Business Process Management in Service-Oriented Companies

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This paper presents the business model of a call center company including human resource management features. Starting from several approaches of business model definitions, we adopted a model for a service-oriented company. Based on the system objective, function, component modules and key indicators of Telmar software we analyzed a call centre company, using aggregated data from this software and determined human resource dynamics for past three years and key management indicators in two campaigns.
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1 Introduction

A personal point of view about definitions and functions of business model (BM) has already been stated. A business model is a "set of which activities a firm performs, how it performs them, and when it performs them as it uses its resources to perform activities, given its industry, to create superior customer value (low-cost or differentiated products) and put itself in a position to appropriate value" [1].

From an entrepreneurial perspective a business model is "a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets"[2].

As a tool that describes the company's earning, the logical business model depicts the value of services and products that a company offers to its customers. Business models are divided into three categories: *abstract models*, *implemented models* and *virtual models*. The abstract model is a generic description of business model concepts, components and their relationships and can be implemented into structures and processes of the company. Virtual models are used as sources of innovation and guidelines when managing the change [3].

Davenport et al provide a generic definition for the business process "as reflected by the enterprise's core value proposition(s) for customers; its configured value network(s) to provide that value, consisting of its own strategic capabilities as well as other (e.g. outsourced/alliance) value networks and capabilities; and its leadership and governance-enabling capabilities to continually sustain and reinvent itself to satisfy the multiple objectives of its various stakeholders (including shareholders)". In their vision a business model consists of four elements:

1. particular customer base including specific categories;
2. customer value proposition that could involve new customer base;
3. value network (re)configuration for that value creation and delivery;
4. leadership capabilities that ensure the satisfaction of relevant stakeholders.

Pointing a business model as a managerial tool Osterwalder et al define it as a "conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, to generate profitable and sustainable revenue streams"[4].

This paper offer a business process modeling solution for a service-oriented company, focused on call center features as a distributed development solution. After the introduction

to the business process, in section 2 we shall focus on a business model for a service-oriented enterprise in a collaborative environment. In section 3 we shall present the software objectives and functionalities, and human resource management and quality issues, based on two campaign case studies, and centralized data from the past three years. The last section is dedicated to conclusion and future work.

2 Business Models and Functionalities

One of the most important factors in building corporate culture relies on the particularities of the interactions between employees, the quality of leadership and organizational communication.

The business model consists of four elements: the *network model, the operation and maintenance model, the financial model* and the *life cycle model.* In Figure 1 these are depicted as a dash line rectangle. All four elements have to be in balance and the balanced model is used in the creation of measurement criteria. The network model is represented vertically and it describes the whole physical network and all of its components as a WAN. The operation and maintenance model, and the network model have to be adjusted in order to match each other. The life cycle and financial models are represented horizontally. The financial model is created based on the company's yearly budget, estimated income (contracts, sponsored fees, taxes, ranting income, aso) and cost structure within a certain life cycle.

The implementation of the business model is based on for the implementation agenda and budget. Both are used as tools when we analyze the value chain and processes. By means of the model one can control both operational value chains and real processes [5].

A contact center will manage various customer contact channels, will ensure a support service of clients by phone calls and other types of media such as email, and fax.

Most call centers are outsourcers. Only 1% promote their own products, the remaining 99% carrying out contracts for various cus-

tomers, and functioning mainly as an intermediary between: the brand, company, manufacturer and market segment.

The activities of a call center may be: telemarketing, telesales, telephone exchanges, green numbers management, database processing, "help desk" and "customer oriented services", customer support, assistance activities, Web site management and search engines, e-mail filtering, e-building reception and management [6].

The main branches of activity of a call center are:

- inbound activities -incoming calls - taking telephone calls;
- outbound activities - outgoing calls - initiate telephone calls.

As a case study we shall focus on a company, in which we observed mainly outbound activities, describing the quality management process in this specific branch of activity. In order for outbound activities to be effective, as in any direct marketing campaign, the following steps are necessary to be carefully watched and accomplished:

- individualization and clearly defined campaign;
- determining helpful resources and tools;
- organizing and programming the background and chronology of activities;
- launch operations, management and coordination of activities;
- monitoring and evaluation of results and costs
- planning and carrying out the improvement.

