

DEVELOPMENT AND IMPLEMENTATION OF A WEB-BASED TAILORED CRM SOLUTION: AN ACTION RESEARCH FOR A TEXTILE COMPANY IN TURKEY

WEB-TABANLI KİŞİSELLEŞTİRİLMİŞ CRM YAZILIMININ GELİŞTİRİLMESİ VE UYGULANMASI: TÜRKİYE'DEKİ BİR TEKSTİL İŞLETMESİNE YÖNELİK EYLEM ARAŞTIRMASI

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Received: 21.06.2017

Accepted: 09.11.2017

ABSTRACT

The necessity to constantly follow the expectations and needs of customers and to develop value-added strategies has arisen for companies that work under dynamic environments. Customer Relationship Management (CRM) software solutions make it possible to offer customized services and develop value-added strategies easily. The need for a web-based CRM software solution emerges due to the fact that current CRM software packages fail to fit the needs of companies with complex processes particularly. In this regard, the present study aims to develop and implement a web-based CRM solution to find solutions to the unique customer relationship problems of a textile company that has complex processes and a broad product range. An action research methodology is conducted with two continuing cycles. Findings of the study reveal the impact of technological and organizational activities on the development and implementation of a web-based tailored CRM solution as well as the importance of these factors for sustainable achievement.

Keywords: CRM, Action Research, System Development

ÖZET

Firmaların uluslararası pazarlarda rekabet edebilmek için müşterilerinin ihtiyaç ve beklentilerinin sürekli izlenmesi, değişen dinamikler çevrede katma değerli stratejilerin geliştirilmesi gerekliliği ortaya çıkmaktadır. Müşteri İlişkileri Yönetimi (MİY) yazılımları müşterilere kolaylıkla özel hizmetler sunulmasını ve stratejilerin geliştirilmesini mümkün kılmaktadır. Mevcut MİY paket programlarının özellikle karmaşık süreçlere sahip işletmelere tam uyum sağlayamaması nedeniyle, web tabanlı kişiselleştirilmiş bir MİY yazılımının gerekliliği ortaya çıkmaktadır. Bu kapsamda, çalışmanın amacı, müşteri ilişkileri problemlerine çözüm bulmak amacıyla, karmaşık süreçlere ve ürün çeşitliliğine sahip bir tekstil işletmesinin web tabanlı kişiselleştirilmiş bir MİY çözümünün geliştirilmesi uygulanmasıdır. Çalışmada iki sürekli çevrimden oluşan eylem araştırması uygulanmıştır. Çalışmanın bulguları, web tabanlı kişiselleştirilmiş MİY geliştirme süreçlerinde sürdürülebilir başarı için teknolojik ve örgütsel faaliyetlerin geliştirme ve uygulama süreçleri üzerindeki etkisini ortaya koymaktadır.

Anahtar Kelimeler: MİY, Eylem Araştırması, Sistem Geliştirme

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INTRODUCTION

CRM is one of the most commonly used ways of creating value for the various types of needs and expectations. Garrido-Moreno and Padilla-Meléndez (1) defined CRM as a business strategy focuses on establishing and developing

value-creating relationships with customers. As they emphasized it is a business tool, using IT as an enabler, that requires organizations to be redesigned to customize the products and services for the customers. The customization utility of CRM can be achieved by the ability of it in mining customer data that has been gathered from all

customer touch points and predicting their purchasing patterns. By this way, firms can interact and communicate more effectively with customers who have similar preferences and expectations (2). CRM is also viewed as processes that support the planning, execution, and monitoring of coordinated customer, distributor interactions (3) and also relationships between firms and their customers in the form of prospecting, offering, acceptance, purchase, and consumption (4)(5).

Although there are many similar characteristics in the methods used in CRM between consumer and business markets, business customer needs are somewhat easier to define but not easier to fulfill. Relationship building efforts for business customers are much higher than the consumer market as they require more customization in terms of products, services, infrastructure, etc. Moreover, they are much more involved in the business processes (6).

The first section of the study is concerned with CRM software and focuses on the importance of web-based tailored CRM software solutions particularly for companies with complex processes. The second section explains software development and implementation processes. The final section presents the findings from the action research, a research method used in IS development and implementation processes which have been handled only by a limited number of studies in the relevant literature. The fact that a tailored CRM software solution was developed step by step in a company and was then implemented and that action research approach was used within the scope of the study can be listed among the important contributions offered by the study. Results of the study demonstrate the impact of technological and organizational activities and working in collaboration with a company on the development and implementation of a web-based tailored CRM solution.

The Need for Tailoring CRM

The selection of a CRM solution that fits best to the processes and policies of the companies is a critical decision as it will directly affect the success of the system. Adebajo (7) emphasized the importance of selecting the right solution for the company that will impact the level of success and returns gained from the application. Besides he noted that functional and technical architecture of the solutions, resource allocation, expectations of top management, company's CRM strategy and development of technical and management skills are critical considerations in choosing the software. In recent years the targets towards IT applications of companies change. Nowadays adding value through an enhanced customer relation becomes as important as reducing costs (3). One of the most important factors that improve valuable customer relations is the CRM software's ability to meet unique needs and processes of a particular organization. Although software packages are designed to meet the general needs of a class of organizations, they can substantially reduce the costs, risks, delays and benefit from the on-going support services (8), they may become inadequate for the unique needs of a particular organization.

