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Developing a Job Portal in Sugar CRM Using Agile Methodology

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SCSU

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by

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Abstract

The main objective of this project was to collect the data and provide a solution to the problems faced by a huge organizations, which holds the data of many diverse fields. The challenge here was to generate an enterprise level dashboard to illustrate the number of job applications for a particular domain and the applicants. Top level management evaluates or analyzes the functioning and progress of it, with respect to the Job portal developed with Sugar CRM.

Agile methodology supports a rapid, iterative, lean development style and is better result driven. The team focused on the decision driven rather than data driven. The team also concentrated on the necessities of the decisions to be made, rather than enclosing all existing data. While following this, organization totally relied on agile development and business opportunity management. This project can be useful for the executives of the company to monitor the recruitment processes effectively.

Lean Management principles have been strongly monitored while developing this project.

Acknowledgements

This Project would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to Dr. Ben Baliga and Dr. Hiral Shah for their guidance and constant supervision during my study at St. Cloud State University. I would also like to thank Prof. Gary Nierengarten and Dr. Balsy Kasi for reviewing my project.

Table of Contents

Chapter Page

List of Figures

Chapter I: Introduction

Introduction

This project is about generating an application that supports the applicants around the world to submit applications, keep track of interviews, monitoring status and finding results etc. It also helps the hiring team to make the hiring process much simpler; HR team can now use the system to sanitize applications based on minimum criteria using filtering. When an applicant is selected for the next round emails are sent out automatically reducing manual work. After each stage of screening, applicants is informed about decisions from HR team. HR team can also now keep track of interview scores by various team members. Suggestions and notes on a particular applicant can be shared with other evaluators.

Customer Relationship Management (CRM) is a system or technology that helps an organization to improve its sales, helps business to provide right information to the right person at the right time, to understand the customer need and to provide quality data. CRM also helps the organization's to retain their existing customers and helps to bring new opportunities and helps the top management to do data analysis effectively to set future goals.

Sugar CRM features a robust combination of sales, marketing, support and its platform really shines with its expert collaboration functionality, so individuals across the business can get the crucial information which is required by the people. Sugar CRM also gives users personalized access to all elements of the sales, pipeline and complete real time information in terms of integration.

Problem Statement

The organization was using Legacy Lotus Notes Application to carry out the process and it involved lot of manual processes causing it to slow down. There was a need to develop an application by using various CRM technologies like dynamic CRM, people soft CRM and sap CRM etc. But these technologies are not so feasible to develop a CRM application due to the following drawbacks.

- Cost factor
- Storage capacity
- Less flexible
- Risk factor

Nature and Significance of the Problem

The current Lotus Notes system used by the Organization has lot of flaws and requires streamlining over a new platform to increase productivity. Sugar CRM helps to monitor the progress of every department in an organization. It also helps the organization to increase the productivity and the visibility between departments. Sugar CRM helps to decrease the operating cost by streamlining the business process.

For the above significant problem the main intentions of Sugar CRM are:

- To improve the quality of service.
- To achieve out-of-box functionality.
- Making the business totally automated.
- Scalability.

Objective

The main objective of this project is to develop Sugar CRM Job Applicant Portal that makes everything automated and user friendly. It also helps to monitor the progress of all applicants for better and faster decision making and understanding of the problems.

Objectives of this project are:

- To develop relationship between various objects.
- To provide extensive customer support management.
- To make the application totally automated.
- To highlight quality problems and determine areas for priority attention.

Project Questions

The following questions will be answered at the end of the project:

1. What can Sugar CRM do to help in automating the current system?
2. What are the roles of Workflows and Apex classes in the development?
3. What can be done to improve quality of data received?

Limitations

1. Plug-in and integrations are still lacking compared to some of the larger CRM vendors out there.
2. During testing, we noticed with issues of speed and overall reliability.

Summary

Effectively engage with the customers regardless of device and it also has to automate; optimize even the most complex business practices and highly customizable CRM platform based on the open technologies

Chapter II: Background and Review of Literature

Introduction

This chapter will explain the background related to the project and research area where the project is conducted. Literature related to project problem and literature related to methodologies used to conduct the project is discussed in detail. This chapter will provide readers, a complete and broader aspect of the project.

Literature Related to Problem

Sugar CRM is easy to use, user-first design and it helps for better growth of business. It doesn't have the hidden costs, or lock-ins and it is also flexible to deploy and customize. CRM synchronizes with applications of Gmail, Microsoft Outlook and Sales analytical which allows users to keep information from the consisting sales representatives of the organization. The main goal of Sugar CRM is to reach all companies which are in need of some elements like strong, popular and straight forward CRM without too many bells and whistles.

Sugar CRM connections are displayed as below process:

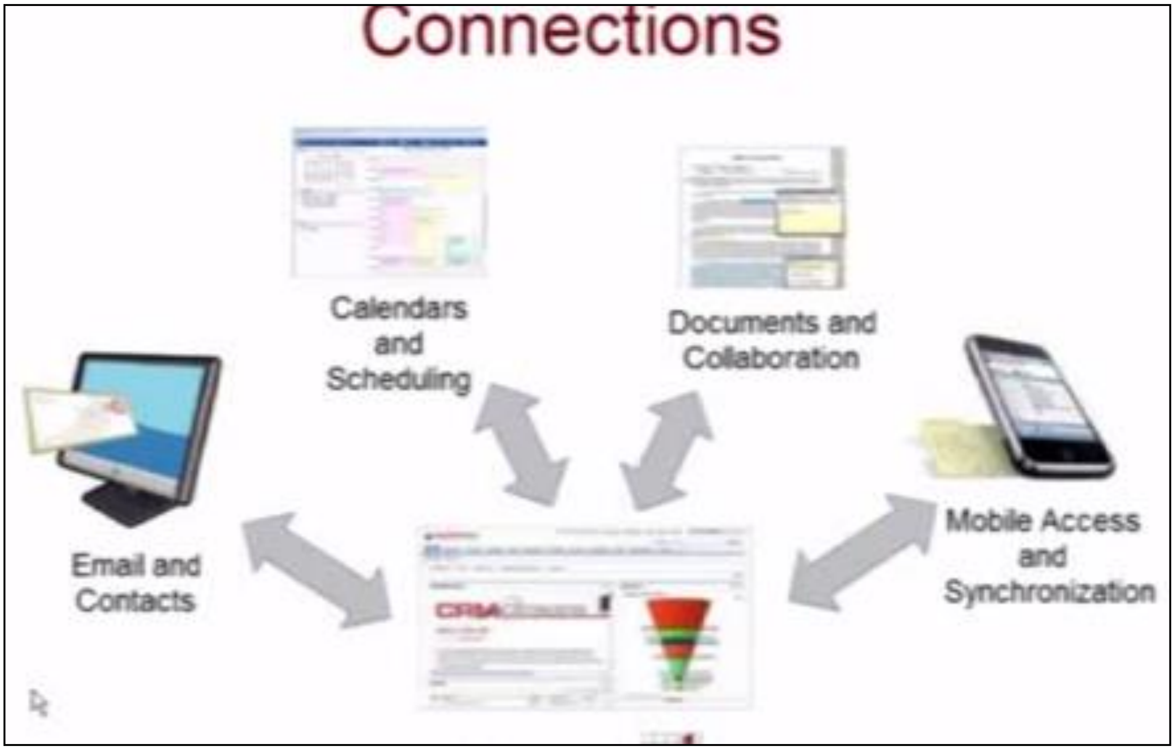


Figure 1: Connections (Fredricks, 2009)

Figure1 describes how CRM can collaborate with various other applications like Email, Calendars and Mobile Apps.

There are mainly three types of CRM software.

1. Operational CRM.
2. Analytical CRM.
3. Collaborative CRM.

Operational CRM. This CRM stream lines the business purpose. Main purpose of this CRM is to convert leads into contacts and accounts. It includes sales automation, marketing automation, and service automation. Its main functionality is to acquire new customers and deal with existing customers for the standardization of organization. It meets customer in such way that it accounts for better sales and improving growth of organization.

The operational CRM consist of these main features:

1. Easy to understand: The people using CRM can easily understand how the process is going in this particular module.
2. Ease to use: The use of CRM is made easy that the particular customers of the organization can get the things which are performed in this particular mode of operation.
3. Become invaluable: CRM becomes invaluable for people using this as it makes their job of operation easier when compared to other modules.
4. Create high data quality: The data quality of the system is high and the people in this mode of operation can get to know the data which is present in the operation mode.
5. Adopt best practice: Better quality of data makes people adopt for better practice at this stage of operation.

The above mentioned modes of operation makes the organizations get better centric with their customers and also for the better interaction with them.

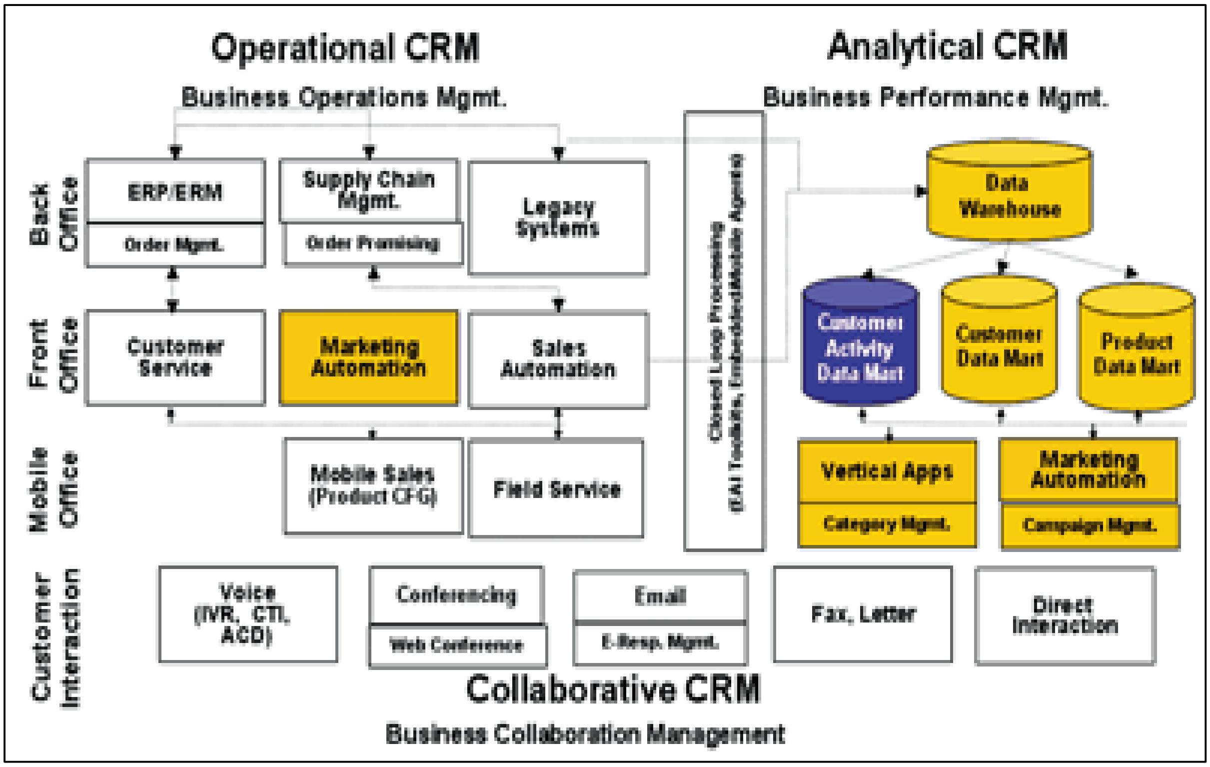


Figure 2: Flowchart of Operational CRM (Fredricks, 2009)

Figure 2 gives an overview of Organizational CRM. A flowchart is presented which depicts various stages.

1) Sales automations help an organization to automate sales process. It deals with existing customers and helps in acquiring new customers. It mainly includes
   - Lead management
   - Contact management
   - Quote-to-order management
   - Sales forecasting
   - Create opportunities

2) Marketing automation is to find out the best way to offer the products and approach potential customers. This includes,

   - Campaign Management
   - Generate Leads

   The campaign management consists mainly for growth of organization as connecting people in different formats such as following:

   1. Social media
   2. TV ads
   3. Banners and seminars
   4. Email
   5. Phone call
   6. F-2-F meeting

The pictorial representation of campaign channels is shown below:

Service mechanization enables industry to maintain customers by providing the best quality of service and building a strong relationship. This includes,

- Issue management
- Customer call management
- Service label management
- Conduct trainings

