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**COMPARATIVE STUDY OF E-CRM SOLUTIONS WITH FREE SOFTWARE AND
IMPLEMENTING THE MOST EFFICIENT IN THE COMPANY IT- SERVICES**

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COMPARATIVE STUDY OF E-CRM SOLUTIONS WITH FREE SOFTWARE AND IMPLEMENTING THE MOST EFFICIENT IN THE COMPANY IT-SERVICES

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Abstract It is to conduct a comparative study of E-CRM solutions through a developmental sequence begins with the theoretical basis on methodologies, definitions of E-CRM, functions, evolution, benefits, trends that exist today and the impact that occurs when using an E-CRM tool in a company, continues to analyze the business environment of the enterprise IT SERVICES through diagnosis PEST and current situation of using the SWOT tool to identify the situation of the company environment that develops and proceed to the identification and interpretation of the three tools Apache OFBiz Opentaps CRM, Sugar CRM and CRM Vtiger of which will be chosen the best alternative that supports customer processes, presales support, after sales support sales, marketing, ecommerce. To perform a comparative analysis of E-CRM tools, based on parameters valid comparison, once selected proceeds to the enterprise deployment, reaching the design and implementation of the management model customer, which qualifies efficiency in business processes. And we finish with drawing conclusions about the tools, processes and achieved results.

Keywords.- E -CRM, Customer Services, presales, sales.

1. Introduction

E-CRM whose initials Managing customer relationships online, large companies are acquiring a considerable competitive advantage through the use of Information Technology (IT) and e-business to analyze and manage the relationship with each customer. For many large companies, there is a significant trend. Because it allows the employer to maintain a close relationship with the customer loyalty, pre and post-sales tracking, sales support staff, conduct personalized marketing.

Most IT based changes that introduce large companies are eventually adopted by smaller companies, the corresponding software packages tailored to the needs and budgets of Pymes as on the updates free software packages developed that reduce expenses. Therefore, any Pyme that plans a comprehensive strategy for the medium and long term must consider whether it is

likely that some aspect of CRM Internet is relevant to that strategy. The ability of large companies to provide a comprehensive service to clients may partially undermine one of the competitive advantages enjoyed by Pymes, namely their ability to provide a more personalized than their larger rivals service.

2. Materials and Methods

The widespread use of the Internet has led to large medium and small businesses to find new ways to reach new customers, keep their own and meet the needs of the acquired after a service, they need submerged the E-strategies CRM (Electronic - Customer Relationship management) which means the management of customer relationships becoming an essential part in the performance of the company

Strategies E-CRM allows to use all electronic media to administrate the relationship with the customer such as internet, e-mails, websites, instantaneous message, it allows the company to have a special software that achieves keep organized information relating to customers, in order to be able to perform analysis and accurate assessments, which come the company succeed. Strategies E-CRM enable you to use the benefits of a traditional CRM using the network environment, that is to say, intranet, extranet and Internet together with E-CRM which includes all forms of managing relationships with customers using technology information (IT).

As above explained the E-CRM is based on the so called CRM INDICARE CRM types currently used:

Strategic CRM: Proposes the orientation of the company customer base considers organizational activity providing value to customers by understanding their preferences and by targeting and personalization of your offer.

Analytical CRM: Relative to the storage of business information (data warehouse), process modeling and exploitation (or reporting) of available

information. With analytical CRM may indicate that happened through a report of actions, identify the causes of the results of the campaign, and predict what will happen in terms of predictive models.

Operational CRM: Relating directly with business processes in the company. Work on 2 fronts back office or organizational processes represent the truss of business with which the customer does not contact. It supports the coordination of the value chain of the company, and front office or business areas that come into direct relationship with the customer.

Collaborative CRM: brings the latest technologies to manage the relationship, especially in the presale (Customization web, in a telephone call, etc.). A collaborative CRM should display relevant information to the client.

The E-CRM strategies are being adopted in companies wishing to survive in a highly competitive market and increasing loyalty and customer retention through customer satisfaction. In the life cycle of E-CRM we can highlight the three processes:

1 Data collection: On customer preference information in an active and passive ways through website, e-mail, a questionnaire.

2 Data aggregation: filters and analysis of the specific needs of the company to meet its clients.

3 Customer Interaction: According to customer needs, the company provides them the right information.

As we can verify the essentials of E-CRM consists in the quantity and quality of information it has about the client, with which it is possible to address the need arises.

Now you need to verify the extent that our strategy will according to the functionality of the services we provide is planned.

Foundational Services: This includes the minimum necessary services, such as the effectiveness of the website and the responsiveness and order fulfillment.

Client-centered services: These services include order tracking, configuration and customization, as well as security and trust.

Value added services: These are additional services such as online auctions and online training and education.

Some articles of the internet often mention that CRM strategies are the same as E-CRM, being actually complementary because the CRM is the foundation of E-CRM is a broader philosophy and enhanced for clarity verify the differences between E- CRM and CRM

The client must download different applications to display. Would have to be rewritten for different platforms	Use the browser
Displays individual custom views based on purchase history and preferences. Individual has the ability to customize the look.	Opinions differ on the basis of the hearing, and custom views are not available. Individual customization requires changes in the program.
Created for internal use, designed based on the role and work products. Web applications designed for a single department or business unit.	Created for external use designed based on customer needs. Web application designed for using across the enterprise.
Longer involved in the implementation and maintenance is more expensive because the system exists in different places and on different servers	Reduces time and costs. Implementation and maintenance will be carried out in one place and on the same server.

Table1. Differences between CRM Y E-CRM

This comparison took into account the early CRM, today most CRM solutions became manageable through a WEB server, in order to improve their services in the companies.

Today we can find a number of E-CRM strategies in both commercial and free software market as we will list some of them as the best known:

- SUGAR**
- HIPERGATE**
- VTIGER**
- APACHE OFBIZ OPENTAPS**
- COMPIERE**
- CUSTOMER TOUCH**

For its functionality and according to the business that targets are the most used according to the query executes on the web. Which for our study we selected three:

SUGAR.- is a free software application developed in PHP and MySQL, has a free version with limited solely to small businesses. It owns the Portal, calendar, activities, contacts, accounts, interests, opportunities, cases, failures, documents, e-mails, campaigns, projects, news, boards services. It is multilingual and has documentation in English, Spanish.