Especially, for some industries like textile and apparel industry, operating in a highly competitive environment, the

competition forces companies to continuously present products that possess properties and prices desirable to sell them. Besides, as the number of consumers with varied lifestyles and cultural characteristics rises, demand for greater differentiation will increase (9). In the manufacturing side, the bill of material (BOM) for textile production has a "one-to-many" characteristic with different counts, colors, and warp types which need to match to customers' requirements. Under such circumstances, extraordinary customization efforts are required to meet specific requirements and needs (10) for such businesses having complex production and marketing processes. Bespoke CRM applications are developments for an organization's specific needs. Although it can be more expensive than the packaged software, they can be configured fully to fit in with the organization processes and preferences of the companies (7). Currently, there are many ERP software packages for textile industry (e.g., Sage, SAP, Microsoft Dynamics), however, it seems a little bit different in case of CRM. Although CRM software packages can customize the system, it was not found any tailored web-based CRM solution or (if there is) very limited in number for textile manufacturers' specific needs.

One of the most important reasons for failures in CRM success is the expectation of it to be a "quick fix" for tactical or strategic problems, or sometimes just technology may be seen a way of implementing a strategic solution (11). For that reason, CRM should fit the processes and expectations of the companies.

System Development Life Cycle

The systems development life cycle (SDLC) has a critical role in information system success and hence the success of businesses. SDLC is the process of determining how an information system can support business needs, designing the system, create it, maintain it, and delivering it to users (12). SDLC process is classified differently by many authors. For example, Valacich et al. (13) consist of fundamental four phases that interact with each other: (i) *Planning and Selection*, (ii) *Analysis*, (iii) *Design*, and (iv) *Implementation & Operation*. Kendal and Kendal (14) describe SDLC model with seven phases: (a) *Identifying problems, opportunities and objectives*, (b) *Determining human information requirements*, (c) *Analyzing system needs*, (d) *Designing the recommended system*, (e) *Developing and documenting software*, (f) *Testing and maintaining the system* and (g) *Implementing and evaluating the system*.

When system development approaches are examined, SDLC model is a widely accepted modern structured approach for explaining the complex processes and issues involved in information systems development (15). However, a system analyst's primary goal is not to create a wonderful system; instead, it is creating value for the organization, which means increased profits for most companies (12). Accordingly, some analysts have emerged in many systems fail because they focus on building a wonderful system. The reason of this fail, the analysts, tried to build a wonderful system without clearly understanding how the system would support the organization's goals, improve business processes, and integrate with other information systems to

create value (12). Development of CRM software, in particular for SME's, requires solutions that adapt to the business model of the company and easily integrate into the existing IT environment. The software should be easily configurable and adaptable to the needs of the business processes (16).

Software Development

Organizations that develop software solutions are faced with the challenge of choosing the right software development life cycle (17). Software development lifecycle entails the stages of software development lifecycle and the order of these stages. It is possible to classify all of the various software development life cycle models, which have similar structures, as follows (18):

- The Linear model (Waterfall) - Separate and distinct phases of specification and development.
- Evolutionary development - Specification and development are interleaved (*Incremental Model (Waterfall in iteration), Rapid Application Development, Spiral Model*)
- Formal systems development - A mathematical system model is formally transformed to an implementation.
- Agile Methods - Inducing flexibility into development.
- Reuse-based development - The system is assembled from existing components.

For the CRM software we developed, Incremental Model was used from Software development lifecycle models. Incremental model is known as iterative waterfall model since it is regarded as a combination of linear and iterative models. The primary objective of this model is to reduce inherent project risk by breaking a project into smaller segments and providing more ease-of-change during the development process (19). In this model, feedback from earlier iterations can be incorporated in the current iteration, and stakeholders can be involved through the iterations, and by this way, architectural risks can be identified earlier (20).

There are three basic ways to create a new system: (i) develop a custom application in-house; (ii) buy a packaged system and (possibly) customize it and (iii) rely on an external vendor, developer, or service provider to build or provide the system (12).

Development of CRM software, in particular for SME's, requires solutions that adapt to the business model of the company and easily integrate into the existing IT environment. The software should be easily configurable and adaptable to the needs of the business processes (16). Companies have focused their resources on core competencies and have chosen to outsource all other activities for some reasons such as skills shortages, cost, capacity, flexibility, and a "bandwagon effect" (21)(22)(23). Outsourcing firms can be a great benefit to having others develop the system, and they may be more experienced in the technology or have more resources, such as experienced programmers. (12). During the development of our tailored CRM software, we were involved in both development and implementation stages. It has been developed by a software company operating in the technopark that we are partners with for this project.

CRM Implementation

CRM implementation in firms should be seen as an enterprise-wide process and integral part of the overall marketing strategy (24). Successful implementation of CRM requires (i) cross-functional integration of processes, people, operations, and marketing capabilities through information, technology, and applications (4); (ii) intradepartmental and interdepartmental cooperation and coordination (24). Success in CRM projects can be achieved by technological and organizational implementations. Technological implementations consist of IT systems providing the acquisition, storage, and accessibility of customer information (25) quantity and quality of their data input (26). Organizational implementations involve interactions with support activities within the company such as commitment of top management and employees' willingness and readiness to change (4) (26). CRM implementation model has three key dimensions as people, process, and technology. This model integrates these three key dimensions within the context of an enterprise-wide customer-driven, technology-integrated, cross-functional organization (2). Kim and Pan (27) develop a process model of IS implementation for CRM based on the identified 17 factors within five dimensions and the set of influential relationships among the factors. These are organizational commitment (champion continuity, management support, resource investment, user participation), project management (requirements management, Project team skills, change management), process (CRM process), technology (IS design, IS realization) and consequences (IS quality, user satisfaction, net benefits).