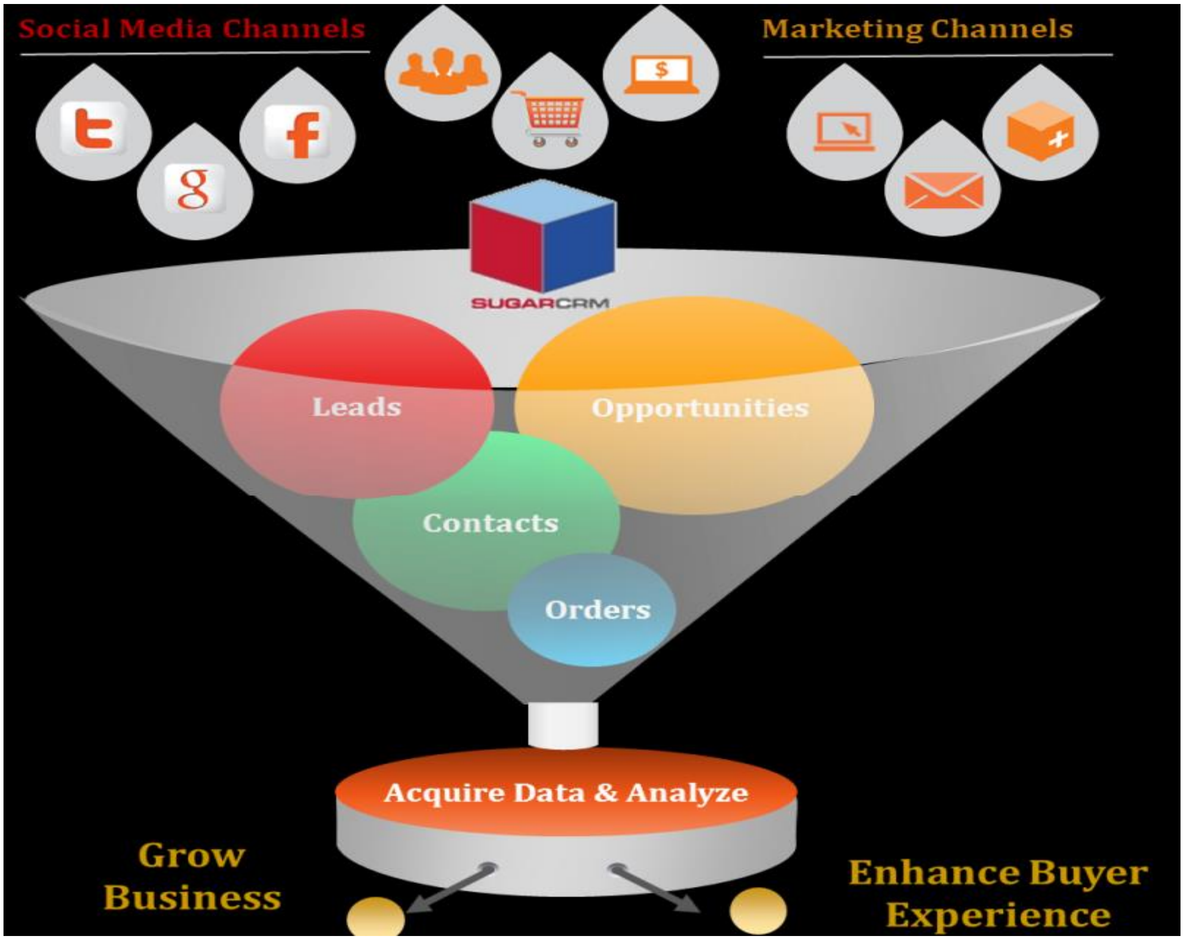


Figure 3: Sugar CRM Platform (Fredricks, 2009)

The above picture shows the CRM capabilities in handling orders, contacts, leads and opportunities.

CRM also provides the following functions to customers:

- Retains existing customers and brings new opportunities.
- Helps top level management to do analysis effectively to set future goal.

Sugar CRM solutions:

- Advanced lead management: Deliver a closed programs which can have an awareness for the consideration of purchase.

- Social CRM: Create a social CRM which enables for a better support with customer and gives an option of self-servicing.
- Transformative shopping: Content rich Social experience to seamlessly connect to the order.

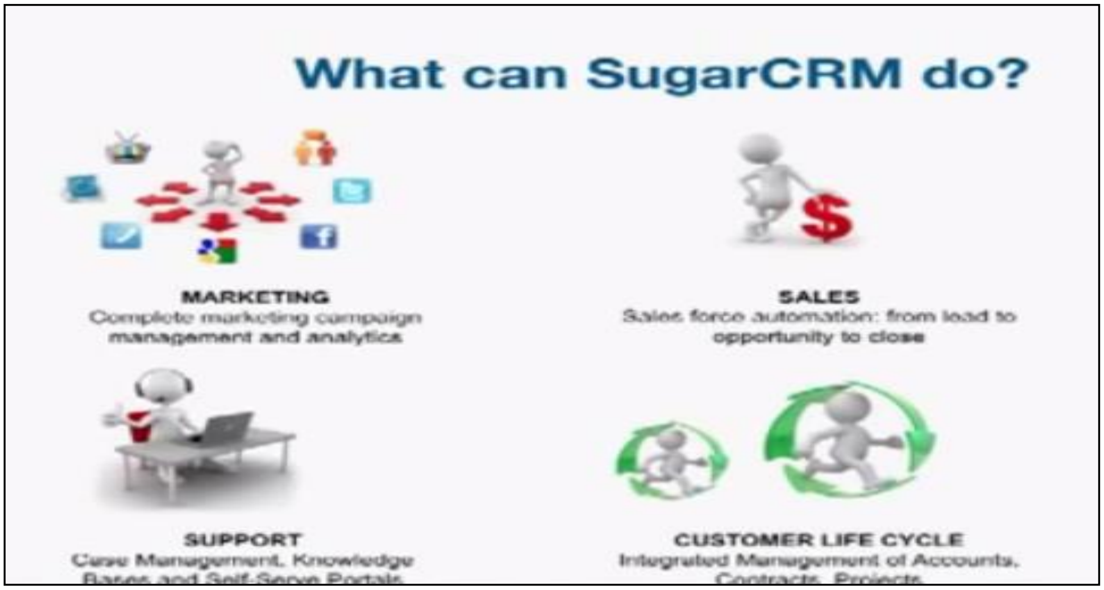


Figure 4: Sugar CRM Benefits (Whithead, 2006)

Figure 4 describes the Sugar CRM helps in each field if Marketing, Sales and Support.

Types of Coding used in Sugar CRM:

Schedule apex: A regular apex code gets executed online and there is mechanism through which an apex code can be scheduled for execution. This can be achieved by implementing an interface called schedulable interface.

Dashboards:

- Display information
- Enabling analysis of a group records

- Available at entry level
- Homepage and intelligence panes (list view, record view)

Activity streams:

- Social
- Contextual conversations about records in Sugar CRM
- Tag users and records in posts

Searching and Filtering:

- Global search
- Module search
- Compatibility across devices.

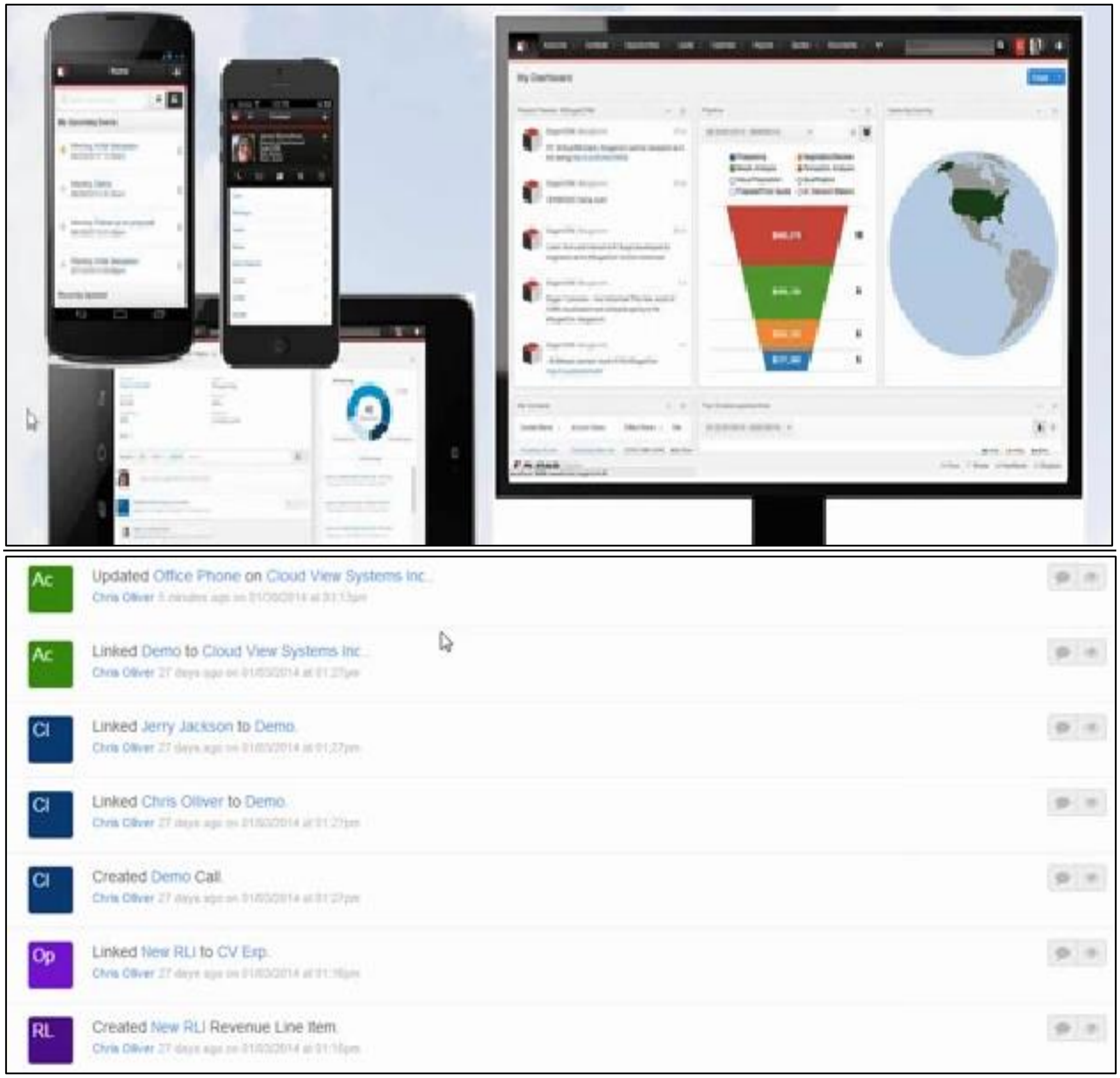


Figure 5: Sugar CRM Mobile Module (Open Source Guide, 2004)

Figure 5 depicts the social collaboration of Sugar CRM and its mobile applications.

Analytical CRM. It analyzes customer data, coming from various touch points, to get better insights about current status of organization. It also helps top management, sales department and marketing management to evaluate its success of a particular activity or a particular group engaged and is also used to set goals or rules, for objectively accessing the achievements and to provide feedback on any unwanted variance between achievements and goals.

Improves the CRM system for its effectiveness and also focuses on some of the objectives.

To provide the differentiation between analytical and operational CRM we can get the results as following:

The operational and analytical CRM helps us to think how the scope of the current CRM and how to implement and clarifies its data in CRM and helps us group using the main technology of CRM by knowing their requirements for product.

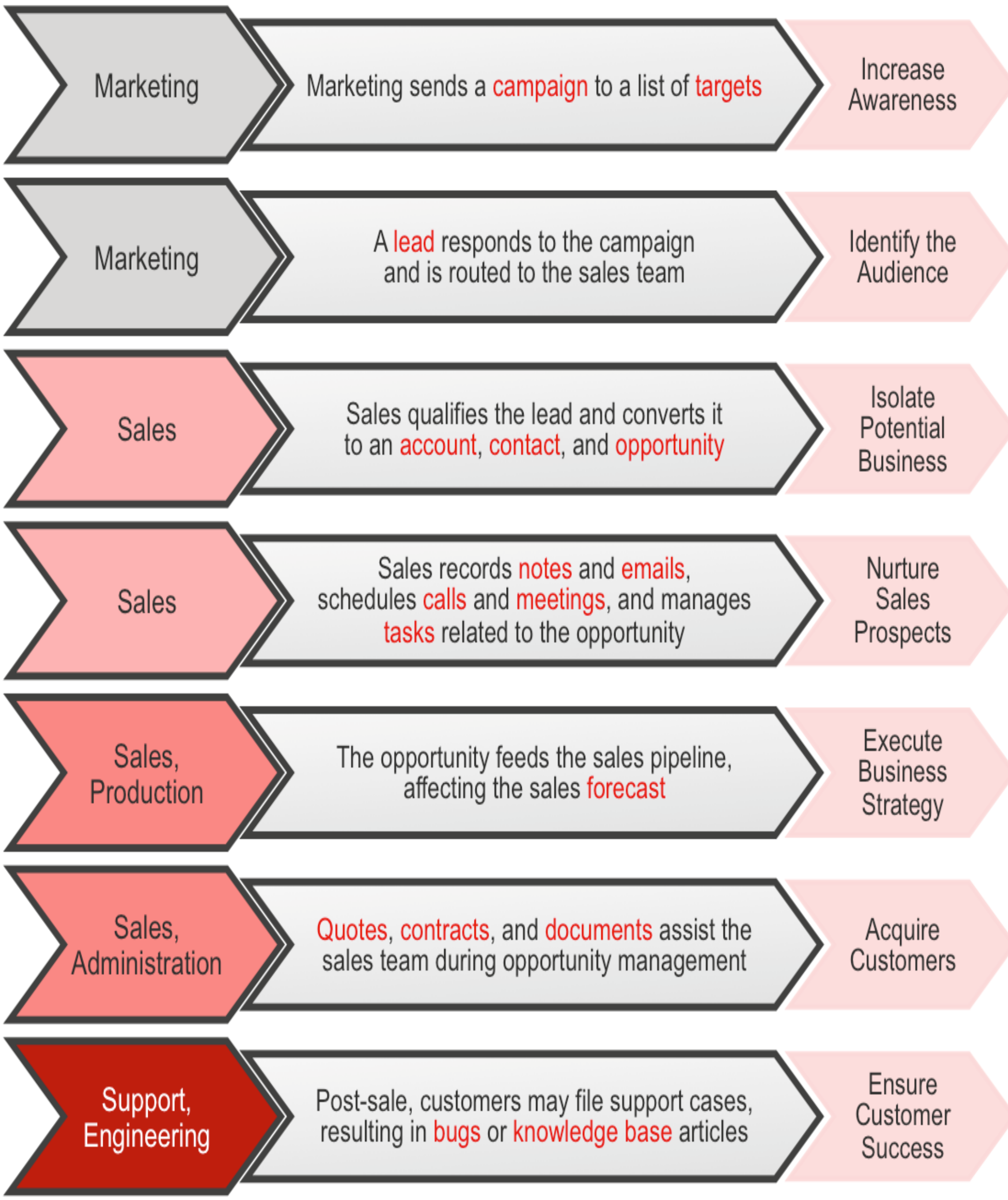


Figure 6: Flowchart of Analytical CRM (Fredricks, 2009)

The above image describes the Analytical CRM starting from Marketing, Sales and Support.

Collaborative CRM. It helps an organization to share customer's information among various business units like sales team, marketing team, technical and support teams etc. It unites all groups to maintain a common goal which is to use all information to improve the quality of service and acquire new customers to increase sales and loyalty.