The main outbound activities are:

- setting meetings to offer advice sessions;
- setting consulting meetings with third parties: direct sellers, traders, professional consultants, technical assistance;
- proposal to sell products and services;
- organization of fairs and exhibitions;
- credit recovering and payment polls;
- quality control and satisfaction or dissatisfaction customer.
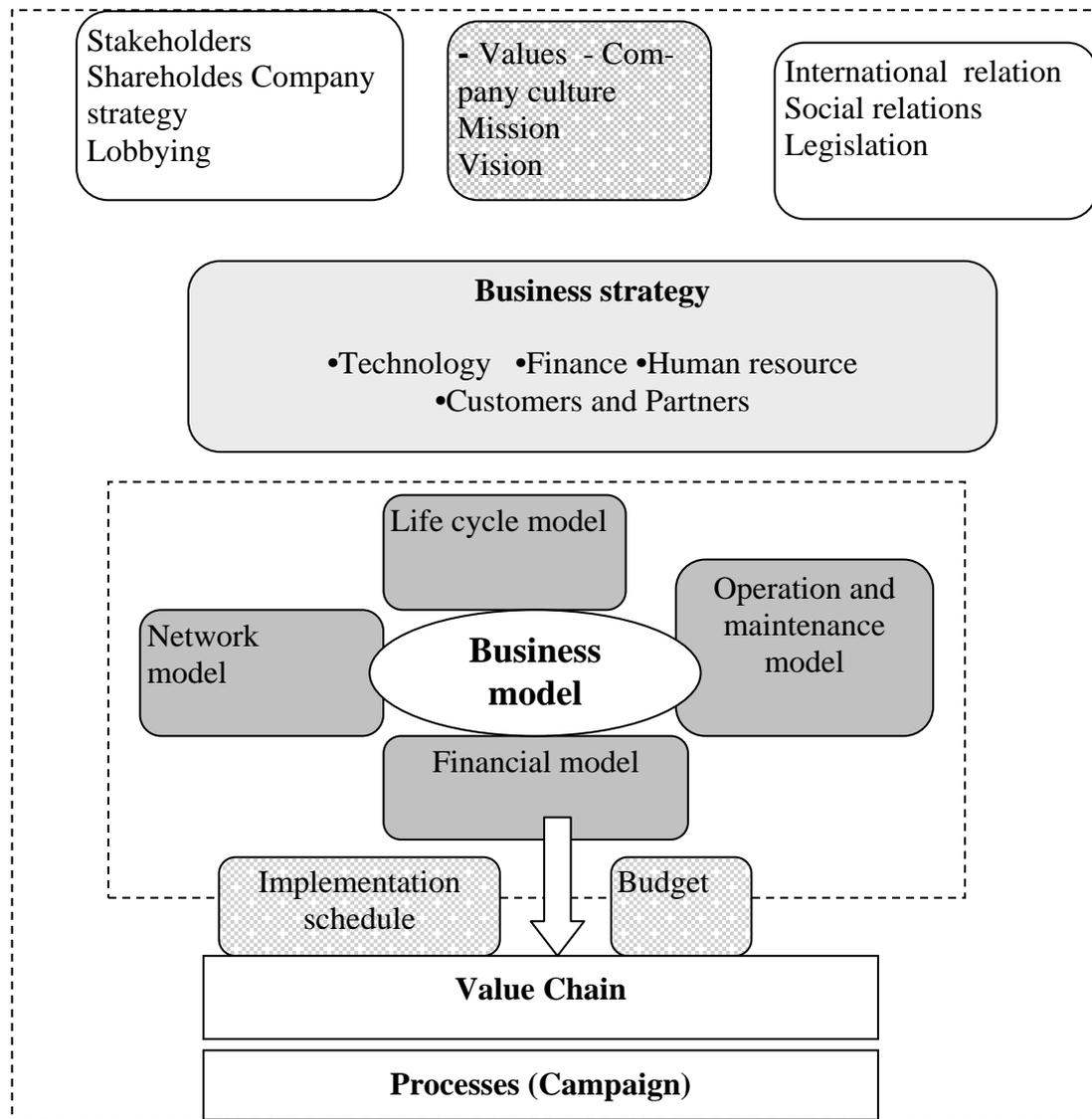
Fig. 1. Business model for services company

The key elements in the pursuit of outbound are: the qualities and benefits of product or services promoted in the campaign, the marketing strategy and the assessment and operator of outbound or seller itself, briefly operator call center [7].