CRM	E-CRM
Born of a more centralized idea internally in the company	Using all the traditional methods in addition to Internet, email, wireless technologies.

VTIGER.- is a professional tool for business management. With it you can manage all facets of an SME. Developed in JavaScript, PHP, Visual Basic, you can work with database like MySQL, PostgreSQL, ADOdb. User friendly interface, available for several operating systems, good post, good documentation in different languages.

Apache OFBiz OPENTAPS.- the application is developed in JAVA, the free version is complete, has advanced e-commerce services, catalog management, promotion management and pricing, managing purchase orders, customer management, warehouse management, automatic movement of stock, accounting management, process management, content management, point of sale, and others. It includes all business processes that can be installed into modules separately. The main disadvantage of the application is the unfriendly user interface has a number of menus that cause confusion. The complicated installation must be by encoding in DOS, and there is documentation in English.

As It has many advantages the use of E-CRM strategy can have some disadvantages due to the collaboration that involves taking out a project of such magnitude:

Benefits:

Effective.- application helps us achieve efficiency in business processes and collaborating directly to get new contacts and provide information to group sales with improved adaptation of the sales cycle.

Saving.- can verify decrease in cost of selection, contact, customer acquisition and retention as well as cross-selling.

Intangible.- improves customer service with the carrier.

Disadvantage:

The biggest disadvantage to implement E-CRM implementation is the lack of commitment by staff in the management of the strategy, as we can verify if the project is successful we need to start with gathering as much information as well as the updating and maintaining it, neglect activity can cause serious problems in the company, and is a tool that must be nurtured throughout the enterprise. To clear the operation of the CRM strategy we can conclude that an E-CRM is a set that brings both technology and human resources, thus enabling to obtain an absolute integration of information that offers the possibility of establishing an efficient communication with customers of the organization in order to respond adequately to the needs and preferences.

The application of E-CRM system requires significant changes not only in trade, but also the internal culture of

the organization, which not only investment in equipment in line with this system is necessary, but also in training company personnel.

2.1. Function Blocks.

Buying behavior.

It's the online business strategy based on upselling (sales strategy for the customer to buy a more advanced and sophisticated product or service) and Cross selling (Sale of complementary items).

Segmentation navigation and analysis.

To start working with the E-CRM strategy is important information regarding collection navigation of web client. The customer leaves trail of his navigation system, information collected through techniques of Web Tracking (log files of the web server and additional applications) and analyzed using techniques of Web Mining (Data Mining applied to Web) whereby, the knowledge of their behavior is improved, allowing customize a policy to offer products and services tailored to their needs and interests. This same information is also used to implement techniques Up-Selling, or those that allow customers who have purchased a product increase their volume of purchases becoming profitable customers. And Cross-Selling, or cross-selling (is the sale of other different products to the customers with whom the company already has good relations and know their preferences).

MANAGEMENT WEB SITE AND CONTENT

You must handle an actual site with interesting information visited by different segments of people.

It is the business strategy based on applications, that is to say they should try to respond to all requests by telephone, internet, e-mail so the customer will satisfy his request.

2.2. Members of an E-CRM

On the business side for a E-CRM strategy functions correctly and has the expected success lies directly on the human element that has, as it can be verified in the following figure:

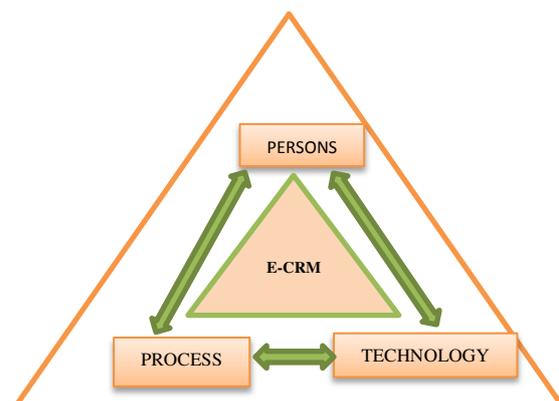


Figure1. Member of an E-CRM

The E-CRM strategy is based on three elements:

people who are the main doorway as they will manage the basis of the application information technology: highly dependent on the technology that incorporates this will depend on the iteration of the client application and business processes involving the use of implementing each activity is contemplated organizational behavior.

2.3. Related business areas in an e-CRM

In many companies suggested that a project E-CRM disagreement in which people think that direct responsibility is of the members of the IT department, somehow lies are responsible for the technical operation of the strategy but not the essentially the same, it seeks to understand that the implementation of a E-CRM strategy involves all business functions:

DEPARTMENT MARKETING.- you can facilitate the execution of campaigns, web positioning, facilitating concerns, seek new markets

Sales.- can check Traces visits to products, client integration, cross-selling deals.

SERVICES AND SOPORT.- Issue tracking and customer cases, Tracking on line.

Directors.- Review and control.

As we can verify it involves the entire business structure, but also worth understanding the processes which work directly in the E-CRM.

AUTOMATIZATION OF THE SALES: Provides access to critical customer information and tools to improve their ability to effectively sell and also manage their time to the sales force.

MARKETING AUTOMATION OF ACTION: It provides marketing departments the tools to manage campaigns, generating initiatives and Datamining (extract information from a data set into an understandable structure for later use).

CHANNEL MANAGEMENT / MANAGEMENT RELATIONS PARTNERS: Extends CRM capabilities to the needs of extended sales channels such as distributors and value-added resellers (Franchise).

Internal Help Desk.- Supports to internal users through applications covering management and network support, registration and call resolution, and support internal customers.

Support Staff Sales.- The seller can access the catalog information from anywhere.

Ecommerce.- customer accesses to the company through an on line store.

To complement needs to indicate basics about a

company to make the strategy work.