The collaborative CRM must consider mainly the following terms:

1. Stop assuming everyone is social.
2. Show your value internally.
3. Social media management is not the same as community management.
4. Creating value is not the same as creating content.

Things customer service should consider into action they are:

1. Ability to be accountable for customer service experience, customer service is bigger.
2. Phone skills are still important, statistics tell the tale.
3. Most important person is the person you are talking to right now.
4. Don't assume someone else will answer the question, be the one that answers.

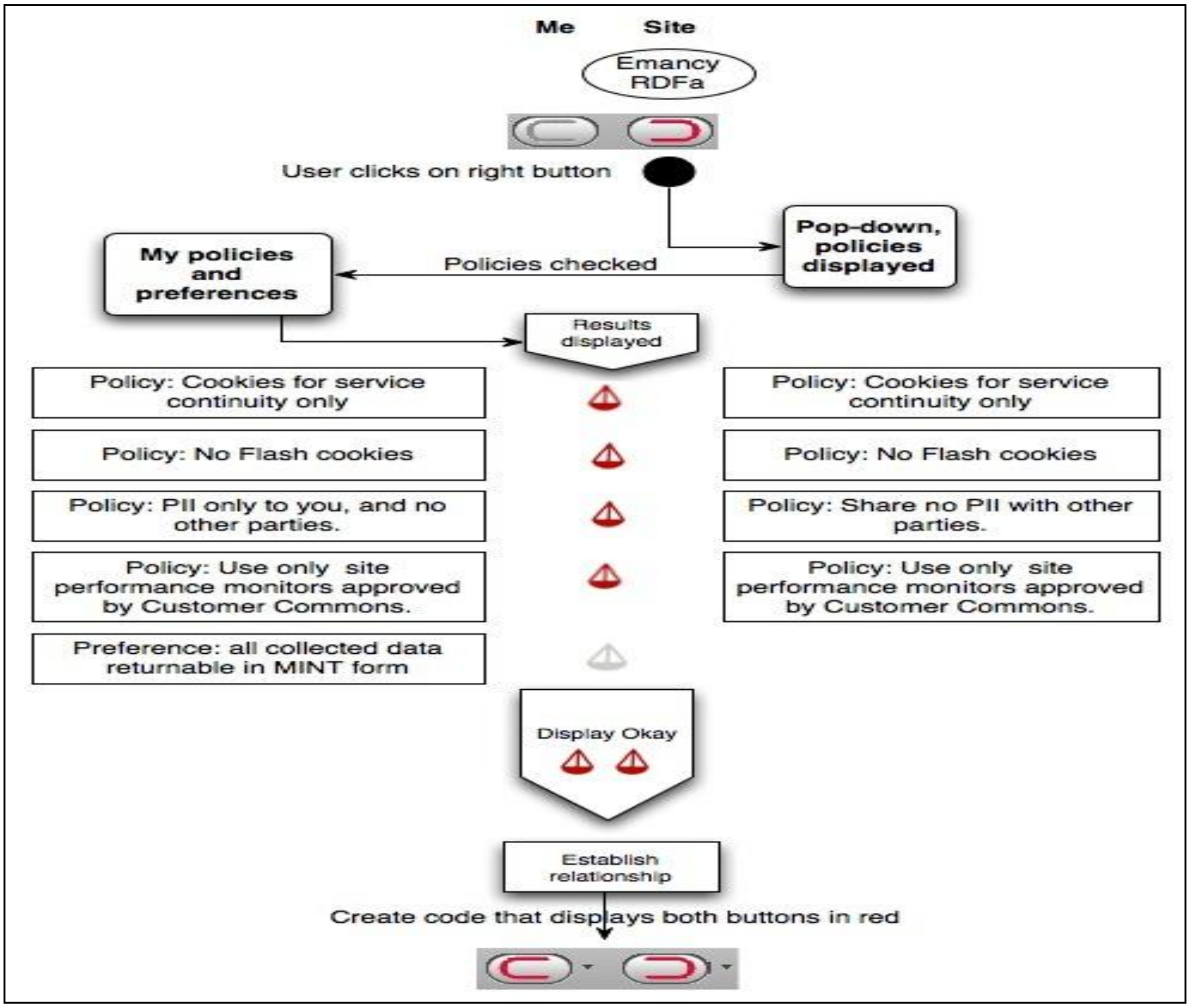


Figure 7: Flowchart for Collaborative CRM (Fredricks, 2009)

Figure 7 describes the business flow of collaborative CRM and how custom code is developed to integrate CRM with other systems.

Sugar CRM provides a low-cost choice for organization that wants deep customization flexibility in a packaged CRM application.

Sugar CRM is a model used to manage an organization interaction like phone calls, emails, meetings and social media etc. with customers and prospects. The focus of this interaction includes but not limited to sales, marketing, and support.

Sugar CRM offers everything we need to transform our business into Social Enterprise, so we can connect to customers and employees like never before, with no software or hardware to install. Sugar CRM is a Cloud Computing technology used to develop a customer relationship management (CRM) application over the internet for a type of performance measurement and automation.

Benefits in using Sugar CRM are:

- Extensive business automation can be achieved.
- Scalability.
- Less expensive.
- Very secured.
- Supports Multi –tenant architecture.
- High storage capacity.
- Flexible.
- Analysis of data is very easy.
- Can be integrated with other technologies.
- Ease of use - end users requires almost no training.
- Easy to customize and deploy anywhere.
- Low price, low risk and without limits.

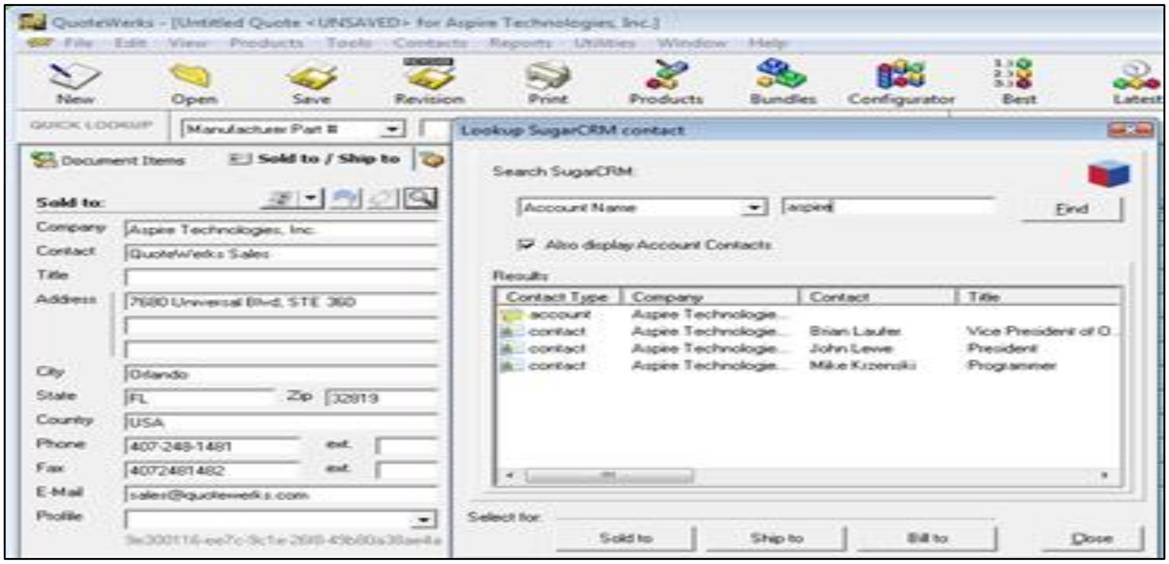


Figure 8: Sugar CRM Reporting (Sheehan, n.d.)

Figure 8 shows the settings page to build reports inside Sugar CRM.

Sugar CRM–Pros:

1. Ease of use.
2. Speed performance.
3. Global/Advanced search.
4. Integration ->open source.
5. Sugar exchange and sugar forge.
6. Rate of Feature development.
7. Choice: online or on premise.

The diagrammatical representation of Feature Development of Sugar CRM is presented below:

Figure 9: Growth of Sugar CRM

Figure 9 describes growth of CRM over period of time.

Goals:

- Create real-time reports and dashboards on any CRM metric.
- Monitor the effectiveness of marketing programs, sales opportunities and support cases.
- Share/restrict access to reports and dashboards across teams.

Sugar CRM Reporting

Issues:

- Lack of understanding on how marketing impact sales.
- Poor visibility into business performance.
- No understanding of why customers are defecting.

Solution:

- Track results of marketing leads to closed-won deals and also have the measure ROI programs of across channel.

- Dashboard identifies win/loss rates, competitive deals and lead source and we can also have review and revise rep and team forecasts.
- Consumer reports on service requirements, bugs, case resolution and response times.

Impact:

- Understand how leads are generated and which marketing programs work.
- Gain the insight needed to drive the business.
- Identify small problems before they become large ones.

DASHBOARDS:

- Users can create any number of custom dashboards based on variable within Sugar.
- Dashboards display real-time information.
- Charts can be shared across individuals, teams, or the entire company.

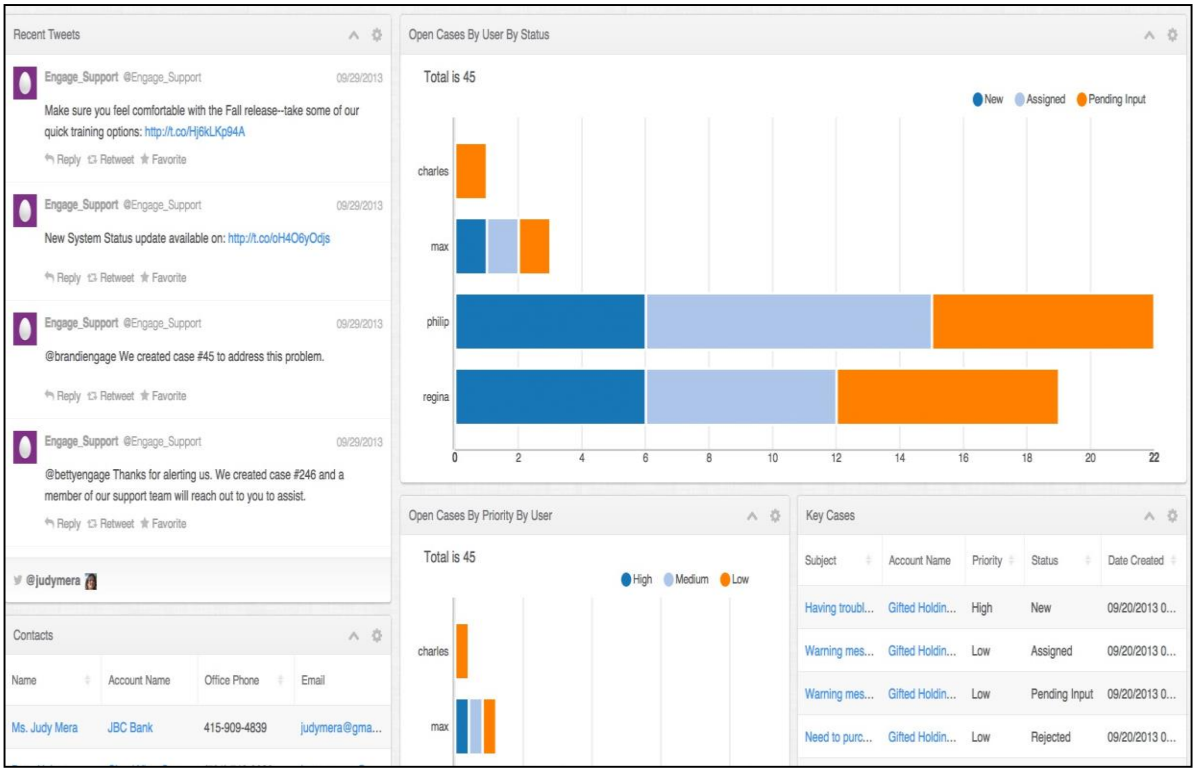


Figure 10: Sugar CRM Dashboard Navigation Support

Figure 10 describes the Sugar CRM dashboard where we can display graphs and keep track of support activities with customers.

MARKETING ANALYTICS:

- Understand the ROI of marketing programs.
- Track which channel is most/least profitable and replicate successful campaigns in a few steps.

SALES TREND ANALYSIS:

- Present user-specific information about opportunities and consolidate sales data for executives.
- Customize charts and reports based on key metrics.
- Drill down on charts to understand performance.

CASE REPORTING:

- Monitor the effectiveness of case responses and identify for prioritizes the customer problems.
- Measure how issues are resolved across individuals and teams.

CUSTOMER PROFILES:

- Understand your customer base for industry, revenue, time, geography and other attributes.
- Deliver relevant reports based on concrete data

In order to create reports in Sugar CRM we can choose the desired files as below.

