications intended for project and financial management correspondingly. External data are collected from Internet sources (e.g. google search engine, web-source accu.com). Applied content for Watrec database is taken from the existing file. The latest contacts and projects are taken from the sales tracking document (Appendix 1).

7.4 Watrec's customer database structure and content.

According to Ulrich-Fuller and Cook (2013) guidance, the main steps in creation of the database are the following:

- To capture storing data (e.g. customer, phone, type);
- To identify repeated data and move to unique table;
- To set primary key and determine the data type;

Based on the theoretical background it became clear that customer database creation is to be thoroughly planned and organized. In order to get a visualized draft the tables were drawn in Microsoft Visio application and confirmed by the Watrec's management. Figure 4 illustrates the initial draft of the database structure.

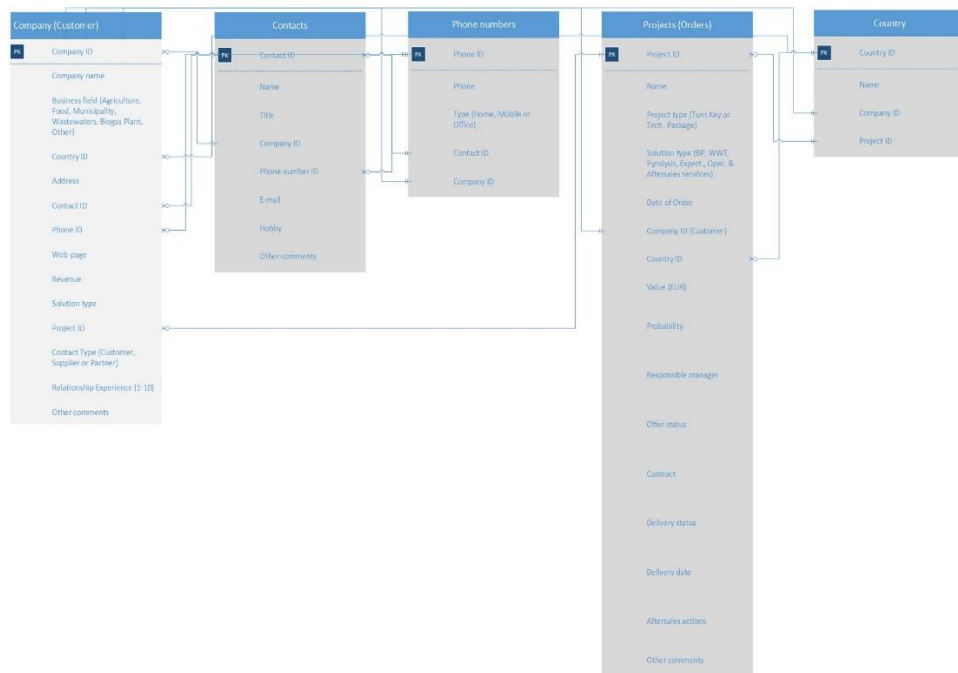


Figure 4. Draft of database structure drawn in Visio Microsoft.

When the draft of the database structure was ready, the actual database was being built. The most important feature of Microsoft Access is the relations between tables. This important function allows connecting information and consolidating the existing data into new queries and reports. The overall structure and relationships are presented on the Figure 5.