3 Software Objectives and Functionalities

Companies who wish to start up a call center business should take into account several important investment basic issues, namely:

- logistics type: PC, multimedia headphones and speakers for each operator in part;
- Microsoft licenses for every workstation;
- antivirus on each workstation, and especially on the server;
- a powerful server;

- Internet connection speed;
- PBX system performance;
- last but not least, a powerful software for the call center activity.

In order to avoid annoying conversations and repeated calls, most call center software will have the option system: "do not call again". By selecting this option and saving it, the nominative will not be reproduced for calling. All nominative calls which include this option will be collected in a file called "black list" and will not be taken in efficiency calculus. Besides denials, the black list also contains: zero numbers, faxes, wrong numbers, customers who already have the service / product that is offered. Refusals call priori can not be recharged in software, except for

the situation in which a new campaign has been started for a new product or service.

When it was conceived and launched, Telmar 2000 was released to operate on a market that has growing competitive demands and objectives, which seeks new ways to increase productivity and reduce costs. It was developed using advanced technology in order to support companies that use telecommunications for market research, customer satisfaction, and sales promotions. This solution focuses on the identification and removal of repetitive manual processes that affect the cost and productivity and spawn automated processes.

It should be mentioned that it has all the features developed over years of experience in telemarketing and other new and advanced features such as CATI (Computer Assisted Telephone Interviewing). By using Telmar 2000 one can increase productivity of human resources, since much work is done automatically by the system. It integrates existing environments that can be configured by the specific needs and timing software allows the use of the desired function at the right time. It should be interpreted as a center for effective profitability and quality that ensures recovery of investment for rapid need, reduce inefficiency and increase productivity.

This approach used distributed architecture and software features have concern on several functionalities which consist on:

1. *Client server architecture* enables high efficiency, safety data processing, speed of access and/or modified data. These features allow you to manage a large database lacking performance.
2. *Telephone integration* with any device compilation TAPI (Telephony Application Programming Interface) or Technologies VoIP (Voice over Internet Protocol) (SIP-Session Initiation Protocol/IAX- Inter-Asterisk eXchange protocol) offers an analogical or digital connection or most devices traditional telephone. The software module allows preview, training and anticipation training numbers (preview, power and predictive call). An SDK is al-

so available to integrate a telephone system or other PBXS.

3. *Data Import/Export* gives a total interface with any database it is also made naturally, or through ODBC bridges, linking several types of data source or structure.
4. *Scripts creations* are a very complex system of formal opportunities to make questions in a dynamic mode, based on database fields, the system variables or logical expressions. Also users can ensure that the choice of questionnaire response launches a procedure and verification and confirmation of its results using different ways. For example, launching the application, send email, other procedures linked with specific modules. The answers to the text can be coded manually or automatically. Module has capacity to make automation questions and answers, by using a simple and intuitive interface based on the copy-paste system portions and merging in the existing scripts.
5. *Amount of CATI management* is very powerful and easily changed to manage time working samples.
6. *Meeting set* module allows management of sales resources and provides the operator, updated calendar of events, including free time, hours not available and saturated times. The software has a simple graphical interface, in which the operator can choose the time and the place down.
7. *Central map and geo-location* module was designed for people who want to team managers, sales and management meetings through telemarketing, etc., with more information as geographical aspect of the campaign. In this module users can get geographic location allows the registry and similar applications, subdivision of companies based on geographical areas, optimize processes, reduce costs with travel agencies in the area, improving customer service.
8. *Call center monitoring* is a real-time visual control on all workstations in its call center, which offers possibly graphical representation of each workstation.