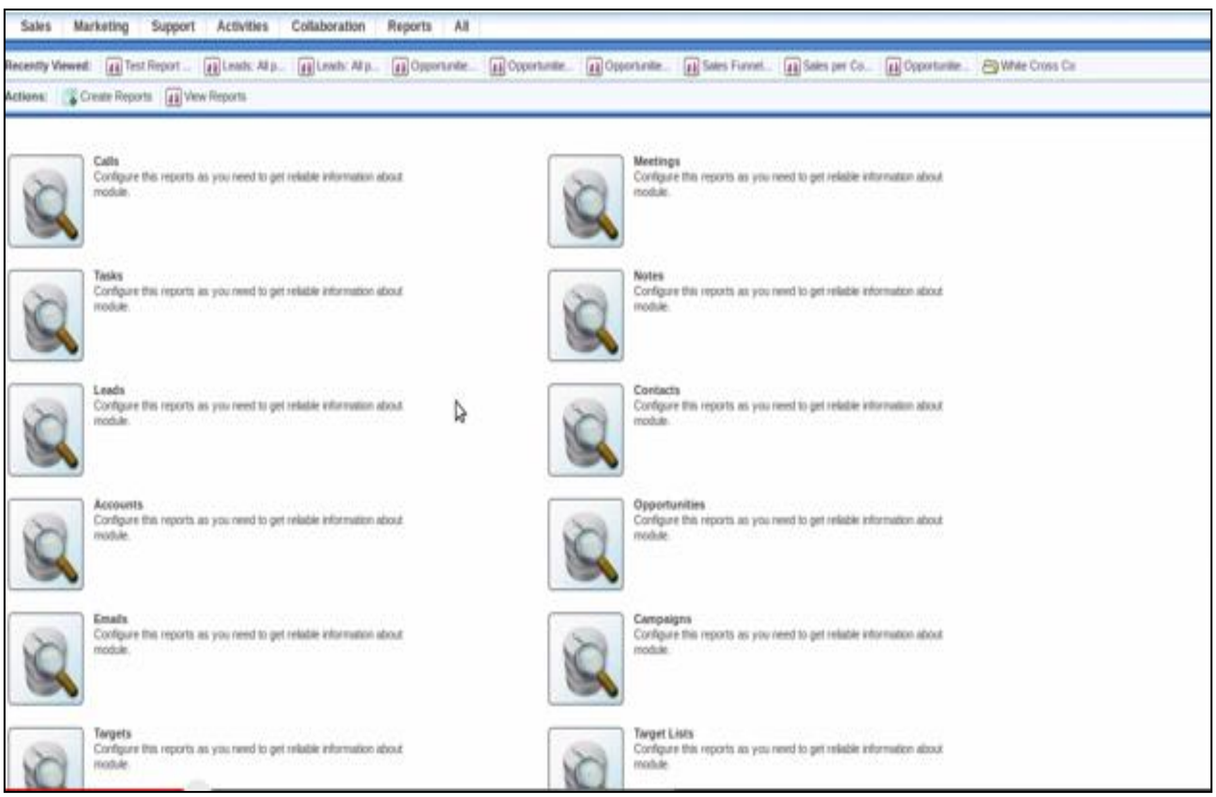


Figure 11: Creating Reports Using Sugar CRM

Figure 11 shows the administrator page for creating reports inside Sugar CRM

Sales people also use the Sugar CRM for the following reasons:

SALES REPS:

- Intuitive
    - Simple navigation
    - Short forms
    - Offline and wireless.
- Flexible
    - Dash lets and Themes
    - Change tabs/sub-panels
    - Dashboards
- Open
    - Outlook sync
    - Social media
    - Shared calendars where we can change access

The path where we can change access to each module for users added to this role.

	Access	Access Type	Delete	Edit	Export	Import	List	Mass Update	View
Accounts	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Bug Tracker	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Calls	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Campaigns	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Cases	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Contacts	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Contracts	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Documents	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Email Marketing	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Email Templates	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
Emails	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set

Figure 12: Access Control in Sugar CRM

Figure 12 describes how access control is set up on each account inside Sugar CRM.

SHARED MANAGERS:

- Reporting
  - Easy to run reports
  - Share with team
  - Share with executives
- Flexibility
  - Quickly get information on what they need
  - Adoption increase useful data
  - Meaningful dash lets on homepage

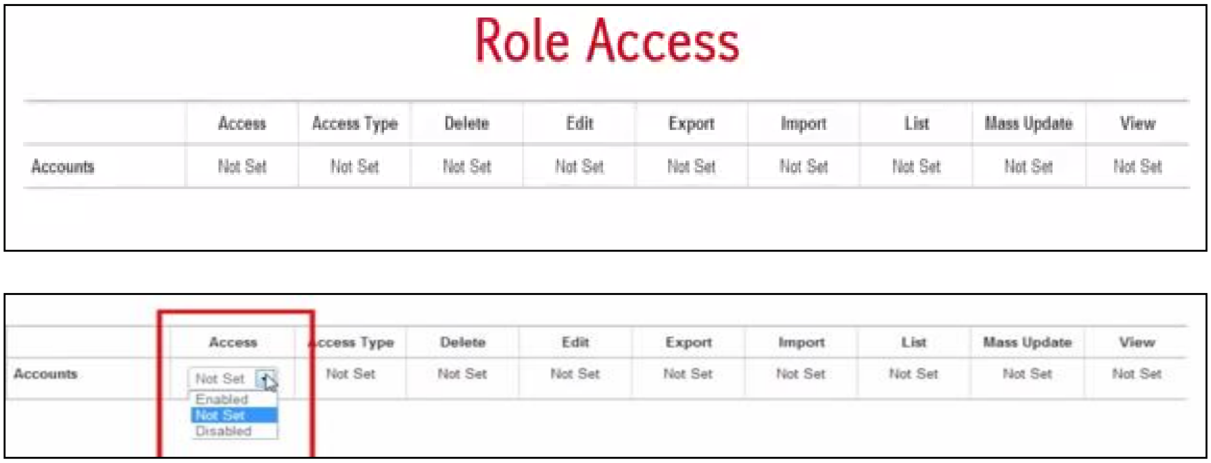


Figure 13: Role Access in Sugar CRM

Figure 13 describes how roles can be changed inside Sugar CRM.

ENABLED: module tab available.

NOT SET: set by default, which is the same as Enabled.

DISABLED: module table unavailable.

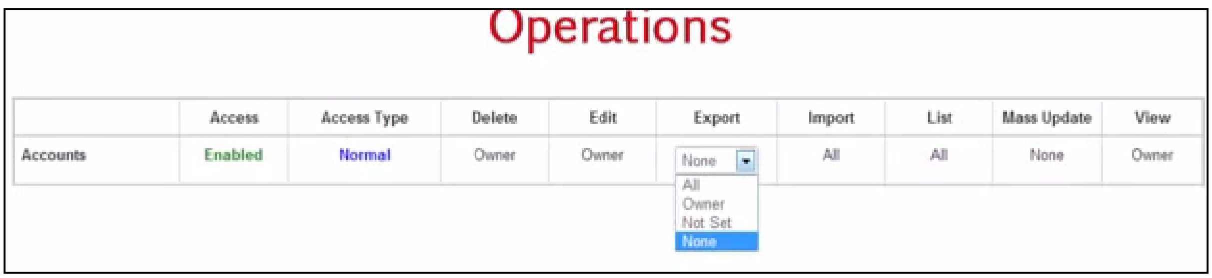
Access Types delegate the possession of detailed tasks in definite module to groups or individuals.

NORMAL & NOT SET: Can outlook and manage proceedings in the component depending on team membership. Regular users are granted normal access type.

ADMIN: Can administrator all records in the module regardless of team membership. The user does not have access to admin tools.

DEVELOPER: Can access the administrator and development tools.

ADMIN AND DEVELOPER: Allows the user to view and manage all records and access administration and development tools to manage the module. Team membership is not required to view records in this module.



	Access	Access Type	Delete	Edit	Export	Import	List	Mass Update	View
Accounts	Enabled	Normal	Owner	Owner	None	All	All	None	Owner

Figure 14: Operations of Sugar CRM

Figure 14 describes how Operations are performed inside Sugar CRM.

OPERATIONS: Delete, edit, export, import, view records in the list view, perform a mass update, or view records in the detail view.

OPERATION OPTIONS: ALL: all users who are assigned user of the record can perform this operation.

OWNER: only the assigned user of the record can perform the operation.

NOT SET: setting by default, same action as all.

NONE: none of the users in this role can perform the operation.

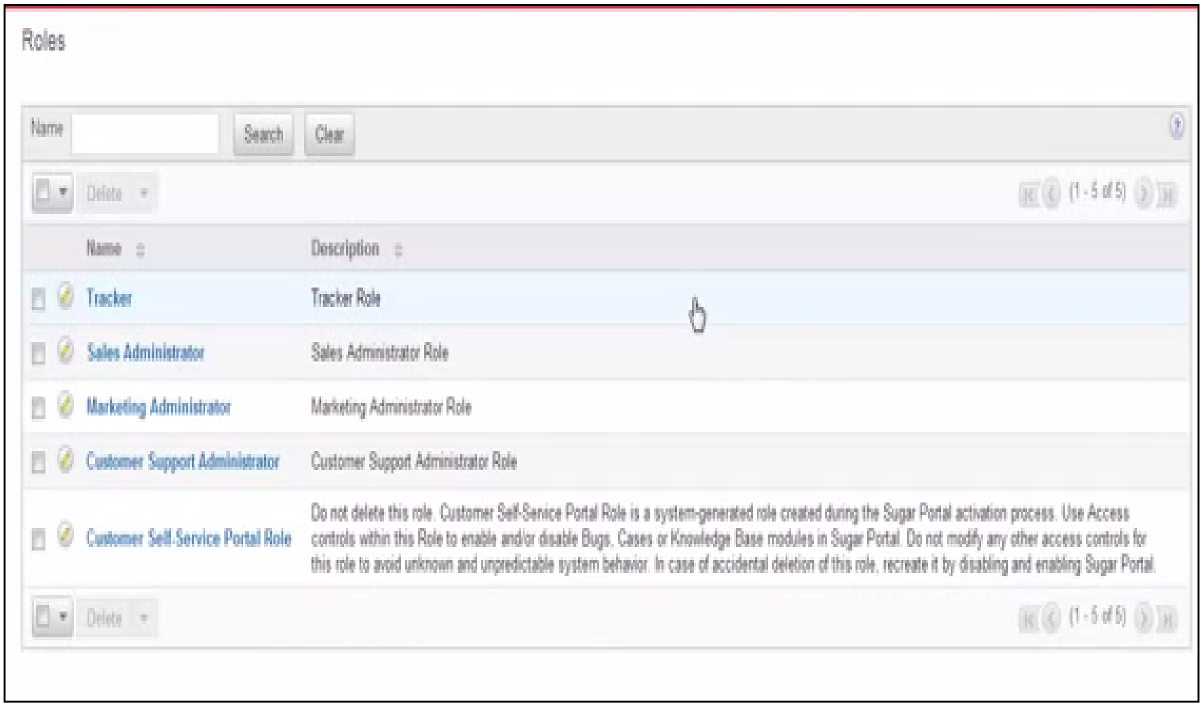


Figure 15: Sugar CRM Creating Roles

Figure 15 describes how roles are created inside Sugar CRM. We have various roles like described in the figure.

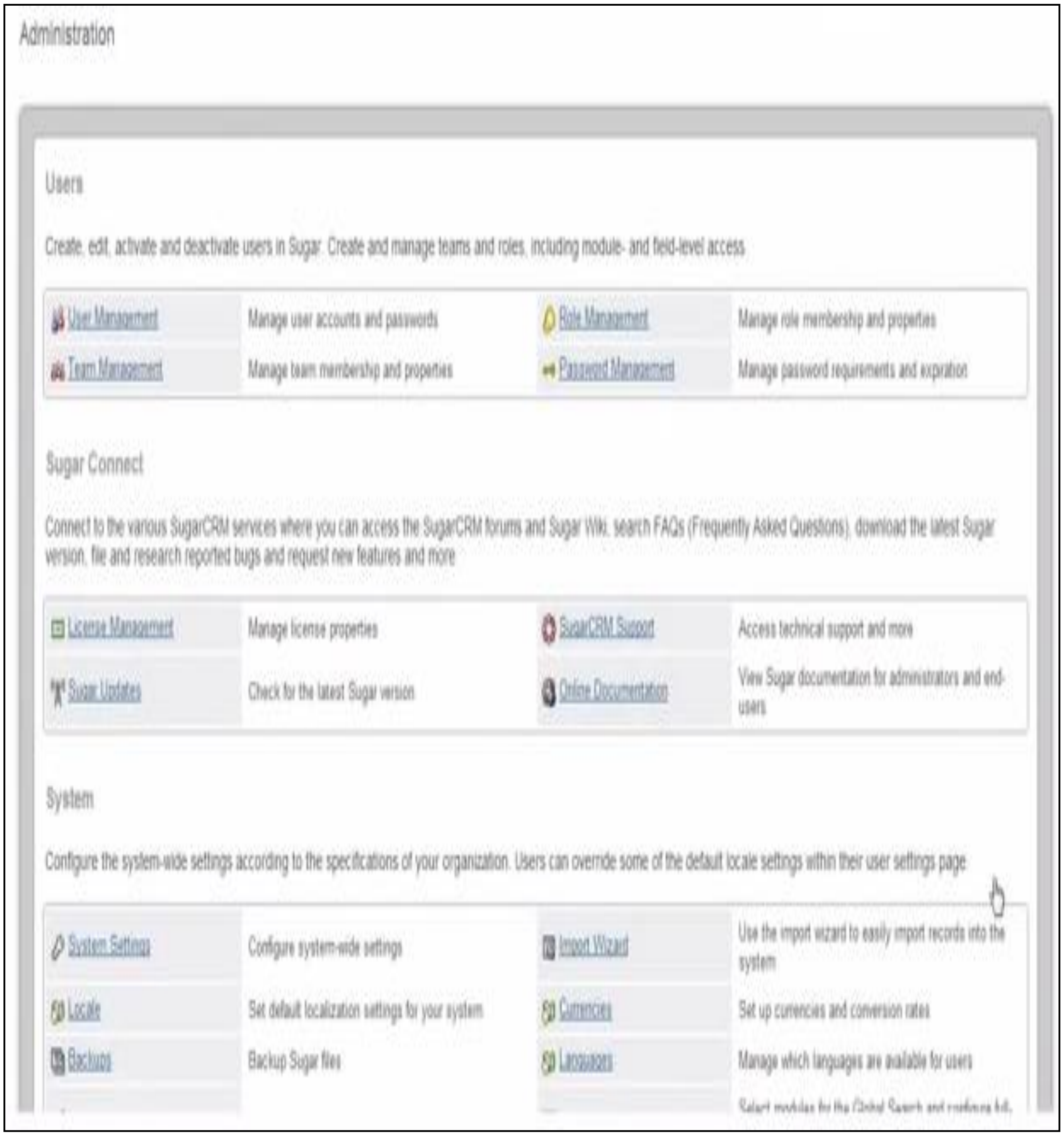


Figure 16: Sugar CRM User Management

Figure 16 describes how a role is created with permissions over various objects and how they are assigned.