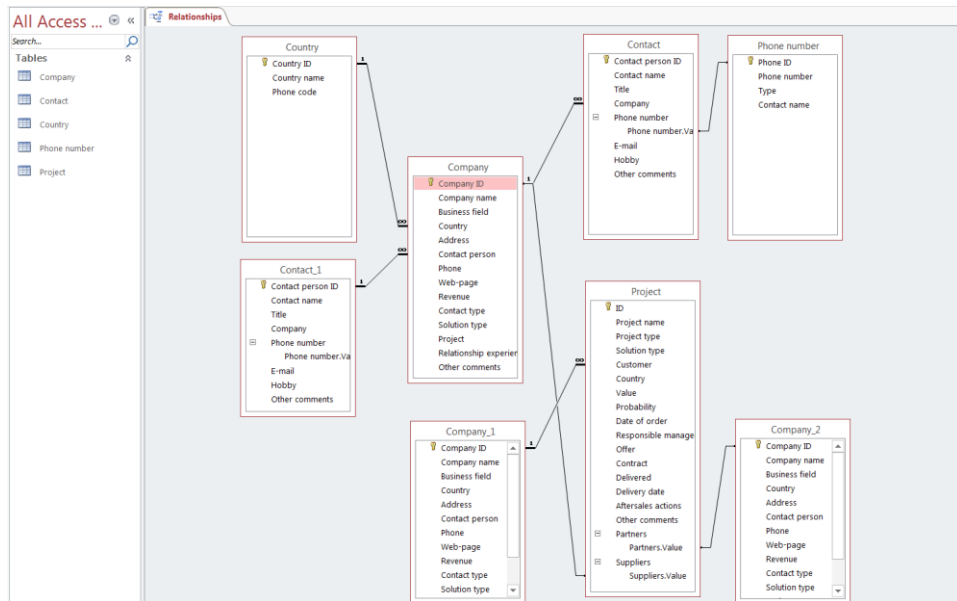


Figure 5. General relationship view. Watrec customer database.

The parent tables in the whole database are Company (Figure 6) and Project (Figure 7). These tables are related to each other in the relationship such as customer -> project and project -> customer, partner, and supplier. Other tables: contact (person), phone number, country are regarded as supportive tables, which allow construction of different queries and analyzing of the current situation.

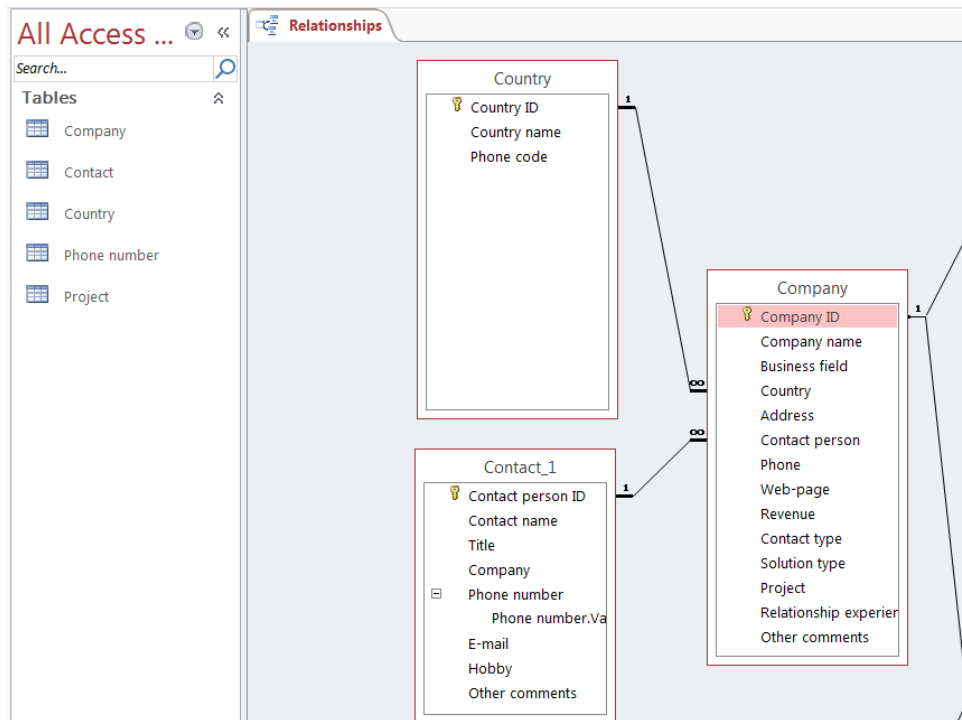


Figure 6. Company table in relationship view. Watrec customer database.

In Watrec’s database Company table represents the customer. As it was stated in the introduction to this thesis work, within this document the word

“customer” embodies all the company’s contacts, including suppliers and partners. It is done on purpose in order to simplify database process description. However, in the database this distinguish is performed in the company table (“Contact type”).

The structure of the database is determined by the stakeholders’ requirements. Sales and marketing processes demand not only contact data of the customers but also relative and descriptive information. This is the reason of additional descriptive data such as “Relationship experience” and “Other comments”.

Since in B2B relationships the customer is a company it is difficult to personalize the customer and create interpersonal connection. It was previously stated that personalized relationships are important from CRM point of view. For personalization purpose, a separate table “Contact” was created. Each customer (company) can have several contact persons (one-to-many relationship type), which have not only different contact details but also unique features. They may have different requirements and demands from the supplier (Watrec) that can be described in “Other comments” option. In order to get more intimacy with the contact person it was decided to add “Hobby” tab.