A company is an organization, institution or industry, dedicated to activities with economic or commercial purposes, to meet the needs of goods or services of the plaintiffs. Essentially a public or private oriented marketing goods or services-profit entity.

An Pyme answers acronym Small and medium enterprises, which according to its turnover, capital, number of workers, and its level of production or assets shows typical of this type of economic entities characteristics, according to local items can verify that a large percentage of Pymes in our country engaged in different activities:

- Wholesale and retail.
- Agriculture, forestry and fishing.
- Manufacturing.
- Construction.
- Transport, storage and communications.
- Real estate and business services companies.
- Community, social and personal services.

For the strategy E-CRM implementation success in a company should design some aspects:

1) Defining the vision and goal of E-CRM

Here you must define what the company expects to obtain from the implementation of the solution.

2) Definition of E-CRM strategy: the key is rightly define the positioning of the company in each of the customer segments, analyzing the existing competencies and skills necessary to achieve the desired positioning. Similarly, should develop a timetable for implementation of the tool.

3) Introduction of organizational changes in people and processes:

The organization will notice how is necessary to change the organizational structure, processes and philosophy of internal staff organization and a customer-oriented company will be achieved. The processes should be redefined to the extent necessary to improve their effectiveness and efficiency, giving priority to those who have more impact on customer satisfaction. At this point, technology will play a key role.

4) Information: the organization must collect and organize all the information of the company in order to make proper use of it and to integrate it into the tool in a successful manner.

5) Identifying and establishing good practice for the management of information: the organization must develop "customer intelligence" (customer intelligence). Thus you will get to know more customers, initial step to implement a comprehensive strategy for E-CRM based on knowledge of customers and developing products and

services for you.

6) Technology: once defined, all business objectives, processes, organizational structure, it is appropriated to decide when technology. At this time, the organization needs to know exactly what the needs of business you have, for thus to choose the best technology solution tailored to your specific needs.

7) Monitoring and control: it is necessary to define indicators to control the results and making decisions accordingly with these objectives.

Once you know what the company needs is now necessary to know the client:

A client can be a company or individual who engages with our Pymes to purchase a good or service offered by our company, allowing earn an income.

You can consider various types of customers:

Agents: do not buy products and services, however, control the relationships among organizations and end consumers who buy their products.

Beneficiaries: are in many industries, are people who want information to offer any benefit that can convert client, although not all companies can collect all the information they want on beneficiaries.

Competitor / Associated.- organizations are taking a growing interest in the competition they have in their sector to the point that may even include competitors in their own definitions of "clients" because under certain conditions a competitor can become on a client or a "business associated".

Employee.- An employee is someone similar to a client agent. Most companies developing a definition of customer include its own employees in this definition

Guarantor: A guarantor is an individual or organization that submits or provides a guarantee for the repayment of a loan.

Provider.- A provider is a type of client that increases in importance as technology enables companies to provide electronic access to information through mobile devices and the Internet.

Now one type of customer from who we will talk very frequently in the use of E-CRM strategy. He will be the prospective client:

Prospect.- is a type of client that arises when an organization effectively tracks and uses the names you got or bought lists or his own crusade information. Some marketing tactics include sending letters or mass emails to lists of potential consumers of their products, and then try to measure the degree of acceptance of its products and services among these potential customers, so it is quite common that companies manage the concepts of

"clients" and "prospects".

Once the company has won a customer has a life cycle that meets the company:

When a customer checks, evaluates, decides to buy the product or service of the company. At this stage it is known as the "Time of Customer". Once this phase passes then turns into a real customer. From here we must consider time product delivery, sale of complementary or additional products, and reentry lifecycle, that is to say want to buy other products.

The process of customer life cycle falls into the following broad categories:

Phase Commitment: the efforts of the organization to ensure the attention of a leaflet, the latter is provided with information on the company and its products and / or services, and finally it engages in a dialogue designed to move in phases CVC.

Acquisition Phase: The simple fact that the prospects are informed about the organization does not guarantee that they will purchase products or services. It should work to educate prospects about the company, and should keep the attention of prospects to feed the interest in the products and positively influence their buying decision.

Retention and Expansion Phase: After a prospect buys your products or services and become a real customer, the real work is just beginning. Many business strategies are designed to increase customer satisfaction and seeks to lead the customer at this stage of CVC to win customer loyalty.

Phase Knowledge: The constant monitoring of customer behavior across all stages of the CVC gives the organization sufficient information and personal habits of the same data, processing, refining, study and analysis of this information will generate what is known as "know Your Customer".

Importantly, the implementation of E-CRM strategy a company has an impact within the organization, because the vision of the company should change as an essential factor to consider customer, every action must be performed in order to meet customer need.

There must be a commitment to each of the people who make the company's strict management solution, as is data entry, updating it.

E- CRM strategy should be driven by the overall strategy of the organization and the needs of clients, implemented by individuals, defined processes and supported by technology.

The main objectives of the implementation of E-CRM are acquiring new customers and recover lost

further develop and improve relationships with customers who are seeking greater satisfaction from them and an increase in sales of the company.

Business processes that are directly affected are:

PROCESS MARKETING
SALES PROCESS
ECOMMERCE PROCESS
CUSTOMER
SERVICE PROCESS

Because the E-CRM applications will be linked to all that is involved the client.

Implementing an E-CRM strategy Enterprise IT SERVICES

To start a business change Project must meet basic requirements to meet several aspects about the company, we must ask What do you expect the company's strategy?