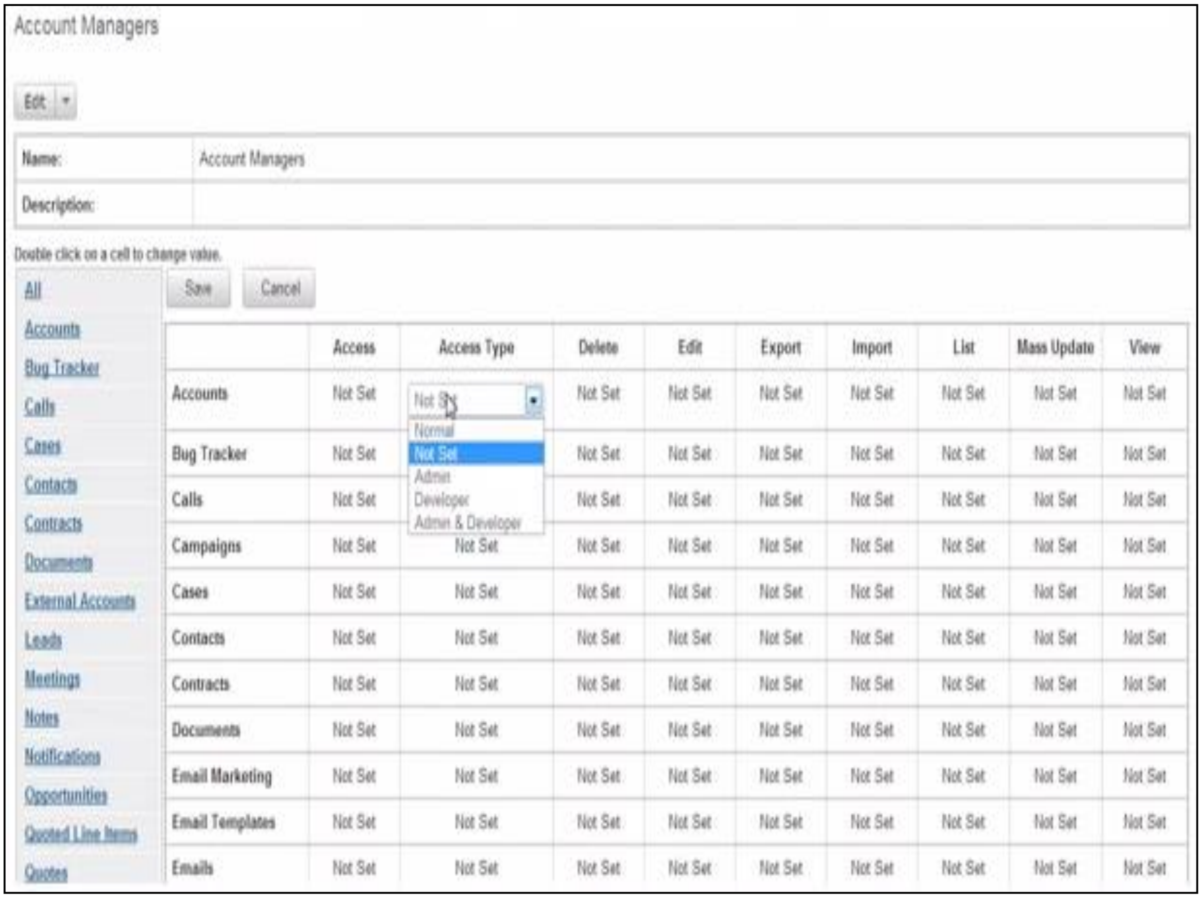


Figure 17: Account Managers in Sugar CRM

Figure 17 describes how a user can be set as an account manager inside Sugar CRM.

Summary:

- Define Role characteristics
- Create a Role
- Manage Field-Level Access

SECURITY:

- Control visibility by module
- Control actions by module/field

PERSONALIZATION:

- Users can create any number of dash lets on homepage according to their requirements.
- Set filters to display only for information which is important to them mainly.
- Reports and dashboards update in real-time.

Users can measure opportunities very easily and can control of the data from their products to opportunities very nicely can rollup data to their accounts and contact and can manage contacts pretty straightforward stuff.

Very easy to manage accounts and understanding what's the status and how things are moving forward.

MOBILE AND OFFLINE:

- Improve sales productivity with mobile access solutions.
- Access sugar suite from any smart phone or PDA.
- Work offline and update sugar information automatically when you return to the network.

SUGAR PLUG-IN FOR MICROSOFT OUTLOOK:

- Capture important customer's communications within sugar.
- Ensure calendar and e-mail are coordinated between desktop and sugar.
- Eliminate redundant information.

SALES TREND ANALYSIS:

- Present user-specific information about opportunities.
- Consolidate sales data for executives

- Customize charts and reports based on key metrics.
- Drill down on charts to understand performance.

Test:

Recognize developments in navigation and ease of use. Examine various business scenarios or test cases and choosing various user contribution mixtures to protect the business scenarios. They also confirmed whether the presentation met business requirements.

User review and acceptance: Agile methodology was typically about fast feedback (Kammermeier, 2010). Feedback from business users has been most significant. If anything is built with wrong methods then it has to be thrown away later. Regular feedback from business users will help in cruising in the direction of bay with reefs. Constant correction of the development based on wind transformation and other factors. Business users are the most appreciated members and are treated consequently. This methodology sturdily endorses having business users on-site or accessible to the Application. This is to authorize user acceptance of the look and feel of the application and that it delivers the key capabilities.

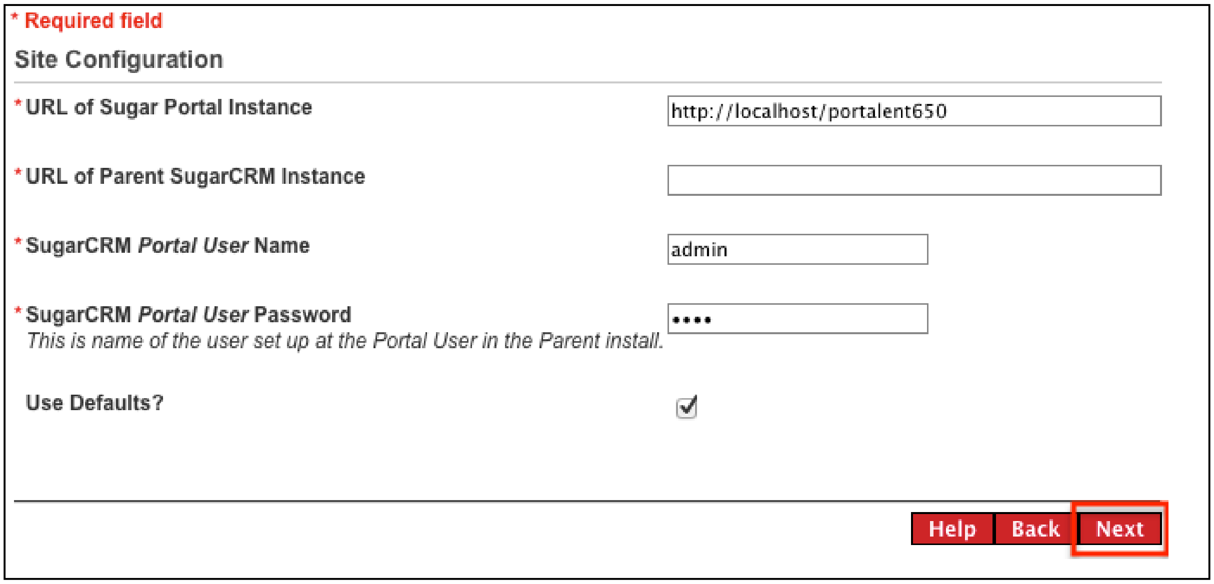


Figure 18: User Review Acceptance Model (Bain, 2007)

Figure 18 describes how instance is created in Sugar CRM. The fields to be filled out are mandatory to setup an instance.

The applications are to be revised are systematized and packed so they can be accessible to the business users. The project team informs the project manager whenever the work is ready to be reviewed as well as what the team proposes to have revised. The primary objective of the project manager must regulate the developed work that is ready to be revised. The main aim was to confirm the work to be reviewed is sufficient to deserve providing a review team collectively.

The users evaluate the application bundle earlier to the revision. This allows the users to become acquainted with the material and equipped for revision. Users make note of whichever faults, concerns, or inquiries comes across their review procedure. While reviewing they should consider formerly renowned issues, most reviews emphasize on the high-priority defects acknowledged by the users. Developers discourse these less acute defects without captivating the review time.

Implementing the executed project:

The Implementation phase of the Sugar CRM environment was rolled out Development to Test to Production. In the implementation of the current project at the medical center installation of three environments Development, Test and Production are installed.

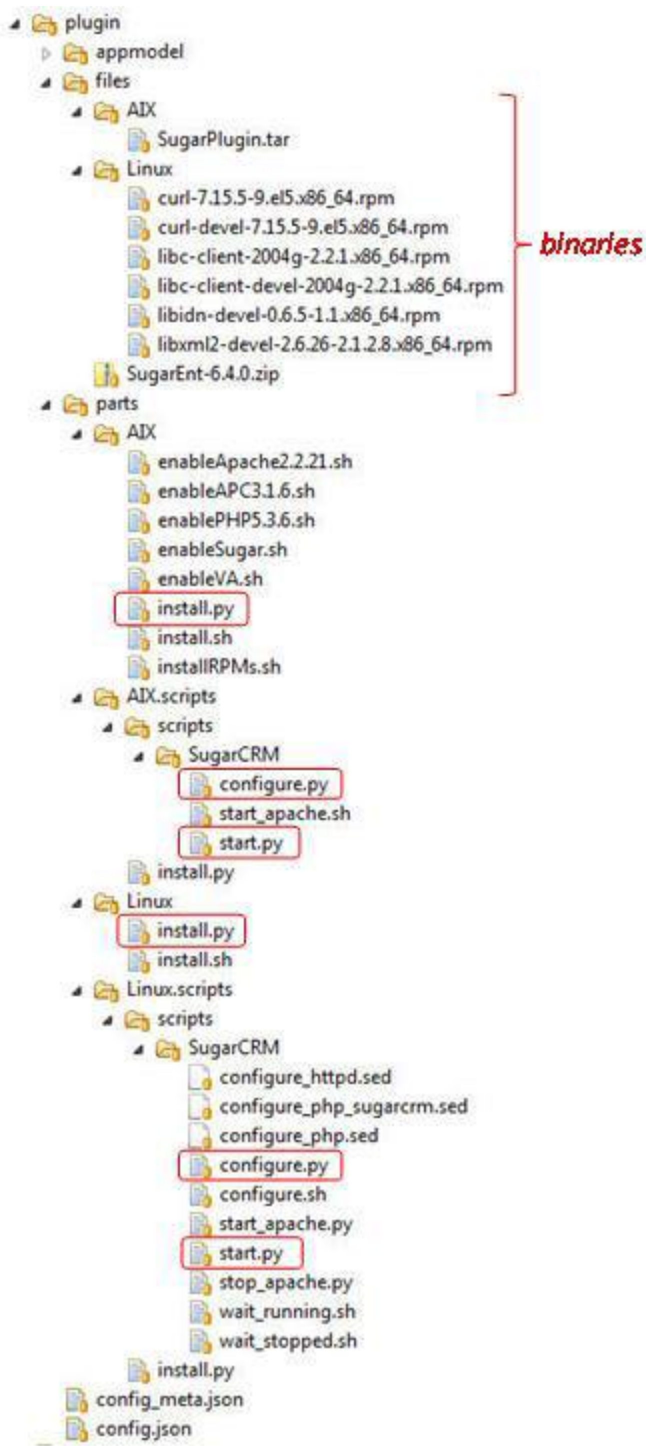


Figure 19: Sugar CRM Environmental Structure (Bain, 2007)

Figure 19 shows how the code structure looks like in Sugar CRM.

In the test environment, primarily platform migration check is done to verify the migration from development to test and from test to production. In this environment migration procedure validation, performance test, final validation test, incremental load test, scheduled and cascaded load. It is a day time migration platform with a migration roll back option and also a warm server back up with some limitations.

Production environment delivers the content dashboards to the user, reload of scheduled or triggered, incremental reload, cascaded reload and also opened in server for additional interface development facility to the user any front end users.

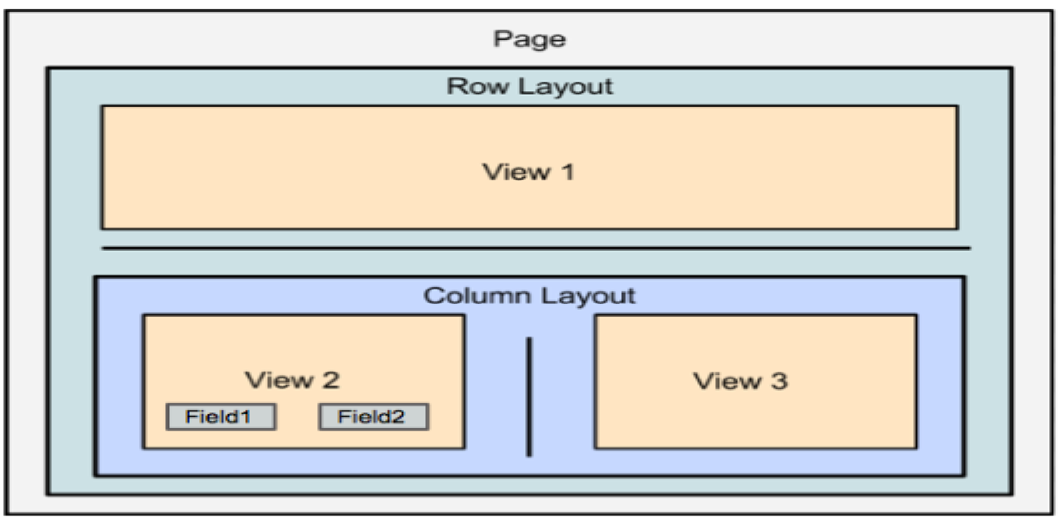


Figure 20: Layout for Delivering Sugar CRM (Bain, 2007)

Summary

This chapter provided in depth explanation of concepts related to the project problem and methodology. All the terms that are used in the context are explained in detail and an outline of the process is explained. The next chapter will discuss the methodology used to conduct the project research in detail.