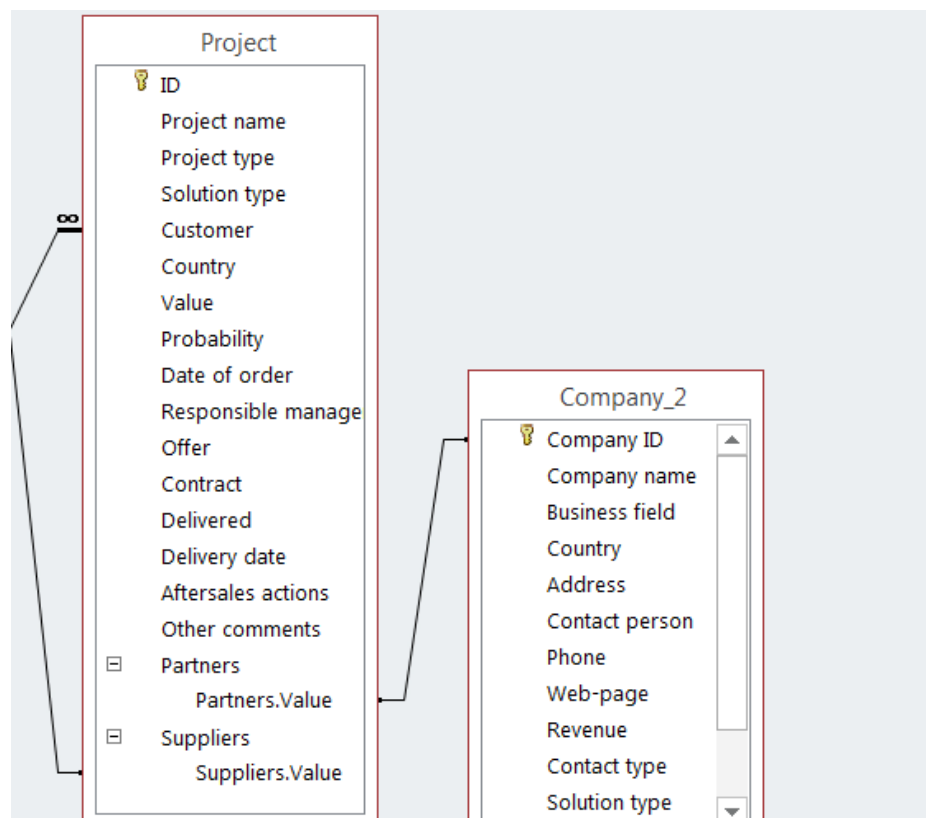


Figure 7. Project table in relationship view. Watrec customer database.

The project table (Figure 7) contains more details than the others do. The reason is that in Watrec a project is a product, which the company offers to the customer. For sales process analysis, project table should include detailed and precise data on project process description.

For the moment of writing this thesis work, the database contains mostly customers from Polish and Finish markets. There is still work to be done. Maintain the database will remain a regular based task for sales and marketing team members. According to Buttle (2004) maintain the database is the last step in data creation process. Updating the data is crucial as well as validating it. Out-of-date information can mislead and bring inadequate conclusions, which in turn can cause wrong decisions for the whole strategy building for the markets.

8 CONCLUSION

The basis for the customer database for Watrec Oy was created and the first step towards customer oriented company was made. The following tasks were fulfilled:

- The customers relationship with the focus on the database were studied;
- The database software was chosen based on company's requirement;
- The database structure was tailored based on business demands;
- The contact details of customers were gathered and arranged in tables with corresponding content within the database;
- The data were sorted according to countries, business areas, project opportunities and future perspective;
- The data were relatively connected.

The next task for the company is to maintain and develop the database. After this pilot project is launched, there are further database development steps to be fulfilled. For example, it is planned to create a "Sales tracking document" query. This query will replace existing Sales tracking document in excel file and allow to track the sales through the funnel in accordance to sales standards.

Already today the customer database can be used for everyday purposes. For the existing tasks the database will be applied as following:

- Reporting on the sales and marketing processes;
- MailChimp Newsletter distribution lists (separate for different countries);
- Christmas marketing campaign; etc.

Combination of knowledge received during the studies in HAMK and experience obtained at work allowed to create an efficient case oriented solution according to the company demands and opportunities. MS Access database became a cost-effective and at the same time applicable solution.

This project work widened the boundaries of sales and marketing tasks and directed them towards the customer. Creation of database also allowed to discover more concerning customer relation management tools and would help in further internal company development. The database project has fulfilled not only a practical task, but also a strategical one. It showed the current situation to the management and opened new questions about the business strategy and development.