The company IT SERVICES convinced that sustainability of businesses today lies mostly in investment in intangible asset, that is to say the quality of service given to the client in all areas define a priority, the implementation of the E-CRM to facilitate the management of customer relations, for which raises the requirements expected of the strategy:

Functional requirements:

- Availability of all Time
- Easy to Use
- Friendly environment

Operational Requirements:

- Cover expectations expected
- Direct Support Staff
- Sales Automation
- Customer support at all times
- Availability Ecommerce
- Custom marketing
- Customer Monitoring and after sales

Evaluation Requirements:

- Getting Results

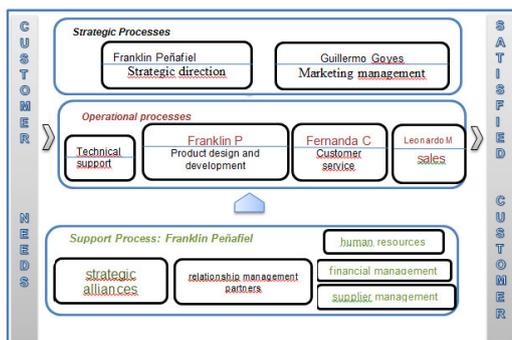


Figure 1. Process if interprise IT- SERVICES

It is important to understand the processes by which the company operates:

In the above figure can be verified that the main entrance is the client and the needs arising found all processes to meet expectations, the block of operational processes were created involving all staff of the company since they are the most important processes of E-CRM:

CUSTOMER SERVICE AND SUPPORT: The process starts from the customer enters the company with a need to meet, staff responds to your need, so check back if there was any problem. Therefore he is involved with the process of Sales and technical support, as monitoring is performed after acquiring the good or service.

SALES: In this process, the most important in the company is a fundamental pillar, the sale of a good or service is the reason of being of the company, 4 phases are verified:

1) Prospecting

Sign in finding prospective customers; that is to say those who are not yet customers of the company but have great potential to be answering the question Who can be our future customers ?, it is done by obtaining lists of prospective customers, depending on the type of activity done makes its environment.

2) The previous approach or "pre-entry"

More focused information Wanted each client to know him better as:

Similar products you currently use.

Reasons for using similar products.

Affinity brands, or the attending technician

With this information prepare a sales presentation tailored to the needs and desires of each client perspective, to proceed to make an appointment.

3) The presentation of the sales message through personalized by technology knowledgeable technical staff visits, make the client aware of:

Product features: What is the product itself, its attributes

Advantages: That which makes it superior to competitive products

The benefits to the customer: That the client looks consciously or unconsciously

It is the payment and delivery dates for finally closing sales.

4) After-sales services

In order to ensure customer satisfaction proceed to make phone calls, this is done occasionally.

MARKETING

Advertising as the marketing is done through flyers papers.

RELATIONSHIP MANAGEMENT PARTNERS

When to support staff visits the client is what makes using the phone line.

ECOMMERCE

Published on the web for products ordered.

For the implementation of E-CRM strategy need to know the business philosophy of the company IT SERVICES to which it is subject in the strategic plan.

Mission "To be a company that makes personal and business computing needs current, comprehensive high quality technology solutions that contribute to the productive development of the same, thus optimizing the cost of your business and competitive differentiation.

While the ability and willingness to create or develop new products containing outstanding levels of performance, quality, presence and influence in the market, committed to continuous improvement of our processes, together offering excellence in the quality of our services. "

As we can see the misión speaks of improving processes in order to achieve excellent quality of services, in this case has the scoop attention that the customer receives.

Vision (2015) "Being a company renowned local prestige, with excellence in service and IT support in general, where a high quality product and wherein the continuous improvement in all areas are pleasing to our consumers, of efficiently management, competitive, strategic alliances nationally and internationally, with a commitment to ensure our customers a product that exceeds their expectations, without forgetting the integral formation of its human and technological resources.

"Becoming a trust model through excellent service that exceeds the expectations of our customers; backed by a committed, successful and with a high sense of responsibility team. Be an example for society respect to a good service".

The Vision is easy to verify that seeks quality service in the service it provides.

BUSINESS GOALS

General Purpose

Develop products or solutions, with the purpose and ability to solve real business situations for development, technological developments to meet their needs and make them competitive in their labor, financial, administrative, economic field.

Specific Objectives

- Implement customer confidence and ensure their total satisfaction. Let them know that our intention is to become strategic partners.

- Keep staff up to date with the latest technologies available in the market.
- Continuously interact with organizations that choose us, worrying about their needs and opinions.
- Working with responsibility and dedication to service.
- Meet commitments.
- Highlight loyalty, the value of the word, lifelong effort and respect for our customers.
- Constantly invest in the best and latest information technology available in the market, to ensure the best quality and continuity of our services.
- Consider our people one of our most precious assets and enabling them constantly perfecting.

With this we can conclude that the company is interested in customer service and tries to direct their actions towards satisfaction and meet their needs, allowing greater openness in the implementation of E-CRM strategy organizational Structure . The company is formed hierarchically:

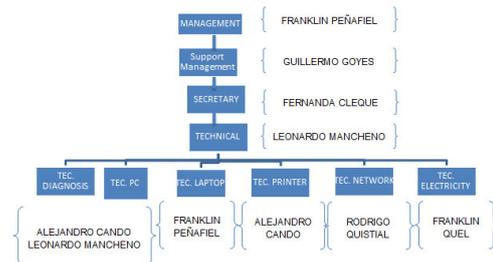


Figure 1. Organizational Structure enterprise IT SERVICES

Management (Franklin Peñafiel Ing.) Is the person in charge of handling, steering and monitoring of the establishment so as to meet domestic needs and customer generally short and medium term.

Support Management (Mr. Guillermo Goyes) is the general management support in planned activities

Secretary (Miss Maria Fernanda Clerque.) Is responsible for maintaining records of the company in order and track the work done by technicians and sellers, is the link between client company.

Technical coordination and quality control (Mr. Leonardo Mancheno):

Controlling the work of technicians, assist in controversy, repaired equipment check before handing constitutes an important filter as his main function is to monitor the quality of the product to be delivered.

Diagnostic Technician (Mr. Alejandro Cando and Mr. Leonardo Mancheno)

Responsible for receiving equipment to be repaired, evaluating the initial conditions, they are the first people who have contact with the customer, it is their responsibility to maintain the corporate image.