MATERIAL AND METHOD

Development and implementation of a web-based tailored CRM software solution is a highly contextual topic that requires a deep appreciation and understanding of a given company, its processes, and customers. These requirements can be achieved by a detailed enquiry within the company (28). To enable such an investigation, a detailed exploration within the given company is needed. Due to the exploratory nature of the study, action research was employed as the method of research. Development and implementation of a web-based tailored CRM software solutions are possible only when the researchers and the employees in the selected case company collaborate actively, therefore it was decided that the best method to adopt for the present study was this method.

Action research is a systematic approach that enables people to find effective solutions to problems by using continuing cycles of investigation about the problems in organizations or any setting to increase the effectiveness and efficiency of their work (29). The collaboration that the subject method entails enables the company to find solutions to their problems in accordance with the common goals while enabling the researcher to apply their theoretical knowledge in the company and gain experience in the area (30). In the present study, collaborative action research was employed in order to develop and implement a web-based tailored CRM software solution that would fit the complex requirements and processes of the case company. The research process was based on the collaboration between

the researchers and the company. Action research method, which has promoted the research and implementation of information systems in recent years particularly (31), consists of five stages and a feedback loop (32)(33): diagnosing, action planning, action taking, evaluating and specific learning. These stages were adapted to the present study in the form of 2 cycles as shown in Figure 1.

Using these cycles, the purpose of this study is to develop and implement a web-based tailored CRM solution and to explore its strategic implications for Söktaş, a textile company that operates in Turkey. Söktaş is a specialist designer and producer of cotton and cotton-blended fabrics. It is selected as it has been one of the most popular textile companies in several international markets while also having an innovative research, development, design, presentation and archiving capabilities with over 300,000 fabrics in a wide variety of qualities. It has diverse product lines with a deep assortment, which are offered to different customer segments (such as ready-made sellers, tailors, manufacturers, etc.) in both Turkey and all around the world. Therefore, the company requires advanced monitoring and customized services. As Söktaş is both a designer and supplier of large fashion brands around the world, it becomes very important to monitor different preferences and trends in different cultures. Since other CRM software packages failed to fit the processes of the company, it was approved by its senior management that the company needed a web-based tailored CRM software solution. Accordingly, action research method was employed to build collaboration between the authors of the study and the company as well as to ensure that authors, by active engagement into the project, could propose solutions for the matter.

In the cycles depicted in Figure 1, stages of the SDCL model were applied. The project team was built for creating a CRM software solution that can track customer demands and market dynamics, and that is in line with Söktaş' specific processes and corporate policies; and in the first cycle, preparatory work development processes and the respective technical configuration undertaken by this team during the development of the software in Söktaş were explained. In the second cycle, technological and organizational implementation activities of the project team and the attempts to ensure sustainability were presented. Action research was conducted between June 2015 and September 2016. During the first six months; processes, customers, and policies of the company were investigated extensively. In the second 6-month long time, the software was developed, and during the last three months, steps for the implementation of the software in the company were undertaken, and necessary revisions were made on the software.

1st Action Research Cycle: CRM Development Process

Diagnosing: In this stage, primary problems are identified for the organizations' desire of change (35). Within this context, many interviews and brainstorming sessions were carried out with the general manager, vice general manager, area managers and customer representatives and secondary data sources consisting of the documents and reports obtained from the company were examined. All the problems within the scope of SDCL model identified as a result of the interviews and the respective needs of the company are summarized in Table 1.

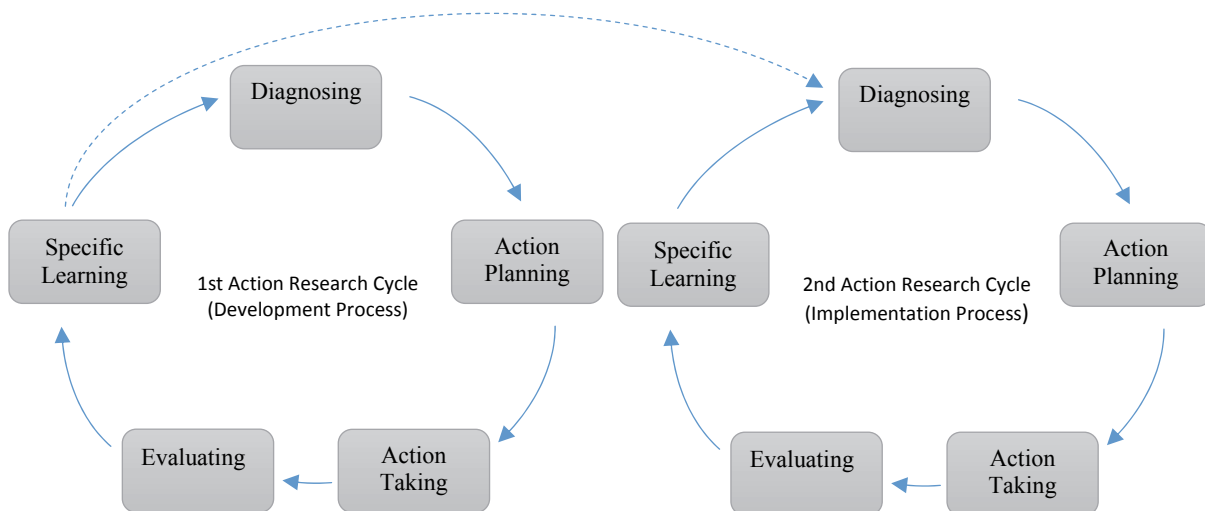


Figure 1. Action Research Cycles -Adapted from (32)(34)