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<https://www.google.com/patents/US6298342>

Wikipedia.org, accessed on 6th September 2016
https://en.wikipedia.org/wiki/Relational_model

SALES TRACKING DOCUMENT EXTRACTS

Watrec

Asiakirja: Local sales tracking document
 Tunnistiedot: LL-R-013,001EMUS1.10.2015
 Projekti: -
 Projekti no: -
 Tehnyt: EM
 Luotu: (add date of the creation)
 Päivittäjä: OPH
 Päivitetty: 27.1.2016

COMPANY NAME	CONTACT NAME	CONTACT JOB TIT	CONTACT PHONE	CONTACT E-MAIL	COMPANY'S WEB PA	FIRST CONTACT D	FURTHER ACTION	SALES DIVISIO	COMMENTS
Kouvolan Vesi Oy	Tommi Sjö	Toimintajohtaja		www.kouvolanvesi.fi				OPERATIONAL	
Kouvolan Vesi Oy	Antti Kuitava	Lahjoituspaikalla		www.kouvolanvesi.fi				EXPERTISE	
Kouvolan Vesi Oy	Antti Kuitava	Käyttöpäällikö		www.kouvolanvesi.fi				EXPERTISE	
Apetit Suomi Oy	Antti Kuitava	Ympäristöpaikalla		www.apetit.fi				OPERATIONAL	
Apetit Suomi Oy	Antti Kuitava	Tekninen paikalla		www.apetit.fi				OPERATIONAL	
Biotehdas Oy (all sites)	Antti Kuitava	Tuotantopaikalla		www.biotehdas.fi				TURN KEY	Asiantuntijapalvelus, asiantuntijapalvelus
Finomay Oy	Antti Kuitava	Tuotantopaikalla		www.finomay.fi				TURN KEY	
Mastermark Brand Oy	Antti Kuitava	Toimintajohtaja		www.mastermark.com				EXPERTISE	Tuotantopäällikön palvelus, asiantuntijapalvelus
Pieneläntekemateriaali Pohjanjärvi	Antti Kuitava	TL		www.pienela.fi				EXPERTISE	Asiantuntijapalvelus, asiantuntijapalvelus
Posintra Oy	Antti Kuitava			www.posintra.fi				EXPERTISE	Asiantuntijapalvelus, asiantuntijapalvelus
BIWIP	Antti Kuitava							AFTERSALES	
PRIZZTEC	Antti Kuitava	Toimintajohtaja		www.prizztec.com				OPERATIONAL	Asiantuntijapalvelus, asiantuntijapalvelus
Bolden Harjavalta Oy	Antti Kuitava	Käyttöpäällikö		www.bolden.com				TURN KEY	Asiantuntijapalvelus, asiantuntijapalvelus
Yara Suomi Oy	Antti Kuitava	Tekninen johtaja		www.yara.fi				TURN KEY	Asiantuntijapalvelus, asiantuntijapalvelus
Nonistik Nivala Oy	Antti Kuitava	Käyttöpäällikö		www.nonistikni.fi				TURN KEY	Asiantuntijapalvelus, asiantuntijapalvelus

CUSTOMERS PROJECTS EVENTS REPORTS

Watrec

Asiakirja: Local sales tracking document
 Tunnistiedot: LL-R-013,001EMUS1.10.2015
 Projekti: -
 Projekti no: -
 Tehnyt: EM
 Luotu: (add date of the creation)
 Päivittäjä: EM
 Päivitetty: 21.4.2016