Chapter III: Methodology

Introduction

This chapter focuses on implementing the agile methodology to design and identifying which method would be suitable for our current scenario. Each step is explained in detail along with limitations. Data is represented graphically and error percentage is calculated and by the end of chapter we can have a proper method to improve forecasting.

Design of the Study

The initial target is to understand the Organization Business required document (BRD) which will provide the information regarding the requirements of the organization and then a strategic plan is prepared to achieve the Business logic which includes

- Number of tabs and objects to be created.
- Creating the fields to enter the data.
- Creating relationship between different fields and objects.
- The number of users and profiles to be created.
- Assigning the validations rules for the profiles and sharing rules are assigned to achieve security at the filed-level and object level.
- Creating the permission sets.
- Creating Batch Apex and Schedule Apex.
- Writing test classes for the developed code.

The process is followed according to the agile strategic plan. Agile methodology has made into software development most recently. As business cycles continue to accelerate many organizations have turned towards Agile (Holler, 2010). Firstly the business logic is analyzed so that it can be obtained by customization; if not the business logic is achieved by writing some triggers, batch apex and schedule apex in the developing environment.

In the first step all the necessary objects are created that are required for the application and then fields are created in the objects through which a user can enter the data. In the second step relations are developed between various objects and fields by which making the fields to update automatically.

In the next step permissions are assigned to the profiles that are created and then users are assigned to the profiles. A user can have only one profile, but can have many permission sets by which the security is achieved. After developing the BRD, application is moved into the testing environment where each class, validation rules are tested so that making sure to achieve the business functionality.

Since this data holds a lot of valuable information this data needs to be processed in a short period of time. By using this valuable information organizations can boost up their productivity by using object query language (OQL) to retrieve the data from the database to generate the reports. These reports can be analyzed and can be processed to achieve the goals. With these Sugar CRM developed reports and dashboards improved Decisions, Processes and Better Solutions will be achieved.

What Sugar CRM can do for job portal?

A link posted on organizations website and also users receive an email with a link to a campaign landing page where data will be fed directly into Sugar CRM and labeled it has been generated by the mobile CRM campaign in the campaign summary window where the people can look for the available jobs in the portal and HRs can also post the jobs which are available in their companies and the candidates who are interested for jobs can post their resume and can apply for the position which will suits for their background.

Considerations for the Recruiting App.

Track position in all stages of the procedure, from those that are open to those that have been canceled.

- Allocate people to post review for candidate which they've interviewed.
- Provide protection for the recruit data so that it's not mistakenly viewed, or deleted by employees who shouldn't have access.
- Inform the recruiter about the next steps that should be taken when a choice has been made about an applicant.
- Inform all employees of new positions that have been posted.
- Make sure that a new job opening has executive approval before it becomes active contain reports that give user a general idea of recruiting status.
- Permit recruiters to map the location of all candidates who are applying for a position, to better understand relocation operating expense.

- Make it easy to perform several parallel tasks at once, like reject multiple job applications.
- Post open positions on public website.
- An app that meets these necessities is going to greatly increase recruiting and hiring processes.

Custom Objects

Custom objects are the components that representation the statistics we need to store in our Recruiting app:

For our Recruiting app, six objects are created to capture recruiting-related data:

- Position
- Candidate
- Job Application
- Review
- Job Posting
- Employment Website

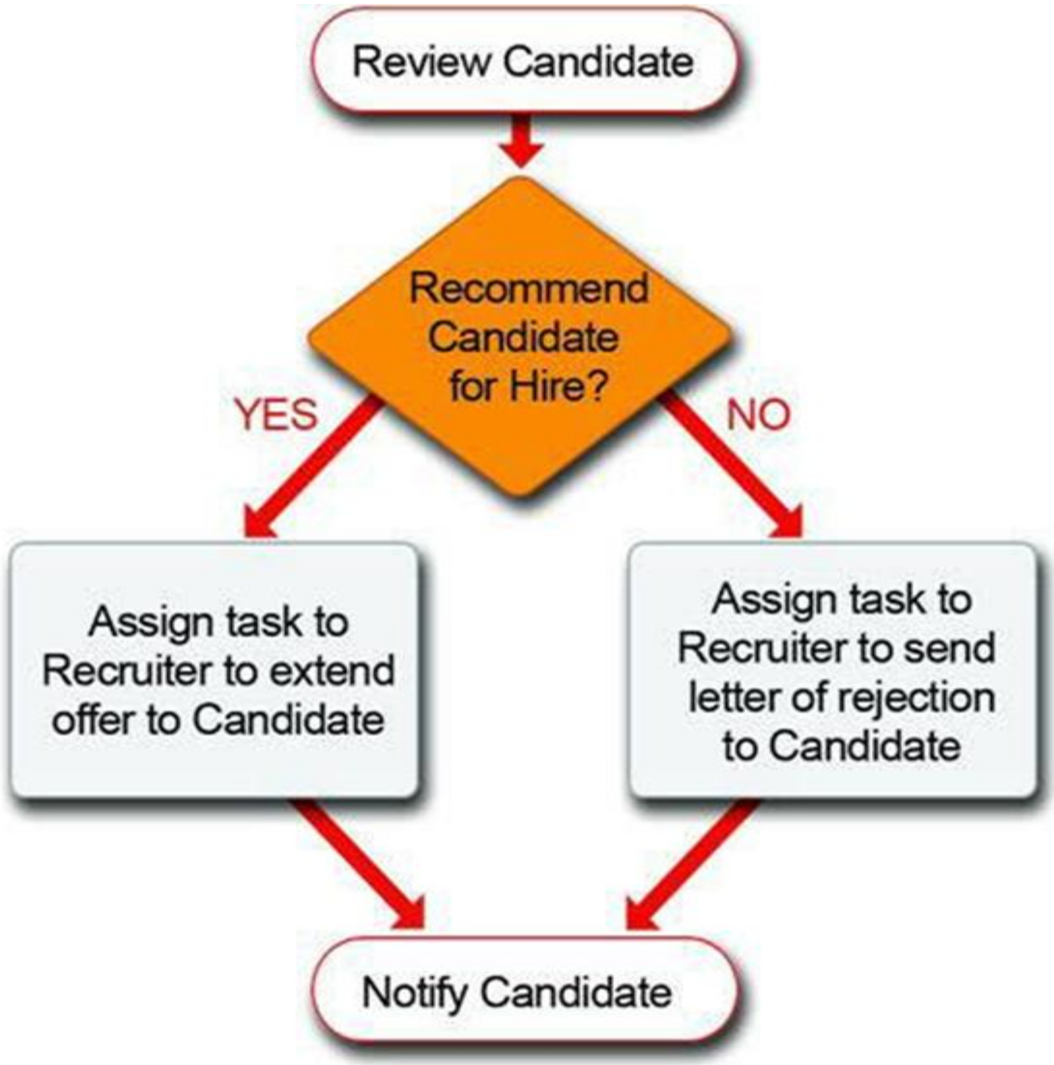


Figure 21: New Hire Flow Chart

Figure 21 describes how the new applicant is hired and how the notifications are sent out.

When a recruiting manager makes a choice to either extend an offer to or reject the applicant, changing the status of the application the appropriate task to be assigned to the recruiter for that location. Based upon the recruiting manager's decision, the recruiter performs the suitable follow-up task.

What is database?

A database table presents your information in rows and columns. Let's take a look at how a table of positions might look:

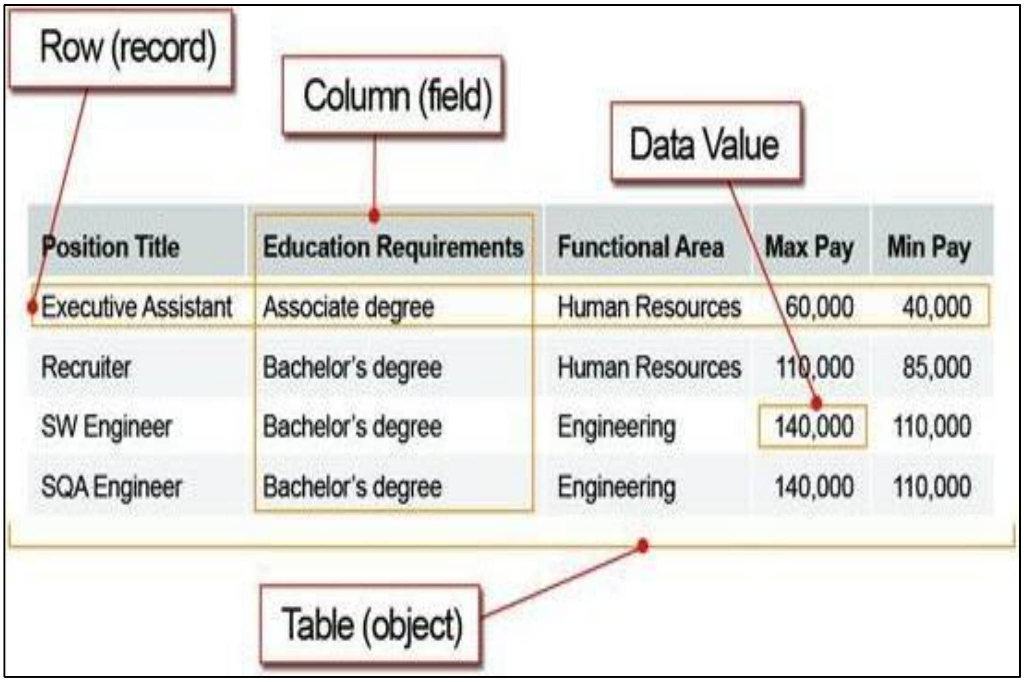


Figure 22: Sample Job Posting

Figure 22 describes the sample job posting and various parameters inside it.

Each row in the table represents the in order about a specific request of the object, for example, the Recruiter position or the SW Engineer position. In standard platform terminology, we call this a record. For every entity you want to path in your app, you'll have numerous records to represent each entity item about which you are storing information.

It is common for users who are new to the proposal to confuse the meanings of entity and record. It'll make your expansion a lot easier if you keep in mind that an object is a category of information, Such as a location or candidate, and the documentation is a single instance of an object.

The Position object requires a small number of checkbox fields: individual to indicate if take a trip is required for the location, and four others to point out which programming languages are necessary. By evasion, these values should be unimpeded.

Add Date Fields: Add three date fields to our recruit app to follow the date a position open, the date it closes, and the date by which it must be filled. Date field are huge because they repeatedly include a popup calendar crossing point from which users can select a day with no any typing—yet another built-in characteristic that we can control in our app without any extra work.

Introducing Picklists: When performance the preview of what we wanted our position page to eventually look like, there were more than a few fields that were specified with drop lists. In Sugar CRM proposal terms, these fields are called picklists, and they consist of more than a few predefined options from which a user can select.

Picklists draw closer in two flavors: a standard picklist, in which a user can choose only one option, and a multi-select picklist, in which a user can choose multiple options at an instance. For the purpose of our location object, we need to describe standard picklists for a position location, type of job, useful area, and job level.

Create a Dependent Picklist: Look at the picklists that we've produced; it is rapidly understandable that our users might get aggravated with the span of our Job Level picklist. Let's create our users content by spiraling Job Level into a needy field of the useful Area picklist. Doing this will agree to users to see only the four pertinent job level values when a department is selected in the purposeful Area picklist.

Sugar CRM Administration: First we need to log in the Sugar CRM locate the administration menu on the top right and give it a click you will see a menu dropdown locate and click on admin there are many options here and we will discover the ones that are accessed the most let's start with the user section each of the items within a section in the admin page gives a brief description of what it can be used for going over the user section we see user management role management team management and password management go ahead and click on user management within this option we can edit create and delete users with an sugar after clicking on the link you'll be presented with the page that lists all the current with an sugar your page may display more results which will result in page clicking on the user's name will bring it to the edit page here and as an admin you can make any changes you need here.

Click on Edit of the next page you will be able to make edits to the users profile the first tab allows basic changes but there is one item that is very important here which is status of an employee who is no longer with the company the new not remove their account from the system instead change their status from active this will keep all the data stored in the database.

If they are deleted and the data has not been reassigned then will likely be lost forever the next time to change as the user type your choices are did make the regular user or system administrator can only access modules and records sign to them based on the team n roll which admin connects is everything within your sugar installation moving on the next item that he should alter is who this employee reports to simply click on the Aero search for an employee and select them from the list sugar has its own internal email client which is perfectly fine to use however you may have someone who prefers to use an external clients such as outlook to select which option you would like have an external client is selected then you will need to enter the SMTP username and password click save next we have the themes tab the themes can be changed by the user as well. We have the advanced app there are three items to take note up here notify on assignment is one that should be checked as it does what it says anytime this user is assigned a task or project sugar will send a notification to them next make sure that'd all team has been selected any new record created by this employees will default to the steam you can also change layout options for a specific user just like the on the left that you wish to hide and click the right arrow also that you wish to show and click left arrow this will only affect this particular user and is not a global change just click save to commit the changes lastly we have external accounts

Here you can simply connect your external accounts such as go to meeting Google and WebEx just click Create and then enter the appropriate information for the application then click connect maybe have more than one user to change the status of there’s a great way to do this without clicking on each record head back to user management main page to see the full list abusers simply click on the box next to each user you wish that it and click mass update a small box will appear below the usual list with a few option change the options as you need and click update next we’ll have a look at the team management link head back to the main admin page the team management option allows you to change the name with the team as well as view the users currently on that team it also dictates the records the user can see when assigning users to teams possess in mind that they can be members have Multiple teams role.

Management dictates what the user can do with the records multiple teams role management dictates what the user can do with the records and what you see in the interface go ahead and click on role management with an role management you will be able to disable models for certain users and enable models for users as well as break down to a much smaller level to do so click on the role you wish to edit on the next screen you will see big break down as well as options are set for this module in this role to edit and sell just click on the text in a cell and select another option to scroll down and locate the user’s box click select user and then either search for the user or select them from the list at the bottom after that just click save and you are all set the last option in the user section.