Table 1. Problem Recognition and Human Information Requirements

Problems, Opportunities and Objectives	Human Information Requirements
✓ Several types of CRM software were sought; however, none of them fitted Söktaş's processes	✓ A CRM system that fitted the processes
<ul style="list-style-type: none"> ✓ Interviews about customer information and visits were not recorded, and this information remained unprocessed on the datebooks or in the emails of the marketing and sales staff ✓ Providing customized services to customers was difficult and caused loss of time; customer relationships were managed in an unproductive way ✓ Customer data were stored on multiple databases; as a result, this brought in problems, and it was not possible to update them 	<ul style="list-style-type: none"> ✓ A common customer information system ✓ The right service to the right customer at the right time ✓ Accessing all kinds of new information simultaneously
✓ In the interviews with area managers, it was indicated that Söktaş produced seasonal collections, exclusive services, in-stock services, tailor-made garments, and shirts by its customers' preferences and for all of them, it was possible to make handloom samples by CAD in accordance with the customers' demands	✓ A structure with complex processes designed in such a way to offer customized services to customers
✓ There were problems associated with the problem of managing reports about customers on one single system	<ul style="list-style-type: none"> ✓ A dashboard to enable employees quickly check the past orders, areas of operation, preferences and specific traits of their customers prior to their customers' visits ✓ The chance to obtain all reports through one single system without the need to use other software applications
<ul style="list-style-type: none"> ✓ Considering the fact that fashion changes quite rapidly, offering pre-collection presentations to customers or keeping track of the proposals addressed to customers ✓ Problems that occurred in previous years in tracking the past ordering habits of customers regularly would result in loss of sales or customers 	✓ A feature to facilitate firing triggers to area managers and customer representatives at some certain times and to simplify tracking

Action Planning: In this stage, which establishes the targets of change in the organization, planned actions are discovered (35). In this regard, system requirements for the development of the desired CRM software were defined in the light of the SDCL model, and the necessary design for the CRM system was envisaged in response to these needs. In order to ensure an efficient planning process, a project team involving not only the authors but also customer representatives and senior managers from the IT and sales & marketing departments of Söktaş was built. The project team worked regularly at the company and planned the requirements and the structure of the software to be developed. The planning process addressed the following matters:

- ✓ System requirements and the fitness of the existing data
- ✓ Technological planning for the new system
- ✓ Transforming data into a better condition; defining the insufficient, incomplete, inconsistent data or data with anomalous features and proposing viable solutions to them via convenient methods
- ✓ Rearranging the existing reports to enable users to create easy-to-use screen designs
- ✓ After data structures and user interfaces were examined and the tables in the databases used by the company were analyzed, accordingly planning involved the way they would be used in the new system, the frequency and format they would be transmitted
- ✓ The platform to be developed, coding language and the server where the software would be deployed

- ✓ Screen designs, customer cards (monitoring customers via software)
- ✓ Gauging sales & marketing processes automatically
- ✓ Preparing reports to define the scores and dominant profiles of the sales & marketing team's customers
- ✓ Building a calendar system for reminders and warnings
- ✓ Preparing detailed analysis reports for the analysis of customer data and segmentation model and for ensuring their effective use
- ✓ Analyses and tactics for collection and brand customers

Action Taking: Action taking is about implementing the planned actions (35). In this stage, development processes and the respective technical configurations were expressed in line with the SDCL model with due consideration to Söktaş' processes and corporate marketing policies. During the software development process incremental model was used, and therefore, the software was developed step-by-step and was deployed on the server. CRM run on the physical server. Hardware and software requirements for installing CRM are recommended as Windows Server 2008, .Net Framework 4.5, IIS 7, SQL server 2008 R2, 4 GB Ram. Microsoft SQL Server, a relational database management system, was used to store and retrieve data in this project. Söktaş CRM software was built with ASP.NET platform together with DevExpress framework and was programmed in C# programming language. Web developers using the framework ASP.NET require some tools to ensure better user experiences. Web development libraries and toolkits provide an ever-growing number of ready-to-use

web widgets that can be further customized by web developers to fit the needs of individual websites (36). Among these libraries, one of the best is offered by DevExpress. This suite combines enhanced capabilities to the already classical. NET framework controls while providing a cutting-edge sleek look which allows the application to be more user-friendly and easy to operate (37). Accordingly, the graphical interface of Söktaş CRM was built with the help of DevExpress ASP.NET technology. DevExpress is a framework that builds on Microsoft technologies offering improved performance and aesthetics related to controls and their functionality (38).

CRM software tends to reduce the overload conditions of the users by employing the data in the existing databases. CRM tried to get the data without making any modification to the general sales operations and processes of Söktaş. As many customer data are used in multiple databases in the company, sales-marketing department does not need to make data entries. The data can be transformed automatically from other software. However, just a few entries like calendar, news, leads, customer notes, customer score evaluations, customer location coordinates and contacts are made through this system by the user. Figure 2 shows a sample data input screen of customer data. Automatic transformation eliminates the duplication efforts and provides to access updated data easily.