PROJECT NAME	CUSTOMER NAME	DESCRIPTION	APP. DELIVER	VALUE, EUR	PROBABILI	SALES DIVIS	OFFER	CONTRI	MANAGER	DELIVERY S	DELIVERY D	AFTERSALES AI	COMMENTS
	Kouvolan Vesi Oy	Mäntymäki - Kouvola Kouvolan Vesi Oy	syksy 2015		90 %	EXPERTISE	DELIVERED	SIGNED	JAANA	CONTRACTED	1.11.15		
	Kouvolan Vesi Oy	Mäntymäki - Kouvola Kouvolan Vesi Oy	syksy 2015		90 %	EXPERTISE	IN PROGRESS		OP	NEGOTIATIONS			
	Posintra Oy	Posintra Oy Posintra Oy				EXPERTISE			OP				
	Oulu BKL Isäntymäksen YVA	Biotehdas Honkajoki Biotehdas Oulu Hannu Salonen Lappeenranta	keuhk 2016		90 %	EXPERTISE	DELIVERED	SIGNED	JAANA	CONTRACTED			Asiantuntijapalvelus, asiantuntijapalvelus
	Varastosakkijajärjestelmä	Finnamylly Oy Keskisuomen ELY Apetit Suomi Oy	keuhk 2016		90 %	EXPERTISE	DELIVERED	SIGNED	OP	NEGOTIATIONS			Asiantuntijapalvelus, asiantuntijapalvelus
	Tigru huoltosopimus	Biotehdas Oy			90 %	AFTERSALES	DELIVERED		OP				Asiantuntijapalvelus, asiantuntijapalvelus
	Riihimäen biokaasulaitos	Biotehdas Oy			75 %	AFTERSALES	DELIVERED		OP				Asiantuntijapalvelus, asiantuntijapalvelus
	Riihimäen YVA ja ympäristö	Biotehdas Oy	syksy 2015		100 %	TURN KEY	DELIVERED	SIGNED	OP	CONTRACTED			Asiantuntijapalvelus, asiantuntijapalvelus
	Suupohjan kuntajärjestelmä	Suupohjan Kuntajärjestelmä				TURN KEY	IN PROGRESS		OP	NEGOTIATIONS			

CUSTOMERS PROJECTS EVENTS REPORTS

Transcription of an interview with Juhani Suvilampi, CEO Watrec Oy held on 05.03.2015. Watrec case study for Business Intelligence course.

- a. How do you organize knowledge data in your company?

The company has a Server named X-files. All the construction design materials, databases and different documents are stored. Knowledge data is stored on the cloud (X-files) and is available to all employees. It is an easy and cheap way of storing data for a small business company.

Also, company has started a process of changing the documentation system with the help of Vertex Flow platform. Accepting ISO 9001 quality principles brought the necessity of accepting a new approach in documentation turnover principles.

Watrec values the knowledge obtained and tries to secure it. Availability of the most of the data is important for the quick and confident work within the company. New system (Vertex Flow) enhance organization's intellectual property performance and keep the company on a quality level.
- b. What type of data do you manage? Exactly what data are there on that X-files?

Company is dealing with a number of technical documentation, drawings and specifications, as well as typical financial and administrative documents common to business such as different type of tables, excel files mostly, recordings, also some literature. In addition to that the company has a significant library of scientific literature.

The company has a strict division on different type of data and keeps it in order.
- c. What are the main clusters of information or business knowledge would you define? What is exactly in there? Data or information about the plants, regulations?

There is information on each project in a specific project folder, which consists of different information documents, databases and drawings, supply and sale contract.

As the company growing, storage server (X server) was not looking that good any more. The company has obtained ISO 9001 certificate and has started to track all the documentation as well as the process of their creation, updates and approvals. That is why the main goal in documentation flow process today is to transform all the bureaucratic processes to the Vertex Flow system which corresponds to the demands of the company.

Vertex Flow has a function of Data Warehouse in this company. The software helps not only in storing the documents but also in managing and reporting on data. Vertex links data from different systems, like Projects and Documents repositories, and provide the end user with a variety of combinations.
- d. What are key performance indicators in your company? And why you choose these key performance indicators?

According to the specific business area of the company, KPIs are hard to identify. As soon as a company produces unique turn-key projects there is no opportunity to get loyal customers and check the level of loyalty. So, that is why the most important KPI for this company are customer satisfaction, safety, correspondence to budget and schedule, added works, and level of personnel education and its satisfaction.

- e. Then how do you measure that?

KPI measurement can be fulfilled only within a few indicators. One of those is a schedule. A project manager measures when the project has started and when it was ended. Another one – is a customer's feedback, which is collected in order to analyze and monitor customers' satisfaction.

For measuring personnel educational level the company has personnel databases and an educational plan and records of different trainings for at least some of the employees.

KPIs should provide the employees with clear understanding of important issues of the company, of what is their goal. That is how the company should manage performance.

- f. How do you control the execution of KPI and what type of KPI's do you use daily or monthly?

There are meetings with the management team where they decide what measures to take. These meetings are held six or eight times per year. During these meetings the execution of the KPI's are checked and controlled.

The upper management should make the employees to focus on meeting or exceeding KPIs. In order to achieve the results, the KPIs need to be easily achievable, meaning everywhere: coffee table, in the conference room, on the web-page (those KPIs which can be public). So, the main objective for this company concerning KPIs should be: to show the goal and explain the steps towards this goal.