9. *Log Analyzer* is an application that analyzes the work done by operators and allows to generate reports more accurate, to get a clear vision and detailed the work, and to evaluate productivity.
10. *Messaging server* is the software module in charge of sending emails, faxes, SMS, and the production of personalized documents generated during the interviews. To send an email SMTP server and send faxes is enough to have a server Windows Fax but when sending SMS module requires a telephone modem or a GSM modem embedded. Dynamics list-

ings require a license Microsoft Word installed on the same computer.
11. *Meeting publishing* system can fixed appointments with customers, has the potential to generate a printing or transmission via email or via fax. It offers opportunity to publish and arrange meetings for consultation on the Internet via the web [8].

4 Human Resource Management and Quality Issues

We will analyze global statistics and human resource dynamics using centralized data for past 3 years and two relevance campaigns.
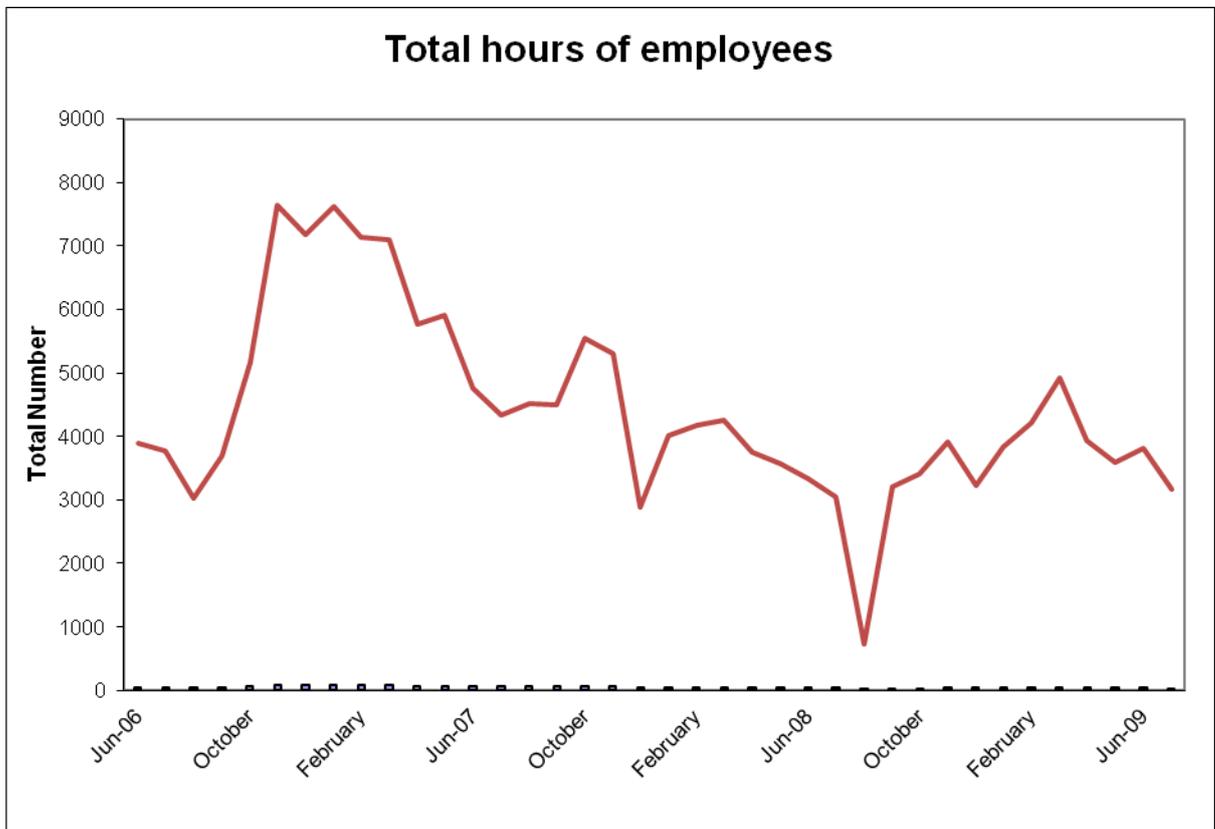
Fig. 2. Works dynamics in call center company