Management your options within the sectional to manage the expiration dates requirements for users passwords the next sections as sugar connect but the only item to focus on here is the shipper update within this page you can click on the link to enable or disable the automatic process of checking for sugar objects by default it is enabled if it is not or you just want to make sure that you are on the latest version anyway just click check now to run a manual update.

Head back to the main admin a like again if and if you are running the automatic process and there is a newer version of sugar available then you will see a red link here instructing you that there is a new version of sugar system.

Change the logo and a few other options the other sections that are used most often by the average user our mail merge and lager settings quick save for cancelling go back to the main admin page remaining within the system section.

Main admin page select the schedule link will give you the option of setting up and schedule that new schedule task can be created by clicking on schedule was like at the top and selecting create scheduler then just fill in the appropriate information and click save back at the main page the next in the system section his tractor go ahead and select tracker you will see just a few options to select here and each has its own information.

Window tracker actions the first option allows you to either follows or long Twitter users are accessing by saving page views and record-setting turnout the next options track user sessions the track is performance in the queries make your selections and click save going back to the main admin page the last item in the system section is connectors this link well it does have many options allows you to connect to external sites such LinkedIn face book and twitter.

It also gives you the option to import your contacts from these accounts say for instance that you want to connect your LinkedIn account just click on map connector fields on the next screen you will see a tabbed interface make sure linked in as selected and then mapped the important data with the correct marshal field think look safe on the main page for connector settings select sec connector properties: and then enter the appropriate information for your account.

After that just click save on the main admin page look at the email section and the section we will cover updating your SMTP mail server for mail notification including work for words as well as sending email blast if you are using an external mail campaigns such as mail champ then you can disregard the email campaign section for sugar in order to make changes for an email setting make sure that you have the SMTP server location and credentials then click on emails Celtics this section will allow you to configure which server sugar uses for the email notifications ensure that the from name and address are correct it is better to use a do not reply address for this otherwise the address you enter will receive excessive unnecessary email. Select your email provider from the list and enter the server address in credentials once completed you can click send test email to test the connection and then click save there are many other settings on the page and feel free to change them but our installation normally keep these at the sugar defaults back at the main admin page you will see link for and down email go ahead and click it this link will lie to set up group email accounts for monitoring and down email for example if you have an email address shared by multiple users like support at your domain dot com in this section will allow you to setup this address and account as well as what teams the email would be assigned to bovver over and down born 31 hover and down email the menu and select new group email account from here.

The mail server settings in credentials trash for the location which teams to assign the incoming messages to and who the message from in their address each email can also create a new case automatically with an sugar if you would like and shook you can send an automated response the sender from an on a reply template.

Once done you can click test settings and safe on the admin page in the email section you will see email Q which will he outbound mail from the y sugar server if you do decide to use sugar for all your campaigns that's lighting campaign email settings will give you the option to set the system up if for some reason the campaign emails from sugar are now being distributed than email Q will allow you to see which emails are causing the blockage in our remaining cued up there are two main reasons that uses the side against using sugar for email campaigns the first as they do not wish to use our secure server to setup ok emails on a regular basis for whatever reason the second is limited templates without sugar

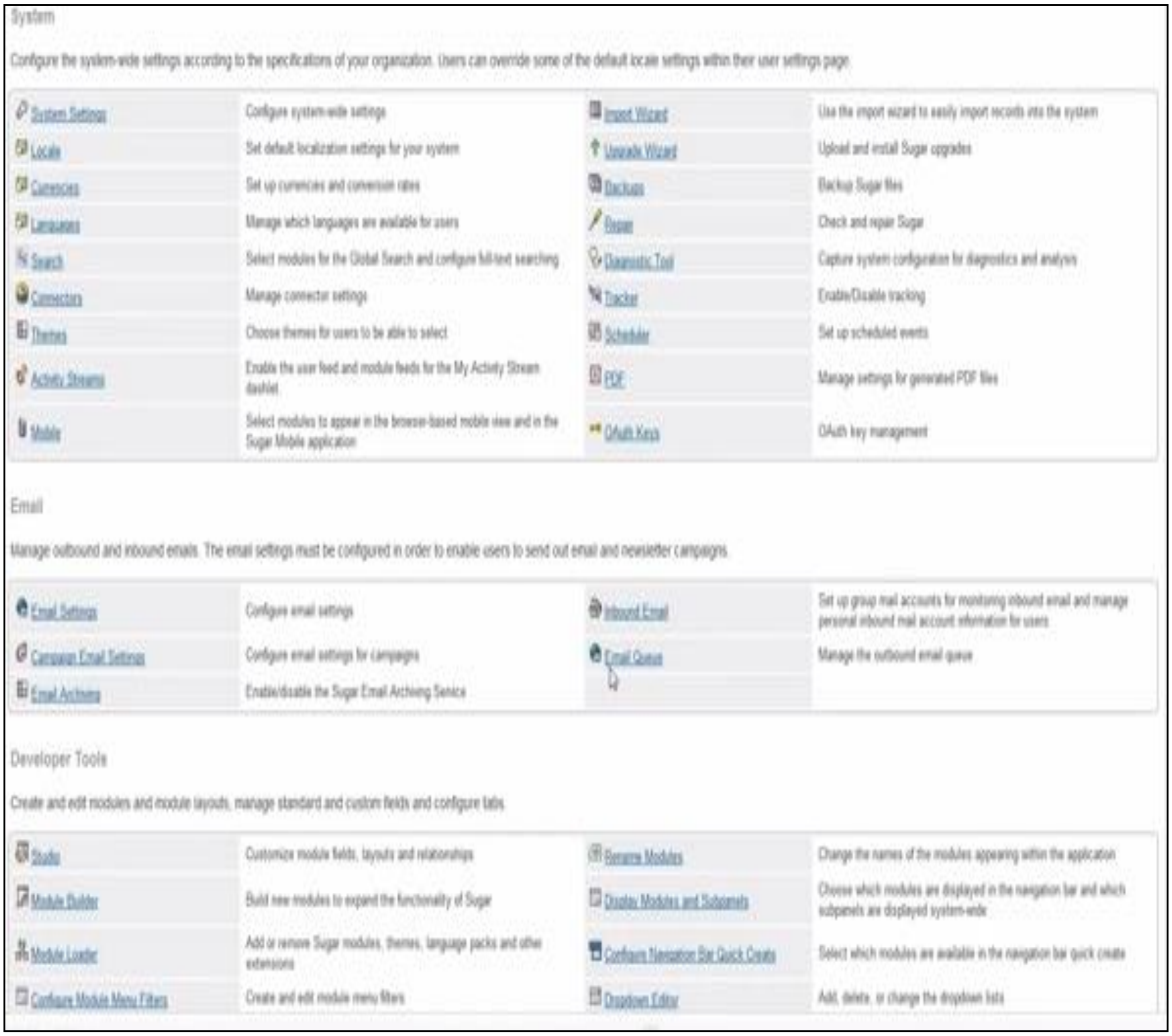


Figure 23: Sugar CRM Software

Figure 23 describes the administrator page from where one can navigate to various settings.

Sugar users will have to create their own templates using sugar whereas a service like mail temple had many pre-made templates ready for use an easy to use interface for creating custom templates let’s move on the forecasting click on time periods in here you create a time period that you wish to track for products you can either added what is here or cover overtime periods in the top menu and select create time period the process is straight forward once done click safe back on the main admin page.

Locate the contract section and then click contract types and this page you will be able to view create and edit the contract types with and sugar creating is a simple is hovering over contract types at the top and selecting create contract type: just enter the name and the preferred list order.

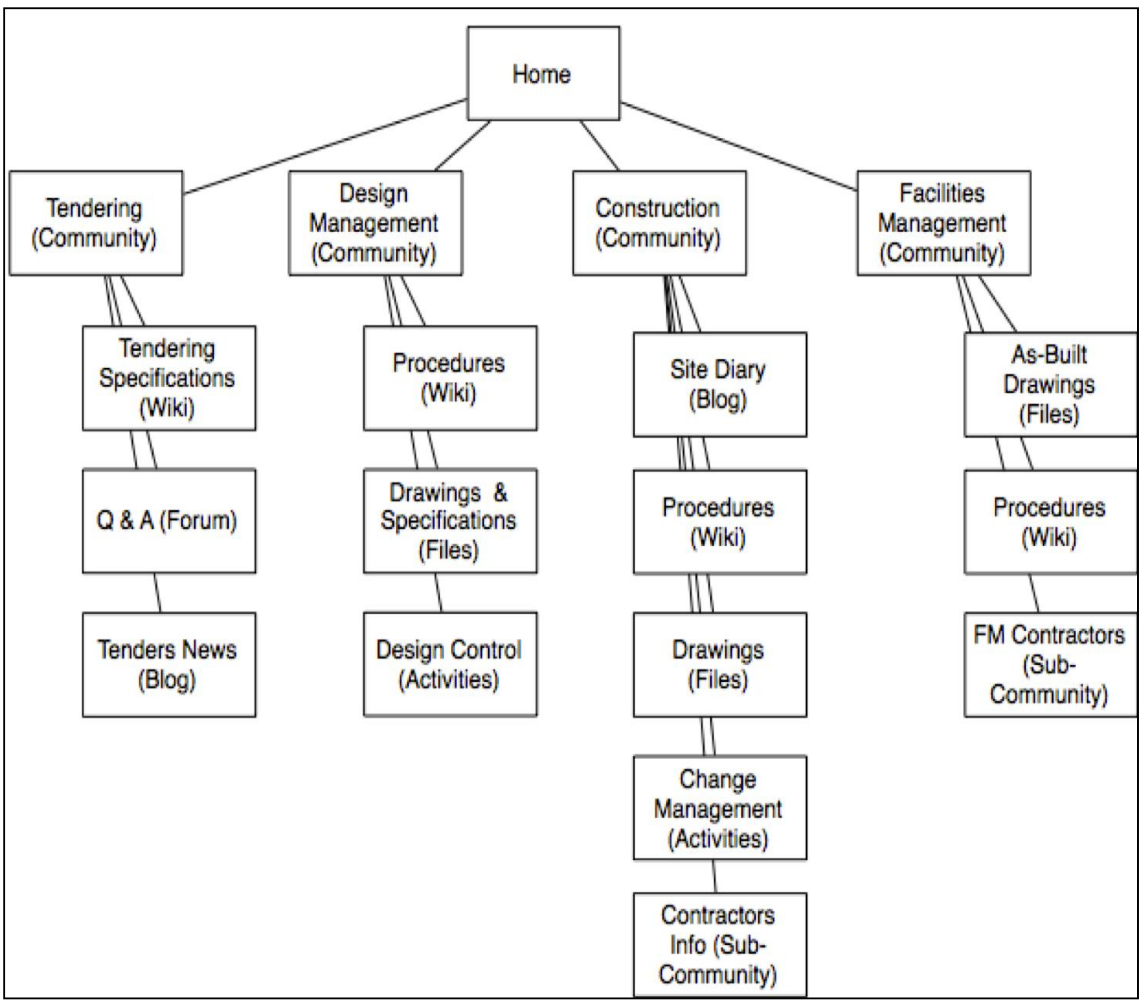


Figure 24: Project Methodology Flowchart (McDonald, n.d.)

Figure 24 describes the project methodology flowchart and various steps followed while developing an application.

Data Collection

Documents that are totally associated to these objectives has been appropriately composed. The main supplies for gathering the documents to attain developmental deviations was in the form of excel documents.

The main principle in generating and using documents to know numerous ways of quality and quantity reporting presentation dimension classifications, outcomes in replications of determination, increased cost and missed chances. The part where developer was proposed to put the practical abilities to design a document and investigate the data.

Various data values were improved firm over a historical report. Hence, the significance and comparability of collected historical and current data is estimated.

Data Analysis

Exploratory data analysis was a method to analyzing the tables and data to review their prime features and examine the data sets in a simply understandable form, habitually with visual graphs, without using any statistical model or a formulated hypothesis. CDA was a technique for making decisions using data from a study. In CDA, a result was called statistically significant if it is being predicted as improbable to occur by coincidence alone, affording a pre-determined threshold chances, the significance level.

Budget

All the costs that were incurred during this project like licensing, database installation and handling costs, resources, maintenance and other miscellaneous costs were covered by the company.

Timeline

After an appropriate analysis of the organization and the necessities, time for this project is given below.

OVERVIEW PROJECT SCHEDULE	
MILESTONE	**DATE**
Project Initiation	11/14
Understand the organization structure and its BRD.	12/14
Developing of the business logic, designing the database, creating objects, workflows.	1/15 – 04/15
Testing	05/15
Documentation	07/15
Defense	10/15

Summary

This chapter discussed the agile methodology in detail and also focused on the integration and implementation of the Sugar CRM development. The next chapter discusses about the achieved data presentation and its respective analysis to maximize the visibility.

Chapter IV: Data Presentation and Analysis

Introduction

This chapter focuses on the presentation and analysis of the reports and data that are developed in the App for easy data access, to improve visibility flow. As the organization dealt with the confidential data, the author was not authorized to use any real time data for this project.

The process, the method and any programming used was exactly the same. The data representation is just an example, which was gathered solely for the purpose of this project.

Data Presentation

The screenshots of Sugar CRM application where the business user interface to login and use the built functionality. Also how the front end used makes the respective changes to the back end table are also shown in below screen shots.

Figure 25: Sugar CRM Login Screen

Figure 25 shows the Sugar CRM login page.