The project team made some improvements concerning the overall structure of the system designed previously. In view of the interviews and requirements, an interface was created to set up a login system with personal username and passwords. After getting logged into the system, the main page of the CRM system consisting of a dashboard with widgets appears. On this page, users can see, by default, the summary information gathered from the available data about their customers. If required, it is possible to view a general information panel made up from a collection of customer data. Widgets of these dashboards were determined as a result of long meetings. These widgets

consist of the open orders, complaints, top 5 sales representatives, what's new & meeting minutes, sales trend and business unit performance elements which are peculiar to the textile industry. The component "What's New" allows the people in charge to follow the novelties in the company. "Open Orders" displays open orders by making a distinction between fabric and shirt. "Sales Trend" shows the sales made by a given person. "Complaints" displays the complaints by customers in separate visual categories. The component "Top 5 Sales Representatives" shows the top five successful customer representatives. As to "Business Unit Performance," it provides the budget targets concerning Turkey, Turkish Shirt, Italy and India categories and their level of realization. A dashboard sample from the software is given in Figure 3.

As part of the CRM software, special cards were designed for customers. The subject customer cards are shown in Figure 4. On these cards, customer identities, current sales status, open orders, date & time of orders, sales on a seasonal basis, payment performances, scores, complaints, etc. are all available in detail. On the upper side; customer details, sales data, open orders and customer complaints appear. Users can click on a given line and access detailed information about it. On the bottom of the screen; sales data, open orders, order placement, sales data by season, payment risk status, graphics for customer challenge & pocket margin, "waterfall" charts, order details, ready-made producers, and information on the card catalogs sent to a given customer appear as separate tabs.

Seeing the amount of order placement is of critical importance for CRM screens that are going to be used by area managers and customer representatives to analyze order movements of each customer. As can be seen in Figure 4, area managers and customer representatives will be able to predict customer behaviors in the subject year by viewing the data from the last three years on the weekly breakdown. The major advantage that graphic illustration provides is that it enables the user to see the effects of an order placed before the expected date.

GERMANY / XXX ▼ General Info

Basics

Code:* 000000 - SocktasTR Category: Menswear X Womenswear X

Shirt Types #: _____ Made To Measure ?:

Price Range: 0 50 100 150 200 250 300 350 400 450 500 550 600 + EUR ▼

Online Sales ? : http://www.xxx.com/ Stores Count: 1113

Agent: _____

Payment Term: 120 Payment Currency: EUR ▼

Web & Social Media

Web Site: www.xxx.com Email: xxx@xxx.com

Facebook: xxx?ref=ts Twitter: xxx

Instagram: xxx Pinterest: xxx

Figure 2. Customer Data Input Screenshot

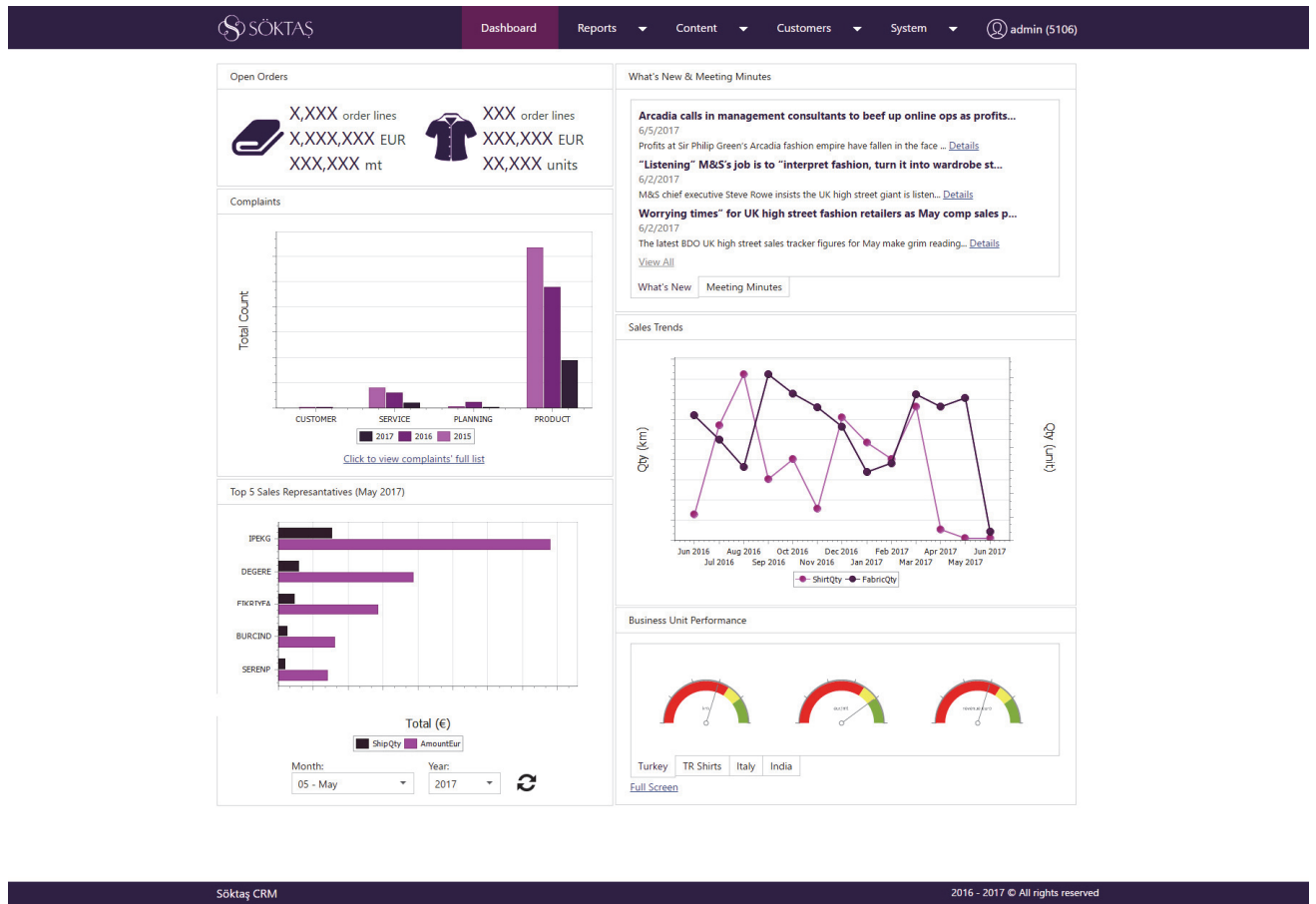


Figure 3. Dashboard screenshot



Figure 4. Customer Card Screen Shot

Another important feature that would prevent loss of customers is the customer complaints tab. It will be possible to track seasonal complaints from customers, to find out the reasons for keeping pending complaints unresolved and to save the subject of complaint for the prevention of re-complaint. In this way, the process of gaining and retaining customers will run efficiently within the general logical framework of CRM.

As part of the CRM software, a feature for scoring customer challenges was also developed. Criteria defined in the meetings with the help of senior managers at the sales & marketing department were scored as presented on the screenshot below.

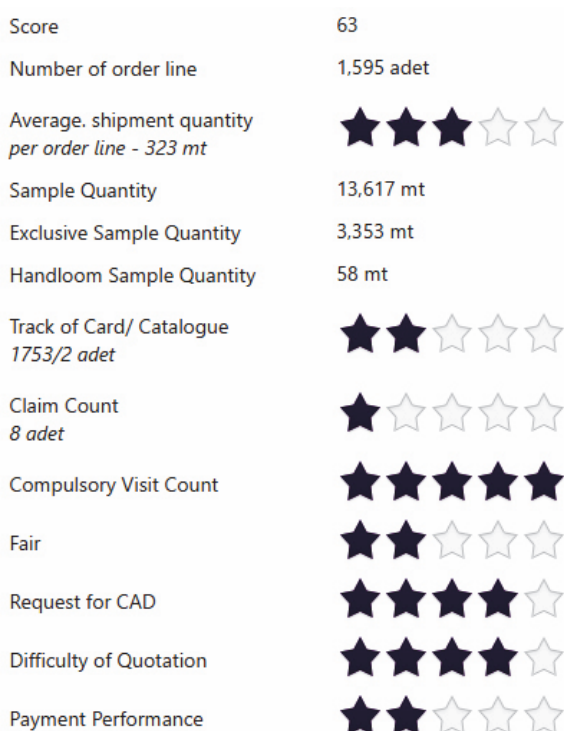


Figure 5. Customer Difficulty Score (Partial)

One of the most important parts of CRM software is the reports menu. The reports menu includes five different report types, namely Sales by Type, Sales by Season, Pocket Margin vs. Customer Score, Sales Quantity & Price, Risks. Customer Challenge & Pocket Margin matrix is the section which will offer guidance to customer representatives in the CRM system and which will guide them through the necessary tactic and help them choose one from among these tactics. Reports obtained from CRM to develop tactics and strategies for customers alone will not be sufficient due to the different business manners and expectations of customers. In addition to the reports, customer representatives and area managers will be able to develop more efficient tactics on the basis of customers' locations on the customer challenge & pocket margin matrix,

by using the tactics flow. The subject matrix is presented in Figure 6.

Calendar component was developed as a tool that would help area managers and customer representatives follow their weekly schedules and send them reminders, if necessary. For example, customer representatives will be reminded of an approaching fair event or collection presentation dates via triggers. Calendar application has a sub-section called "content" which provides access to pages for tracking meeting notes and novelties. In the meeting minutes sub-section, all the uploaded meeting notes can be displayed. When customer representatives upload the content of the meetings they have attended, a corporate memory is built. In this sub-section, it is possible to filter the notes according to tags, customers or users. A system enabling customer representatives to upload the content of the meetings they attended was built. The software designed by the demands of the company offers the opportunity to carry out system settings in all areas that are in a person's scope of authority.

Evaluating: If CRM development process is evaluated as a whole, it is possible to say that the software perfectly matches Söktaş's processes as well as the expectations and the needs of users. The software developed within the scope of the project is easy to use, accelerates the processes and meets the needs perfectly. It became possible to develop this perfect-match software thanks to the cooperation among the authors of the study, senior managers and employees of the company and also thanks to the fact that both users and the senior management were involved in the development process when necessary. Textile production has a "one-to-many" characteristic with different counts, colors, and warp types and so many different requirements of different customer segments (10) bring about the need for tailored CRM.

Specific Learning: Developing a piece of software that fits the processes and matches the specific needs of users in compliance with corporate strategies is possible only if collaboration, management commitment and willingness to change are present.

2nd Action Research Cycle: CRM Implementation Process

The steps which were followed in the first cycle were repeated in the second cycle of the study, namely CRM implementation process. In the implementation of the created software, Becker et al.'s (26) technological and organizational implementations approach and Chen and Popovich's (2) people, process and technology integration approach were utilized.