Technical (Tlgo Leonardo Mancheno, Tlgo. Alejandro Cando, Ing. Franklin Peñafiel, Tlgo. Franklin Quel, Tlgo. Rodrigo Quistial)

They are responsible for reviewing and repairing equipment

Seller (Ms. Fernanda Clerque, Guillermo Goyes) Conduct internal and external sales.

Company Policies of IT- SERVICES

EQUIPMENT DELIVERY COMPLETED.-

When there is a replacement of parts in the equipment is the responsibility of the technician deliver the damaged parts without exception.

CLIENT SERVICE For any event show good face to the customer, explain cordiality not enter into discussion, provide a solution.

APPEARANCE.- is the responsibility of the staff take care of their personal appearance as they are the representatives of the company.

Provide an excellent image to the company outside the establishment

Working with the proper uniform, not get inebriated

PUNCTUALITY.-Punctuality, In case of non notified immediately

CARE MATERIAL.- materials are in charge of the technical therefore should take care of the tool and assigned machines. In case of loss of the tool will be returned by the person concerned

RESPECT AND FELLOWSHIP Respect their alternate heads, collaborate with his coworkers

ENVIRONMENTAL All work within the workshop should know and adhere to the rules of sanitation and hygiene.

Organizational analysis (SWOT).

INTERNAL REVIEW	
STRENGTHS.	WEAKNESSES
<ul style="list-style-type: none"> -Ability to provide collateral equipment and services. -Availability for the sale of high-tech amenities. -Has consultants specializing in computer systems, wireless networks, call centers, technical support, etc. -Good communication among workers in the workshop and the heads or higher. 	<ul style="list-style-type: none"> - Infrastructure for Management Limited Competitive costs. -No payment diversity. -Not have its own premises. -New company in the market: - Internal control is missing. -Lack of customer loyalty
EXTERNAL ANALYSIS	
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> -Increasing demand for reliable and secure services. -Implementation of technology use in any business environment. -Technology is evolving and highly dynamic. -Growing interest in technology. - low quality services that leaves the competition in the market. - Incorporate new markets geographically distant. Alliances with prestigious brands and companies to expand market coverage and competitiveness. 	<ul style="list-style-type: none"> - High tax burden -Unfair competition - Delay in availability of goods from suppliers.

Table 1. SWOT

Thus we conclude IT SERVICES The company owns 30% = Offensive, Defensive Capacity = 17% capacity and has a strategic positioning = 24%. business analysis.

SERVICES IT (Information Technology Services) begins operations on July 1, 2011, with the ideal of providing services with high quality standards in the computer area. Our goal is to arrange a package of comprehensive services to all our customers.

From a beginning in IT SERVICES we have developed a culture of service, privileging a great vocation of service to our customers.

PEST enterprise IT SERVICES

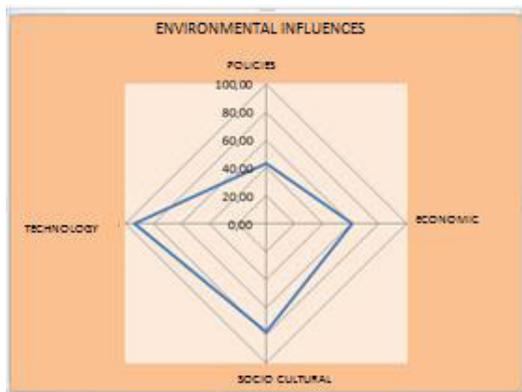


Figure 2. Influence of the report by PEST.

According to the graph we can determine the external aspects that may affect the company.

Aspect	Impact	Motion
Political	Being a private company politically shows little influence, since it is limited to taxes and laws that the company if it meets.	In case of any variation or direct involvement, should be attached to the legislation
Economic	The economic impact is medium high as there may be variations due to factors.	Improve services; create new products to attract potential customers
Social	The social aspect increases being a positive impact, because the client has become the main source of marketing and advertising	If there is a negative impact as successful would seek to improve the service and incorporating an effective marketing plan.
Technological	Innovation technology rapidly, with new doubts exist become opportunities for the company.	Given the current situation is important training.

Table 2. PEST

Analysis with the method of Porter.

Force 1. Bargaining Power of Buyers and Customers
 The market for information technology in the sector is very important, whenever there is a technological product innovation in the customer acquires no matter where they come from. If your computer has a bug and is under warranty the customer needs support so back to the store, if not possible a center that gives solution is looking for, IT SERVICES to be a new company with this service clients come for a solution, besides proofing

costs, parts, services are comfortable and safe delivery time.

In case of any threat, seeks to improve customer service, add new services to meet their needs better.

Force 2. Bargaining power of suppliers or vendors.

The purchase is made directly from manufacturers, working with original parts costs are fixed, but have guarantees. The problem arises when the local dealer does not have the parts, when international brands like Dell, Toshiba, HP, among others immediately ask the nearest country, and brand representatives are responsible to inform the delay. If process guarantees providers are authorized centers concerned with good customer service, there are several in the country depending on the brand, so it facilitates the process.

To purchase other computers are so many vendors' competitive prices, and you can opt for the cheapest.

Force 3. Threat of new entrants.

For new local competitors should have a high knowledge of procedures, policies, contacts in different brands, processes, which are achieved with years of experience in the field. Exist service differentiation, IT SERVICES is a solution company. When you are seeking alliances with local representatives of brands exemption them.

4. Force Threat of substitutes

In the computer field services cannot be replaced, but the parts used to complete the service can be replaced with Generics, which often cause serious damage to the equipment without the client knowledge until when it stops working. The lifetime of aftermarket parts can vary but always ends up being a short time because they have no collateral, and the customer chooses to replace it again and seeks security and support the brand. There are generic parts on the market, but the customer has become more demanding, to make any investment, first check what is reversing. Therefore for IT SERVICES most importantly caring customer satisfaction with original parts.

Force 5. Rivalry among competitors.

There are few companies that provide personalized support service of computers regardless of where you purchased the good, the majority of companies dedicated to selling technology and process their own warranty. IT SERVICES staff has an adequate technical training in the marks, and when seeking new partnerships with famous brands to improve service quality, without detracting from the initiative of staff plays an important role.