- g. How do you and your employees mine data?

Employees mine data from different resources depending of the specification of their work. Mostly the search is done in the Internet. Also, some information is taken from different magazines, as well as from different projects, including the projects of our competitors.

External data mining is done mostly in the Internet. For internal usage, the company has chosen a software with corresponding function. Vertex Flow has a classification system which allows employees to surf among the data easily.

- h. What type of ERP and EDI tools do you use in your company? How do they improve companies work? What solutions have they brought?

Vertex Flow system helps the company to perform in accordance to its quality accreditation. The system allows not only storing all the documents, but also to control the process of their implementation and arrange the documents under the certain projects and monitor

further processes. It eases up the understanding of succession in documentation flow – who is a creator of the document, who approves and who is responsible for the implementation of the certain actions within this document.

It took a lot of efforts, including time and human resources, in order to get used to a new system and to transfer most of the important documents from X server to Vertex Flow platform. But now the processes are almost done and it looks like they were worthwhile.

- i. What resources do you use to organize data in your company? Who are those people who organize the data?

The company doesn't have specific department in order to manage data, but it has a project team which consists of a quality manager, a procurement director, a designer and a documentation specialist.

- j. What is your data warehouse? How do you archive out of date data?

Because of a new IT tool the company has changed traditional server to the up-to-date software. It used to be X-server, and now it has been transferred to Vertex Flow. Management of out of date data or documents are now done automatically.

- k. What are regulations, rules, organizations influence on your data management?

There are no specific regulations influencing the company externally except for the general governmental regulations for small businesses. Rules are mostly internal. Improving the performance of the company is the key factor for that respect. Quality standards ISO 9001 is now the main determinant.

- l. Do you do predictive analysis (forecasting)? And which tools do you use for this?

The predictive analysis is mostly done in the design side we do have, for example, mass balance and energy balance calculations and those types of things that we use practically every day. The company is still in the development process of arranging internal documentation flow. That is why the predictive analysis is done in a very traditional way with budget and project planning.

- m. What part of your job takes data collecting sortation and integration take? Of whole company in percentage?

According to the company's CEO the data collecting sortation and integration takes approximately 1% of all day work. In that respect it is 5% of whole company.

- n. How do you arrange and monitor data processing on the plants?

Monitoring of the process recording helps the management of the company to be updated. Taking into account the size of the company, Watrec keeps cheap and easy track in business intelligence organization.

- o. Do you use data visualizing? How and which to do use for this?

Watrec is utilizing excel for processing and visualizing simple data. More specific data, such as key figures from the plant, plant system creates those itself, for example, trendlines. These are specific systems, IT tool tailor-made for our company.

- p. Do you use dashboards? How?

Watrec is not using any types of dashboards.

Unfortunately, the company is not visualizing a lot of materials as well as not applying dashboards which are widely and widely used in business everyday life. Creation of the dashboard could have helped with KPIs definition and will clear up the certain targets of the company.

- q. How do you integrate your tools or systems between each other?

Unfortunately, Watrec didn't find a way to integrate existing tools. The company has to work in different programs and duplicate documents.

Lemonsoft software doesn't really work with any other tool, except for Excel, but that's it. And that's the tool mostly for financial administration. So, what is taken out from there relates only to the credibility of the company, the cash flow and other financial data. For the operational performance of the company, to see how the company is actually doing, again Excel is used, and then the data from the plants which cannot be really applied, and there is no any advantage of using Vertex Flow in this case.

- r. What risks do you face in using the data management tools?

The management of the company understands the risks of the system it uses and has created a backup for the company documentation.

- s. What would you name as best practices in data management of your company? And would you recommend those to other businesses?

Watrec has started improvement of its inner processes approximately a year ago with the Quality system integration and this process is still going. The software which the company has chosen gave a positive cycle of the company development.

For the financial part Lemonsoft is not recommended by the company's CEO. VertexFlow is too early to judge about. There are some advantages but still it is sometimes painful to use that at least for older generation employees. The Vertex system is mostly used for engineering works. But if the system will show positive results as being an optimization and modernization tool for documentation flow, then the company will be satisfied and then the platform can be recommend to other businesses as well.

The company's CEO would recommend quality management system, even though ISO 9001 practically has been made for manufacturing processes, or factories, or companies like that, but still for Watrec it has been helpful.