Diagnosing: Primary objectives in the implementation of the CRM software were determined. Within the scope of the SDCL model, the following objectives and requirements defined as a result of a range of meetings carried out with HR, IT and sales & marketing departments are summarized as follows:

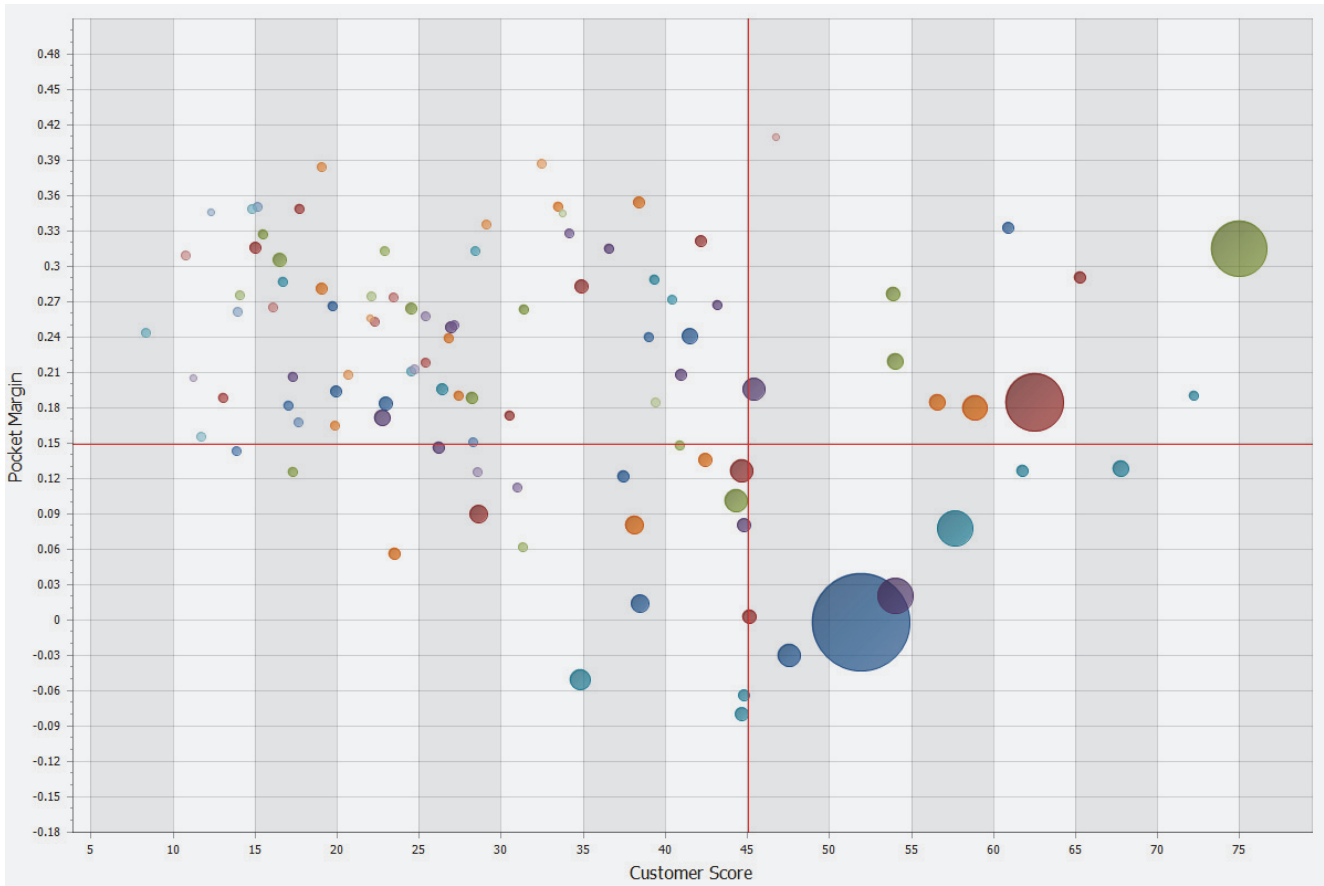


Figure 6. Customer Difficulty -Pocket Margin Matrix Screen Shot

Table 2. Opportunities, Objectives and Human Information Requirements

Opportunities and Objectives	Human Information Requirements
<ul style="list-style-type: none"> ✓ Establishment of CRM Analytics Unit at the company ✓ Ensuring that this unit plays an active role in the implementation process 	<ul style="list-style-type: none"> ✓ Defining the objectives and duties of the CRM Analytics Unit
<ul style="list-style-type: none"> ✓ Ensuring that users adopt the new software 	<ul style="list-style-type: none"> ✓ Promoting users to use the software
<ul style="list-style-type: none"> ✓ Ensuring that the software run actively based on actual data 	<ul style="list-style-type: none"> ✓ Area managers and customer representatives should upload customer information on the system ✓ IT Unit should transfer the data that needs automatic transfer
<ul style="list-style-type: none"> ✓ Measuring system performance 	<ul style="list-style-type: none"> ✓ Updating the system by the feedback from the users

Action planning: For successful CRM applications; making process, information and technical integration (26) part of the corporate functions and ensuring constant collaboration and coordination within and among departments (2)(4) are of crucial importance. In view of this, stages of implementation were planned as follows:

Preparation (First 4 Weeks):

- In the implementation of the system, assigning a CRM Analytics specialist of the marketing department and ensuring that they build inter-unit integration, keep the system up-to-date, encourage the use of the system and pioneer the training of users
- Inputting data into the system to ensure the usability of the system. Assignment of a business analyst to test the analyses and to check the efficiency of the data input

- Informing the sales & marketing and M2M units about what facilities and advantages the CRM software had to offer them and to Söktaş in general, and boosting their willingness to use the software
- Explaining the logic behind CRM and defining the metrics of CRM performance

Transition to Implementation (1st & 2nd months):

- CRM specialist arranged hands-on-training activities regarding the use of the system
- Needs or problems about the use CRM system that occurred with time were communicated to the Business Analyst, and hence, it was ensured that the system was adaptable to the needs that might occur through time.