In the possible event of a strong rivalry is necessary to seek alliances to occupy defined market segments and become mutual support.

We have known how the company is under what conditions it faces competition, vision and mission pursued.

Now we need to see which is the best E-CRM strategy that suits its scope and organization which will be implemented in the enterprise IT SERVICES.

Analysis of free software tools.

In the field of business income information technology (IT) has become an important issue due to the requirement of customers and to maintain business competitiveness in the medium. In companies regardless of their activity the most important factor is the customer becomes a necessity to maintain the loyalty and satisfaction of it, so enter with great force E- CRM Tools that allow managing customer relationships. For this study, three tools were chosen for being the best known, used and stable its features and benefits that can be coupled to the enterprise IT SERVICES.

SUGAR free CRM.- is composed of modules, each representing a specific functional CRM process, including: accounts, activities, leads, and opportunities. Which are designed to help clients to manage accounts through every step of their life cycle.

Vtiger CRM.- covers processes prospecting, pre-sales, sales and after sales.

Apache OFBiz Apache Opentaps is an ERP, CRM and ecommerce tool distributed under GNU Affero GPL, designed for small and medium enterprises based on "Apache Open for Business", containing all the core logic of development. Features include e-commerce, POS, inventory, warehouse, orders, customer management and general accounting, which can be installed and configured according to the needs of the company.

Comparison parameters studied solutions

To measure the efficiency of E-CRM solutions will first identify the factors from an external and internal perspective to define what is the optimal solution for the company. Since the installation process up to and is in

production, which a user notes. Therefore we have used the following parameters:

Connectivity, Compatibility, Functionality, Interface, Usability, Information Available Installation, is the need to raise a very important parameter security.

Connectivity

It describes the capacity of tool that the E-CRM has to integrate with other applications, as well as the user's connection to the tool.

Compatibility.

It is the condition that makes E-CRM solution can be installed on multiple platforms without causing difficulty.

Functionality

it examines whether the E-CRM solution meets the expected functional requirements that is to say can cover the problem posed in Chapter I.

Interfaz.

It is the means by which the user can communicate with the E-CRM solution represents the complexity of understanding what each option in the E-CRM solution performs.

Usability

It refers to the ease with which people can use the E-CRM

Documentation Available.

Describes the quality of the solution usable information in different languages

Installation

Points out the degree of difficulty or ease that involves putting the E-CRM solution running.

Security

It is the demonstration that such insurance may be the software to attack by strangers, which implements assurances regarding the hosted data.

Meaning valuation.

To obtain a quantitative assessment to determine the efficiency of the selected tools is set to the following scale:

Value(*)/Rating

1 Not acceptable

2 acceptable

3 very Fair.

Connectivity

Solution	Comment	Value (*)
SUGAR CRM	The free software version in terms of connectivity does not have mobile access, integration of external mail and even import and export data.	2
VTIGER CRM	The open source version includes several modules to work seamlessly, allowing import and export data, integration with Outlook. It even allows mobile access.	3
OFBIZ/OP ENTAPS	There opensource version and commercial version, opensource version is very complete, can export data import, Mobile Access.	3

Table 2. Connectivity

Compatibility

Solution	Comment	Value (*)
SUGAR CRM	Compatible with all popular operating systems and can be integrated with database whether commercial or free software.	3
VTIGER CRM	Compatible with most used operating, Compatible systems with databases of free software.	3
OFBIZ/OP ENTAPS	Compatible with the most used operating systems, but it recommends better way to use Linux.	3

Table 3. Compatibility

Functionality

Solution	Comment	Value (*)
SUGAR CRM	Helps entire business field. It has a great user base and many project partners. But his open source version comes some modules restricted.	1
VTIGER CRM	the potentially Features. Available necessary in the free version, but has an excellent user base. Also covers the entire business process presales, sales, after sales. The customer portal for incidents must be installed separately. For the integration of e-commerce does not have free software, single commercial..	2
OFBIZ/OP ENTAPS	The potential enterprise-wide functionality, allows to associate all business departments, including CRM has great potential advantage of all its functions and building electronic commerce.	3

Table 4. Functionality

Interfaz

Solution	Comment	Value (*)
SUGAR CRM	Interface possessing very friendly, intuitive, easy to use. Furthermore the application is translated into several languages, making it easier to understand the tool.	3
VTIGER CRM	The interface is very friendly; the use of the tool is very easy. Furthermore the application is translated into several languages, making it easier to understand the tool.	3
OFBIZ/O PENTAPS	The interface is simple, but very complete, separate from business modules, module CRM user friendly.	3

Table 5. Interface

Usability

Solution	Comment	Value (*)
SUGAR CRM	Interface possessing very friendly, intuitive, easy to use. Furthermore the application is translated into several languages, making it easier to understand the tool.	3
VTIGER CRM	The interface is very friendly; the use of the tool is very easy. Furthermore the application is translated into several languages, making it easier to understand the tool.	3
OFBIZ/OP ENTAPS	The user must have knowledge of the tool to use is facilitated. But it has an intuitive menu and easy to adapt at short use. Tool to use is supplied. But it has an intuitive menu and easy to adapt with little airtime.	3

Table 6. Usability

Documentation available

Solution	Comment	Value (*)
SUGAR CRM	There are plenty of manuals, blogs, forums created by the community, in several languages	3
VTIGER CRM	They have a very active community there is enough information in both English and Spanish. It features forums, blogs that before any possible error is readily support.	3
OFBIZ/OP ENTAPS	Hay información pero la mayoría se encuentra en inglés, foros, blogs, todo el soporte en inglés, Hay muy pocas	2

	colaboraciones en español.	
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Table 7. Documentation available

Installation

Solution	Comment	Value (*)
SUGAR CRM	Installation process is more reliable and stable, is but next, next, finish and ready to use.	3
VTIGER CRM	The installation of the solution requires prior basic knowledge, no changes to files which can hinder the installation. But from there everything is easy and next question to put it into production.	2
OFBIZ/OP ENTAPS	Installation requires a lot of knowledge about the solution, encompassing presets to start the installation process and put the solution into production	2

Table 8. Installation

Security

Solution	Comment	Value (*)
SUGAR CRM	offers user-level assurances	2
VTIGER CRM	Securities Maintains user level.	2
APACHE OFBIZ OPENTAPS	contains assurances on several levels, what constitutes a reliable system.	3

Table 9. Security

same good or service purchased and the project must work with the following components:

- Time management.
- The service and customer support.
- The marketing (marketing).
- Management of executive information
- Excellent data synchronizatio.
- The e-commerce (electronic commerce).