Our case study call center company was analyzed from June 2006 through June 2009, based on synthesis analyzed from Telmar 2000 software.
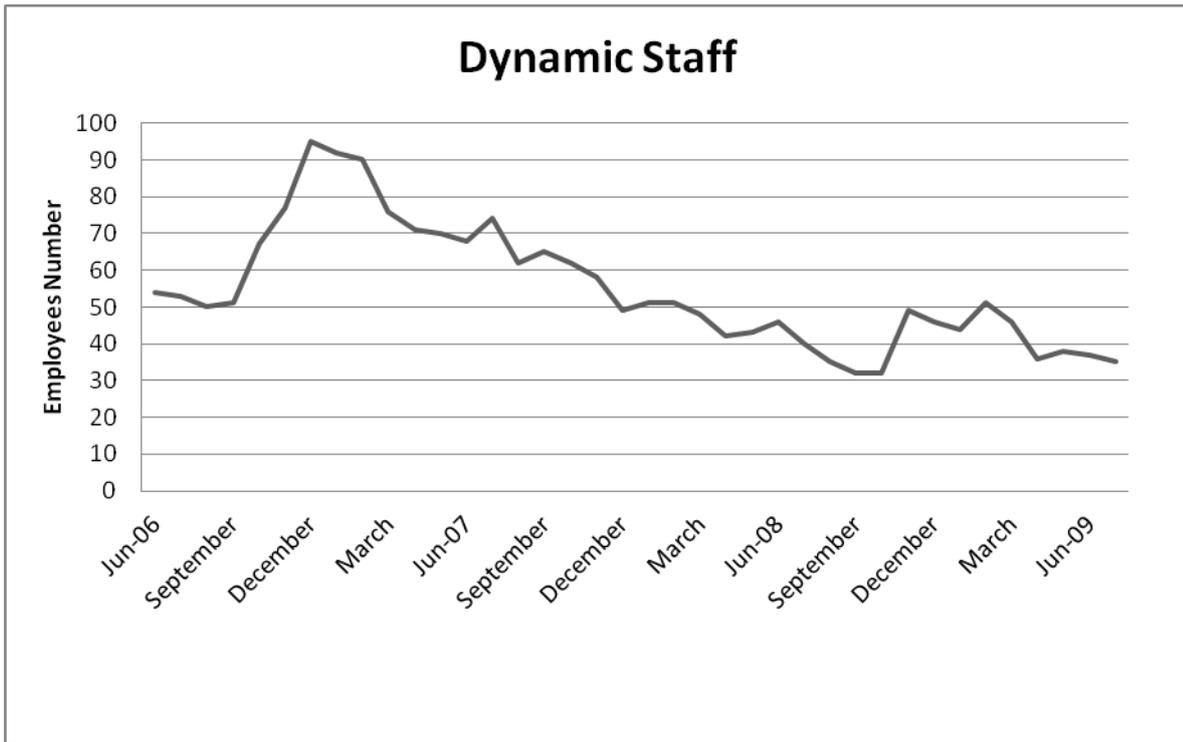
Fig. 3. Staff dynamics in call center company

Depending on number of contracts and management issues, we have a permanently dynamics of total hours worked by employees per day, and total hours worked per month, started with 3894 hours in June 2006, increasing at 7613 hours in January 2007, and decreasing at 760 hours in August 2008 (Figure 2).