- Employees were encouraged to use CRM by defining the CRM use as a KPI in the performance management systems of CRM marketing & sales & M2M units of Söktaş

Gaining Expertise (3rd - 6th month)

- Making improvements for the use of the system in accordance with the needs
- Standardizing the system so that all units used the same business model instead of models devised by customer representatives and area managers themselves
- Ensuring that business analyst and marketing unit offered regular training and constant support
- Constantly tracking and revising the CRM metrics and their use

Action Taking: In this stage, the planned stages were put into action. All users were offered training on CRM and the values it would offer to Söktaş. Data input was completed by the individuals assigned by the senior management and by the project team. After pilot users from the marketing department were selected, the system was put into use with actual data. CRM metrics were created, and they were defined as KPI for users. Senior management also became fully engaged in the use of the system, and necessary authorization procedures were conducted. After the pilot implementation process, in the periodic meetings, some processes peculiar to area managers and customer representatives were redefined on the system, and the system was improved in some respects. Afterwards, stress test for web server performance is performed under normal and excessive loads. There are about 80 users in the system. Using ramp test with the Paessler stress tool, we performed webserver stress tests for 200, 500 and 1000 users with 20 seconds random click delay. Tests run for five minutes. The results reveal that the average click time for 1000 users is 5.134 ms with 5.17 % errors, the average click time for 500 users is 3.004 ms with 3.27 % errors, and the average click time for 200 users is 2.283 ms with 2.22 % errors. The system currently does not cause any problems with the number of existing users. If needed, these values can be improved by server development in the following periods. Finally, all users allowed by the management were given access to the system.

Evaluating: All the features and dimensions of the CRM software developed and implemented within the scope of the project were shaped by the needs of Söktaş A.S. and the marketing & sales department employees' and respective managers' demands, and the consensus was achieved about all dimensions of the software. All the processes, users and technological integration need to be constantly monitored to ensure that the system is productive and offers long-term benefits. Besides, sensitivity, willingness, and motivation of users to use the system bear particular importance for sustainability.

Specific Learning: Development and implementation of the web-based tailored CRM system can match the company processes and remain sustainable only if constant

collaboration is achieved. The success of the process cannot be established only through individual attempts of IT or marketing & sales departments, but it can be ensured via joint attempts by all the relevant departments and senior management. In order to transform the use of the system into a component of corporate culture, all the emerging problems that users experience when using the system should be revealed and solved, and the system should be improved by these needs. CRM performance should be regularly monitored and used by the management; training and support concerning the applications should be available to all, and data should be kept up-to-date. Moreover, all these procedures should evolve into standard processes that are not optional and instead are adopted by all users.

CONCLUSIONS

The success of CRM applications at companies depends on gaining full support of businesses and adopting them as part of corporate marketing strategies. For successful CRM applications; process, information and technical integration should be part of the corporate functions, and constant collaboration and coordination within and among departments should be ensured (24)(4)(25)(26). Although many industrial branches have their peculiar processes, textile industry as the supplier of ready-made businesses has to deal with several extraordinary demands of these businesses (10); and this, in turn, complicates the customer relationship management processes in the textile industry. As a result of the action research conducted due to this need, a web-based tailored CRM solution for the particular needs of Söktaş was developed and put into practice. This solution matched the company processes perfectly and met the needs fully mostly due to the fact that authors worked in coordination with the company employees. The resultant CRM solution reduced the time spent in previous systems, costs of operation and employee effort to a minimum. Besides, the solution made it possible to offer customized services to customers, a necessity inherent in the industry and the business model of the company, and to develop tactics and finally, to track and update these tactics regularly. In order to ensure the use and sustainability of the system, it is necessary that the system is used persistently by the sales and M2M units as efficiently as it is used by the marketing department. On the other hand, it will be possible only if CRM use becomes part of the corporate culture and is supported by the senior management. As to sustainability, it can be ensured if problems that users may be confronted with when using the system are defined and solved and if the system is improved by the emerging needs. Key to success is hidden in a few factors. These factors necessitate that CRM performance is regularly monitored and used by the management; training and support concerning the applications are available to all, and data are kept up-to-date. Moreover, all these procedures should evolve into standard processes that are not optional and instead are adopted by all users.

The developed web-based tailored CRM software become an effective tool for Söktaş as all the processes are designed according to that firm needs. This software can be also an effective tool for the other textile firms. However, it

can be adopted by providing data transformation. Data connections can be changed easily. However, for data sources to work effectively with our CRM software, it is necessary to make process analyzes and make necessary data arrangements in the company to be able to be adaptable. The technical configuration allows the other textile companies to use the developed CRM, provided marketing processes should be well-analyzed and adapted to the system that will best fit with the companies' marketing and CRM strategies.

ACKNOWLEDGEMENT

We would like to show our gratitude to Mehmet Yılmaz, General Manager, Soktas Dokuma İşletmeleri Sanayi ve Ticaret A.Ş and all managers and the staff for sharing their pearls of wisdom with us during this research.

We would also thank Utku Ozturk, KaryaSMD Software for technical assistance in developing the CRM software.

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