Sugar CRM is a powerful tool free software, lets you manage customer relationships, based on the analysis conducted using comparison parameters are no restricted for opensource version and mobile access, integration with Outlook, supports and manages properties activities sales, time management features, It gives service and customer support, Marketing, manages information of executives, salespeople, being a web application kept synchronized data, but does not have e-commerce integration.

Vtiger CRM distribution of free software, with modules available in free version, its use is intuitive so the no adaptation problems. And if any problem arises community is available with sufficient documentation. It is an excellent CRM oriented to work on the web. Supports and manages sales activities, time management features, It gives service and customer support, Marketing, manages information of executives, salespeople, being a web application kept synchronized data, integrating e-commerce is trade an additional package Magento.

RESULTS

PARAMETRO	SUGAR	VTIGER	APACHE OFBIZ OPENTAPS
Conectividad	2	3	3
Compatibilidad	3	3	3
Funcionalidad	1	2	3
Interfaz	3	3	3
Usabilidad	3	3	3
Documentacion	3	3	2
Instalacion	3	2	2
Seguridad	2	2	3
Sumatoria	21	21	22

Table 10. Results of comparative

Conclusion Comparative.

Taking as a reference our posed problem describes: The drawback for companies to track customer in the process presales to after sales to ensure satisfaction of the

Apache OFBiz Opentaps with free software distribution in version 1.5.0, includes all business management module contains CRM for managing customer relationships, supports and manages sales activities, time management features, It gives service and support customer, Marketing, manages information of executives, salespeople, being a web application kept synchronized data, being a CRP + ERP has application ecommerce well integrated in oFBiz Opentaps there is much innovation and future projection, and this marks the difference from others. It should be noted that the comparison was made with the opensource versions of the solutions in the commercial versions differences.

SELECTION TOOL

The selection of the most efficient tool is Apache OFBiz Opentaps 1.5.0, based on the different analyzes performed above. This tool is most suitable (compatible with most databases and systems option for easy access from any device (from internet connectivity, integration with additional programs), deployment flexibility Operational), complementing the look CRM (function has efficient modules), user friendly (it's simple and intuitive interface), which provides easy to understand usability, maintains user-level assurances and architecture (SOA) as also for its e-commerce module seamlessly integrated. Parameters with less strength are documentation and process of installation because most of the documentation is in English what becomes difficult to research.

Now that we have the tool that is optimal to work in the company the management model has been set with which to carry out the activities by E-CRM strategy.

Management model

Objective

Keep guidelines standardized for processing customer by Enterprise Solution Apache OFBiz Opentaps, which enables staff to meet the expectations and needs of customers through their total satisfaction by providing quality service that may lead to improve the corporate image of the company IT SERVICES.

Formulation of the management model the management model includes the description of process management before and after implementation of the system looking sensitize the staff directly related to the business of the importance of the customer. What you need is graphically to illustrate how to work on each business process.

PROBLEM: NO CENTRAL INFORMATION FOR NEW CONTACTS

The information is received by any employee of the company and pointed or stored indifferent places, convenience or availability at this time.

And it appears that someone needs information about a contact or client, whether information about a phone number, email or an order.

To find information that could be just a phone number, virtually the entire company as a whole has to involve in its search, because information can be stored in different places, either in the mail from an employee or in a role of another table with two clear consequences, interrupting your work or wait and delay in delivery of information.

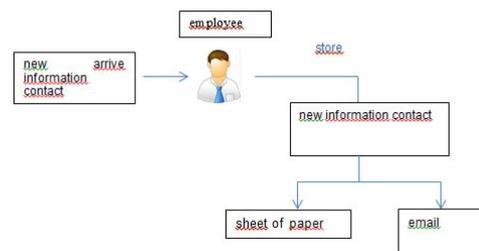


Figure 5. Information not centralized.

SOLUTION: CENTRALIZATION OF INFORMATION, THE SEARCH IN IMPROVING INFORMATION



Figure 6. Improvements in information searching.

If an employee needs information about a contact, for example, must only access the system if it is based on web technology can be accessed from anywhere with free and find the information he wants.

PROBLEM: NO SUPPORT SELLERS

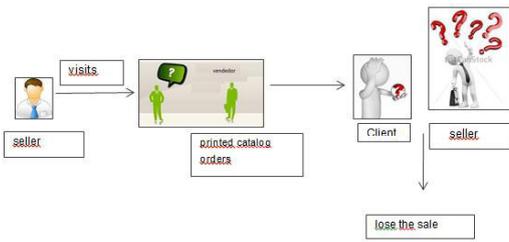


Figure 7. No support sellers.

Sales are made directly with the company IT SERVICES, as well as visiting customers usually happens when the client requests information of a product which the seller does not know, or if you know but know its stock, which ends in loss sale.
SOLUTION: VENDOR SUPPORT IN VISITING TO CUSTOMERS THROUGH ONLINE STORE

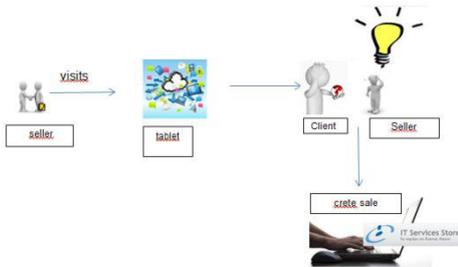


Figure 8. Support for sellers.