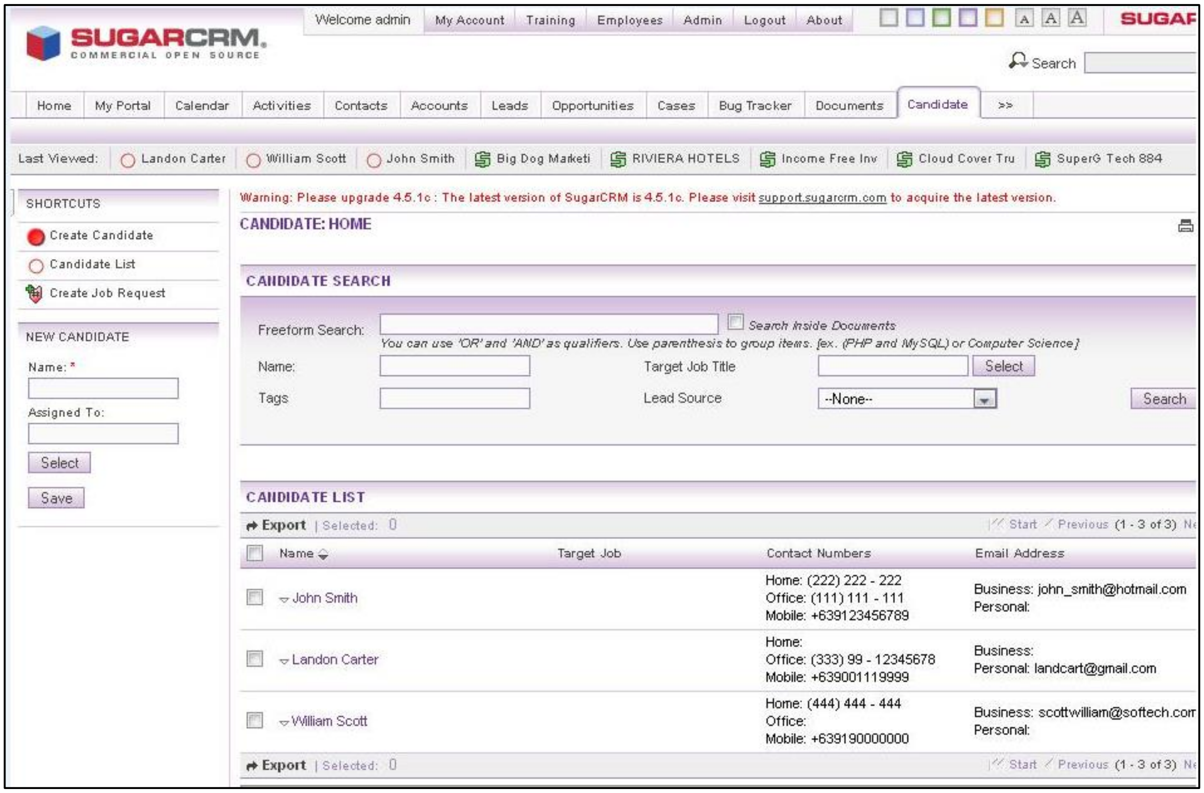


Figure 26: Sugar CRM Candidate Search

Figure 26 shows the candidate search option in Sugar CRM. Searching for a profile is quite easy from here.

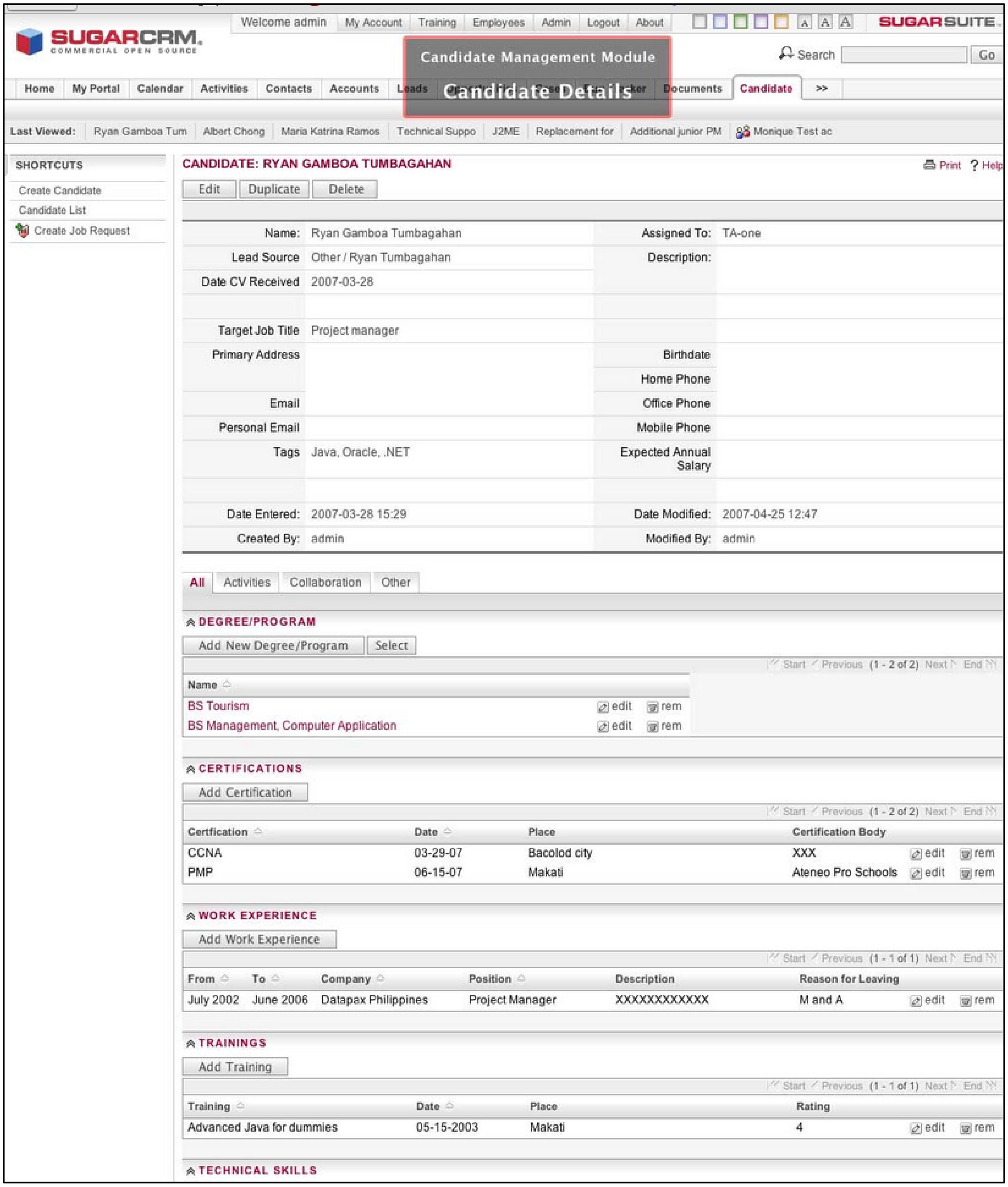


Figure 27: Screen Displaying Applicant Details

Figure 27 shows the details of the candidate searched by the business user in Figure 26 and the profile is viewed through sugar CRM.

Data Analysis

The referrals for the candidates who applied for the job portal and their referral bonus/spending is shown in Figure 6.

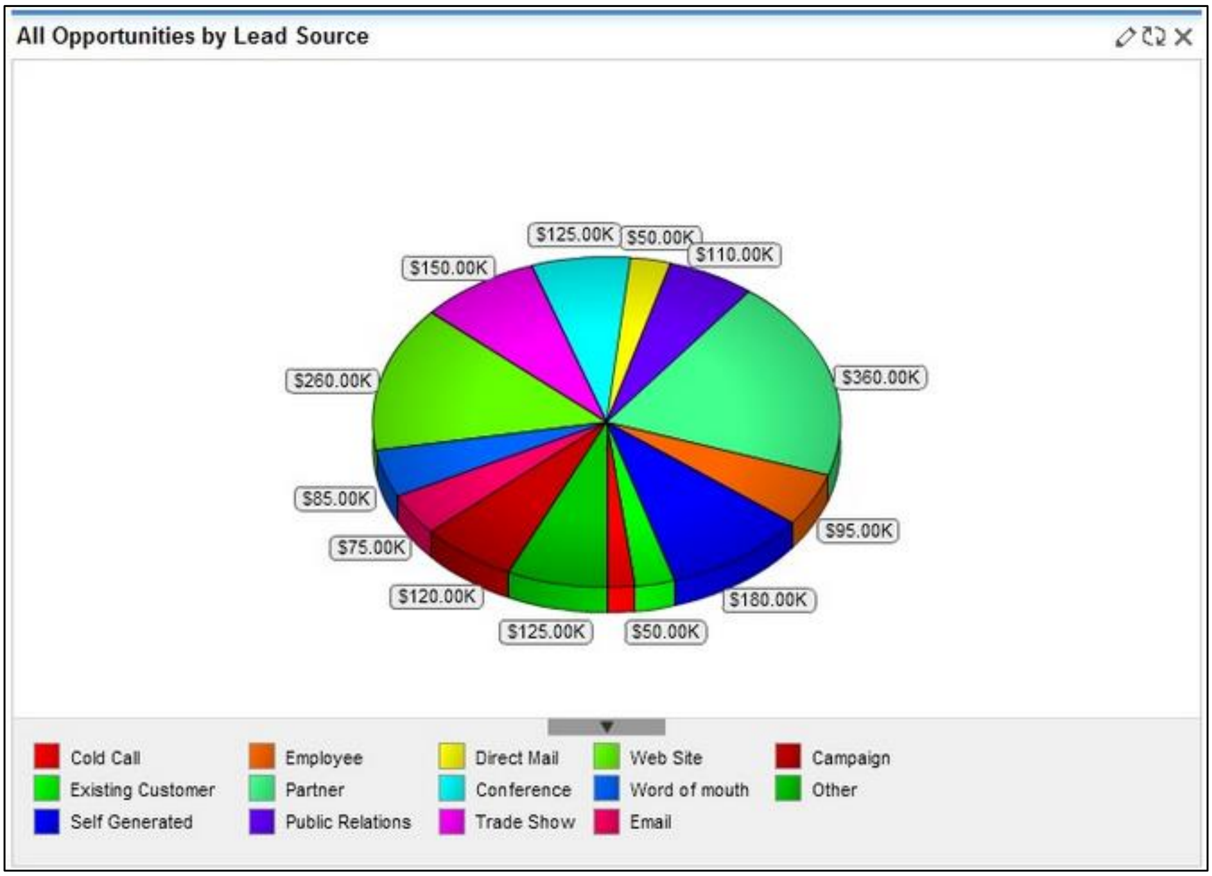


Figure 28: Sample Report

Figure 28 is a sample report of various sources of spending for candidate's selection in Sugar CRM.

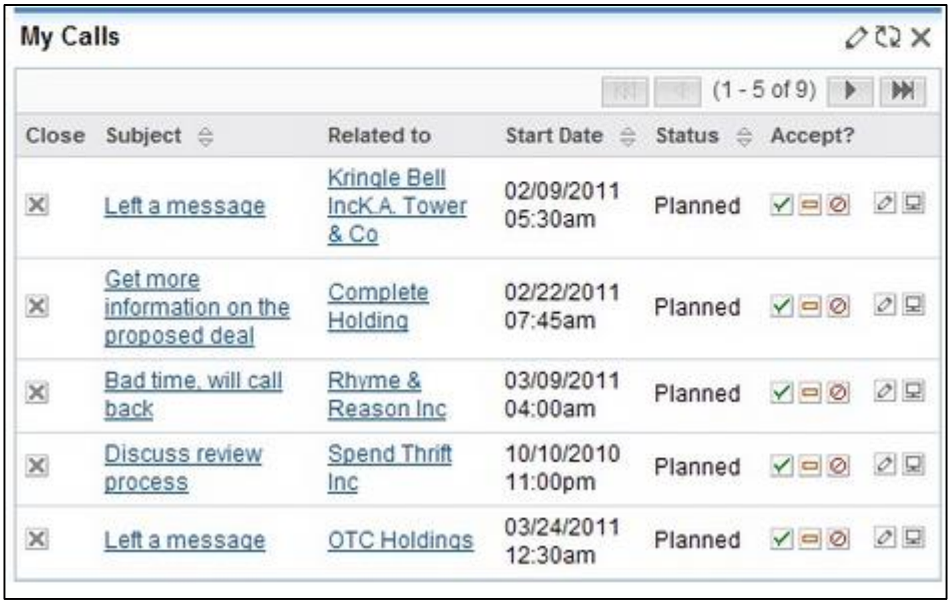


Figure 29: Calls Report

The calls report can be seen from Figure 29 screenshot. You can notice all the functionality available in Sugar CRM developed.

Summary

This chapter covered the data presentation of the HR module application developed and its representation. These data gathered are analyzed using different types of reports/charts like above. We deliver a final summary of the project in the next chapter by explaining the results of data analysis in Chapter IV and also providing answers to questions from Chapter I.

Chapter V: Results, Conclusion, and Recommendations

Introduction

In this chapter the author summarizes the whole project by discussing results and recommendations.

Results

1. What can Sugar CRM do to help in automating the current system?
   A. Automation can be done by setting the relationship between various objects.
   - Position
   - Candidate
   - Job Application
   - Review
   - Job Posting
   - Employment Website

   Automation can be done by setting the relationship between various objects. A relationship allows each record of one object to be linked to multiple records from another object and vice-versa. So, that any changes that made to a record of one object will be automatically updated to the related record of another object.
2. What are the roles of Workflows and Apex classes in the development?
   A. Workflow rules provide benefits such as improving the quality and consistency of data, increasing data integrity, improving efficiency and

productivity, lowering costs and reducing risks. Workflows allows us to automate the following type of actions like

1) Alerts

2) Tasks

3) Field updates

4) Outbound messages

3. What can be done to improve quality of data received?

A. Validation rules helps to improve data quality by preventing user from saving incorrect data. We can define one or more validation rules that consist of an error condition and corresponding error message. Validation rules are fired when user entered data doesn't meet the condition.

Conclusion

Sugar CRM provides a very simple user interface. Features a robust combination of sales, marketing and support with expert collaboration functionality, so individuals across the business can get the crucial information they need right when they need it which helps in total cost reduction and reducing risk factor.

Recommendations

Though the project implementation was successful the main concern was about data migration. The team should be very focused regarding generating the security tokens, adding IP address, mapping the objects and migrating the data from one environment to another environment.

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