In same manner staff dynamics have a similar evolution, with insignificant changes, started with 54 employees in June 2006, increasing at 77 in January 2007, and decreasing at 32 in September and October 2008 (Figure 3).
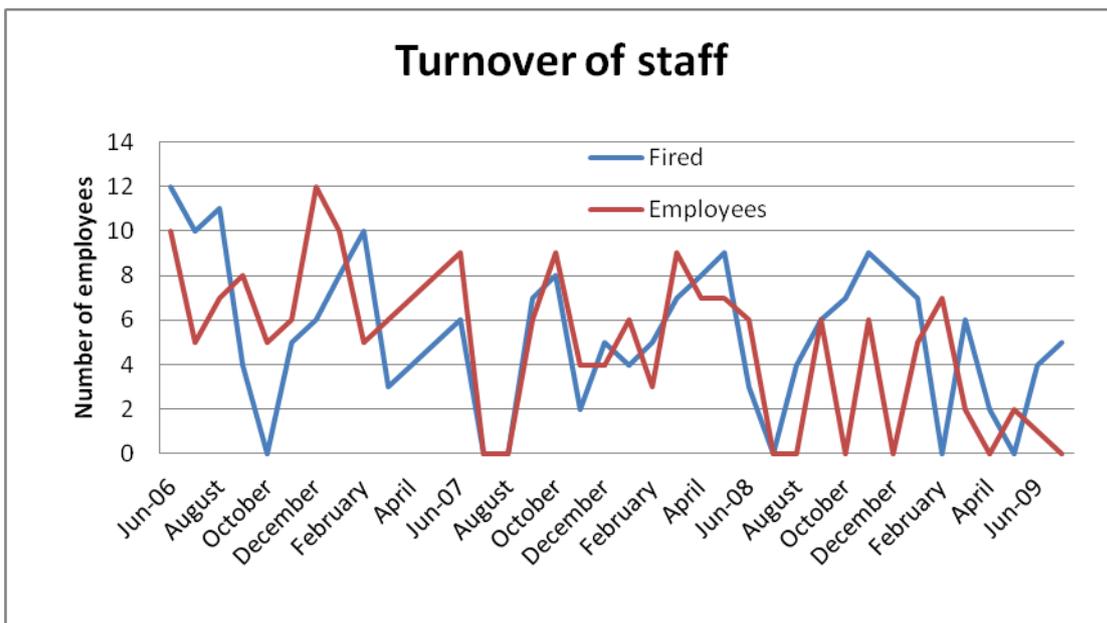

Fig. 4. Turnover of staff in call center company

Turnover the staff has a continuous dynamics, depending on company's requirements and employees expectations. For these reasons we have permanently fired and employees persons, from 12 to 0, a median value is 6,54 (Figure 4).

One of the specific activities of a call-center, which must be taken into account in quality management organization are: the number of meetings set, the number of relevant contracts or the number of complete questionnaires provided to the customer.

They are calculated according to the campaign undertaken and customer requests. In a telesales or telemarketing campaign, it has a small number of questions in a script, while at a customer loyalty campaign there may be a script of 30 - 40 questions, to which its administration takes between 15 minutes and 1 hour.

Number of contacts that can make a call center operator in one hour each working day depends on [9]:

- Type of business;
- The complexity of speech;
- General difficulty getting in contact with the subject (receiver). If a large companies have dedicated campaigns, it takes time during the arrival of the secretary, the associate director of the company;
- Delay time for results recording.

For some campaigns is processed 150 contacts per day, the other half are enough (½) of them. The rule described here comes in accordance with the theory of "*numbers burned*". The minimum number of phone call in 60 minutes is greater than or equal to 30. If the amount processed is more than 50 numbers in 60 minutes (contacts non-utile), this means that the operator work surface, or in a specific call center language "*spin numbers*". Operation of 30 contacts per hour, provides a contact rate of 25% of useful contacts. For sales opportunities to grow and campaign objectives to achieved, the contact rate should be lower this value. For instance from 100 numbers called operator managed to talk to at least 25 customers or potential customers (25%). Profitability Campaign for both call center and customer is 100% when the con-

tact rate to 10% of the nominal positive ends, means the effect obtained must be 10% sales or future customers. If we take an example, from 25 possible customers we could have 3 customers to buy product [10] [11].

In management activity there must be considered those times called "*dead stroke*" or "*off times*" consisting in times of operating software for the following activities:

- saving information;
- save notes about conversation;
- initiate a new call.

For efficiency and profitability of the organization, the off times must not exceed 15% of the scheme, from the total time allowed for a campaign. This means - in absolute terms - that if we have 60 minutes in the system, operator can be non-operative only 9 minutes. If non-operative time is increasing, the resulting prognosis is not the same. The indicators of efficiency of call center noted:

- percent (%)of off - fall in 15% of the total time of each system operator;
- 10% contact rate, i.e. nominal 100 call ends with sales to 10;
- Meetings per hour = Total Meeting / Total hours worked (to be within the time specified by the client, somewhere over the value of meeting 0.35 per hour).