With the virtual shop set in which the seller may rely when making sales, consulting stock items and if there are additional catalogs with products that customers might need.
PROBLEM: NO PLANNING TASK.

The vendors do not plan the tasks, such as pending calls, emails to send, so there are delays in deliveries and services.

SOLUTION: TIME MANAGEMENT AND DATA SYNC

Calendar features, where each manager can plan his tasks, events, which facilitate you to maintain regular contact with the customer.

Being a Web application any changes you make a user automatically updated on the server, so it will not be crossing tasks, or crossing sellers with customers.
PROBLEM: NO SERVICE USED PREVENTA.

You do not have any tools to capture customer information leaflets.

SOLUTION: CAPTURE CUSTOMER SERVICE PROSPECTUS FOR PRESALES



Management of developments of information as well as social networks that allow us to obtain the highest number of emails which will be sent advertising business.

PROBLEM: NOT USED AFTER SALES SERVICE.

When a sale item or service from a team concludes the customer relationship ends then there is no aftermarket support to check if the client is comfortable with the acquired, if you come upon the customer must return the company to opt for a solution.

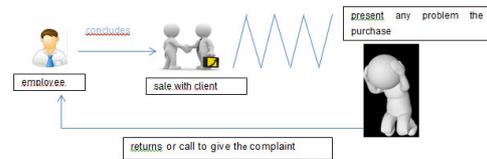


Figure 10. Postsale service is not included.

SOLUCION: SUPPORT POSTSALE SERVICE.

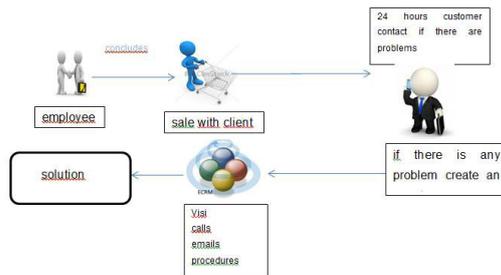


Figure 11. Improved customer service.

Once the employee concludes a sale has 24 hours to contact the customer to verify if everything is correct, if there is anything new, even if the client needs a plus, must also send an email after the sale in thankful for purchase, if the customer has problems with item or service purchased immediately will be able to communicate through the mail, and even phone calls, then the person who is communicating must create a case, depending on the severity should establish its priority to be resolved.

PROBLEM: MARKETING CAMPAIGNS ON WHEELS ONLY.

For print media campaigns using flyers, business cards, paper, has no advertising mailings that can help to improve business.

SOLUTION: PROMOTION PROCESS AUTOMATION.

Promotions depending on the client you are working will be sent.



Figure 12. Email Campaigns



Figure 13. Get feedback.

Another way to know if the client is happy with the service or acquired cases and e-commerce where we have direct communication with the client is to send feedback to measure the satisfaction level modules.

PROBLEM: THERE ISN'T SERVICE E-COMMERCE



Figure 14. Ecommerce service not available.

SOLUTION: IMPLEMENTATION MODULE ECOMMERCE.

The Ecommerce module covers the facade of the online store which clients can access from any web browser,

catalog information, products, and even make the same request.



Figure 15. Implementation of ecommerce module.

Open taps the Apache OFBiz ecommerce solution has integrated module, which can be configured according to the needs of the company. When a customer`s need is presented, he should come to the company to get it directly, with no risk of the product. Apache OFBiz Opentaps management software is to provide solutions in the area and function of the company, from the registration of a new contact or receiving phone calls and our relationship with customers in general (CRM).

With the implementation of new management software we intend to complement any description of the scope of the software.

Conclusions.

- The E-CRM solutions are an efficient pre-sale-after sales, marketing, ecommerce tool for businesses, automating the sales process support, monitoring, companies placed above the competition.
- The company IT SERVICES is an enterprise established with deficiencies in the aspect of process automation ecommerce and E-CRM, lack of software hinders the development of activities impacting problems of customer service in the field of free software is a range of effective business applications, thanks to the contribution of its employees enabling access to small businesses with low income, with the implementation of Apache OFBiz has been able to prove how essential software as support becomes the performance functions.

- Apache OFBiz is considered a framework for enterprise application development on Java technology all applications are built on a common architecture using common data and logic components and processes,

whose components are designed in three layers presentation, application and data on which implements SOAP, MVC.

- Apache OFBiz is a robust Opentaps based on Apache OFBiz adaptation-oriented domains in developing components for its architecture, flexibility and adaptability facilitates work in the field of business architecture solution, whose implementation requires an average knowledge of business logic to be a complex solution at configuration time.
- The management model proposed for using in the Apache OFBiz Opentaps solution supporting customer process represents a framework within which facilitates the understanding of the development of activities in business processes automation.
- The training process clearly supports consolidate the efficient management solution configured modules better speed, convenience; efficiency in the work assigned to the employee is displayed.

Acknowledgements

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References

- [1] Cabrero, B. (2007). *La empresa basada en las relaciones*. (2002). Madrid:- MCGraw-Hill.
- [2] Alvarez, P.(2007) *Marketing de clientes*. Madrid: MCGraw-Hill.
- [3] Campoy, M. (2010). *Como gestionar y planificar un proyecto en la empresa*. Barcelona: la u.
- [4] Cristin, A. (2003). *Crm para directivos*. Madrid: MCGraw-Hill.
- [5] Fayew, G. (2004). *Crm Customer Relationship Management Administración de las relaciones con el cliente*. Mexico: continental.
- [6] Jacker, h. (2000). *Los 7 secretos del servicio al cliente*. Madrid: Gestión.
- [7] Luzangela, A. D. (2011). *Calidad y servicio: conceptos y herramientas*. Barcelona:Ecoe.
- [8] Paul, G. (2003). *CRM gestión de las relaciones con los clientes*. Madrid: MCGraw-Hill.

[9] Ronalds, S. (2002). *Como mejorar las relaciones con el cliente*. Barcelona: Alfaomega.

[10] Vieites, G. (2010). *Sistemas de información herramientas para la gestión empresarial*. Barcelona: Alfaomega.

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