These detailed indicators can be seen in Table 1 and Table 2. Following analysis of data listed, in we note that:

- Although a campaign B meetings are growing as many in the campaign, people uninteresting in B are almost doubled compared to A quantitative
- Missing numbers in campaign B are 1.5 times higher than in the A campaign; B campaign recalls are active in the campaign to 10% below those of the A campaign;
- Contacts are broken 4 times in the campaign A against Campaign B;
- The sum of these already have customer contact and are substantially equal in both campaigns;
- Contacts are at a level of 2.5% in campaign B compared with almost 9% in the campaign A.

Table 1. Contacts status of two campaigns

Explanation	Champagne A		Champagne B	
	No.	%T	No.	%T
Meetings	48	1.62	483	0.83
Contacts	257	8.68	1442	2.48
Contact broke	436	14.72	381	0.65
Recall bankrupt	107	3.61	6997	12.02
Outside Target	0	0	1943	3.34
Already Customer	43	1.45	417	0.72
Already contacted	36	1.22	1399	2.4
Uninteresting	1085	33.63	36697	63.05
Phone number nonexistent	269	9.08	7146	12.28
Active Recall	681	22.99	1293	2.22
TOTAL CONTACTS	2962	100	58201	100

We use two series: number and percent of time (%T) for our comparison, then we can analyze global statistic of two campaign using data from Table 1 and Table 2.

Even total meetings are greater in campaign B (53) compared with campaign A (489), we can see same proportion in other indicators: *no-answer, busy, active recalls, already customer*. In campaign B we have 1960 outside target and in campaign A we have none. If we compare *Other telephone's status* in both campaigns we obtain 29,94 times increase in campaign B (183848) during we have 6822 in campaign A.

Table 2. Global statistics of two campaigns

Explanation	Campaign A	Campaign B
Contact broke	436	377
Recall bankrupt	36	2784
Phone number nonexistent	342	11320
No answer	3394	117047
Busy	1037	9070
Active Recall	1577	43250
Meetings	53	489
Uninteresting	1085	36649
Already contacted	36	1396
Already customer	47	417
Outside Target	0	1940
Total calls made	8043	224739
Useful Contacts	1221	40891
Other telephone's status	6822	183848
Total meetings	**53**	**489**
Total Time	16089	449453
% off	12,83%	13,12%
Hours / campaign	**125,19**	**4225,25**
Meetings on total hours = meetings / hours per year	**0,43**	**0,11**

Since the number of meetings per hours (on the amount of 0.43) in the campaign A to campaign B, which has only an amount of 0.11, we conclude that A is more effective campaigns. Although it has a few hours per campaign (125,19 to 4225,25 in campaign B) first campaign is more effective, even if both are fitted in percent (%) of off below 15% (12.83% for Campaign A and 13.12% for Campaign B).

5 Conclusions
We focused on call center companies as a potential for facilitate the communication in collaborative companies, especially for monitoring and management customers, product and services.

For our prototype we have adapted business model developed in 2007 by Keskine et all and we pointed stakeholders and shareholders according to services oriented approach in call center companies.

As a software solution we described Telemar 2000 with modular structure and specific functionalities. The application is object-oriented based on built specific classes grouped in packages, according with conceptual modular client-server model. We examine several and some specific features including email, fax/phone interface, script creations, call center monitoring, messaging server, log analyze as a specific management module.

Based on this features we analyzed several efficiency indicators, using a case study company and syntheses data from past three years and two campaigns.

Employer's movement depends on several factors: company policy, employers' expectations, salary, features of call center operator.

Call center efficiency and management is fit to customers requirements, and depends on scripts, market target and call center employees.

Furthermore with multiple possibilities for improving results with other complex questions, we can use this system in monitoring and optimization collaborative appointments and cooperation between companies, monitoring products and services in companies.

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