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An Agent Based Approach for Lead Management System in Banking Sector

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Abstract: This Paper develops software used for managing Leads. The software is used for banking sector agents/ bank employees who approach the customers. These customers are potential client which are turned into leads by providing them schemes and policies. The software is leveraging the powers of the internet to increase its usability. It helps the banks to sell its products, schemes over the internet via a website.

Keywords: *Lead Management System, Business Process Diagram.*

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I. INTRODUCTION

Lead Management System used in business practice to describe methodologies, systems, and practices designed to generate new potential business client, generally operated through a variety of marketing techniques. Lead management facilitates a business's connection between its outgoing consumer advertising and the responses to that advertising. These processes are designed for business-to-business and direct-to-consumer strategies. Lead management is in many cases a precursor to sales management and customer relationship management [1]. This critical connectivity facilitates business profitability through the acquisition of new customers, selling to existing customers, and creating a market brand. This process has also accurately been referred to as customer acquisition management.

The general principles of lead management create an ordered structure for managing volumes of business inquiries, frequently termed leads. The process creates architecture for organization of data, distributed across the various stages of a sales process, and across a distributed sales force. With the advent of the Internet and other information systems technologies, this process has rapidly become technology-centric, as businesses practicing lead management techniques have shifted much of the prior manual workload to automation systems, though personal interaction with lead inquiries is still vital to success.

We aim to design an agent based approach for lead management system which is used for managing Leads. The software is used for banking sector agents/ bank employees who approach the customers. These customers are potential client which are turned into leads by providing them schemes and policies. The software is leveraging the powers of the internet to increase its usability. It helps the banks to sell its products, schemes over the internet via a website[3]. We make a platform independent application to maintain a database of all the leads created from various sources and all the different services required by each of them. Once the lead information is collected and distributed, it is then transferred to a marketing and/or sales management department, who will continue to implement lead management practices in pursuit of completion of a sale. Established lead management practices should provide the needed connectivity and accountability between those two operational units, and when managed properly, enhances the effectiveness of both operations.

The typical processes for converting customer into new potential business client are Lead Generation, Lead Capture, Lead Allocation, Lead Tracking, and Lead Closure.

The system focuses on how the Leads have to be generated, captured, allocated, tracked and closed. Business engages in a range of advertising media. Recipients of advertising respond, creating a customer inquiry. Respondent's information is captured. Captured information is then filtered to determine validity[3]. Filtered leads are then graded and prioritized for potential. Leads are then distributed to marketing and/or sales personnel. Leads are contacted for prospecting. Contacted and un-contacted leads are entered into personal and automated follow-up processes. Finally in lead closer part, two reports are generated one for those who are converted into new potential client's means those who purchase the product and one for those who leave without purchasing.

The purpose of an effective lead management initiative is to generate new business revenue, increase visibility, and improve the general attitudes of potential clients and the public at large for future business development. While simple in scope, lead flow process can become complex as clients, prospective clients and sales professionals interact .Interactions and subsequent actions and create a variety of potential outcomes, both productive and counterproductive to business development.

The paper is organized as follows: Section II discusses the system requirements related to our proposed methodology. The related research is described as a base for our approach. Section III discusses presents computational models we adopted for an agent based approach for Lead Management System in Banking Sector. System Design are shown in Section IV. Section V contains Conclusions of the results obtained by our work.

II. SYSTEM REQUIREMENTS

A. Hardware Interface Requirements

Here's What You Need to Use the Health Insurance system:
20 GB HDD

- 256 MB RAM
- Pentium IV Processor
- Input Devices: Keyboard, Mouse
- Output Devices: Monitor, Printer

B. Software Interface Requirements

- Programming Language: Java
- Back Hand: MySQL
- Supporting Tools: Adobe Photoshop 6.0, Net Beans 6.0.1, Microsoft @ Word 2007, Microsoft @ PowerPoint 2007,Sql essential, Sql Yog.

C. External Interface Requirements

The interfaces in this section are specified by documenting: the name and description of each scheme, source or input, destination or output, ranges, accuracy and tolerances, units of measure, timing, display formats and organization, and data formats.

The user interface required to be developed for the system should be user friendly and attractive. The interface between the user and the system will be WIMP (Windows, Icons, Menu, Pointers) keeping in mind that the system is to be run through web browser. All operations will be of point and click nature with all navigations performed through windows of the system specifically buttons and menus: The button is activated when the user will click with the left click of the mouse within the bounds of the button. And thus the action associated with it will be carried out. All the operations will be arranged in menu.

D. Communication Interface Requirements

The Lead Management system is three-tier architecture. The client is a thin client who just displays the HTML pages and forms to the user of the system. The database tier stores all the information (characters, lines, etc) in a table. The middle tier does all the transactions and processing of the system. It does the communication between the thin client and the database[1].

E. Performance Requirements

The system will process incoming data and send relevant feedback within a few milliseconds of receiving it. Web users may not be able to have such a fast response as this however, because of bandwidth limitations, especially during peak usage times. The system will also be capable of dealing with large number of users (approx. 1000) simultaneously. Given that expanding nature of the World Wide Web, the above scenario would not be uncommon. The system will be able to maintain response times that are within the normal expectations of a user even during periods of heavy usage.

F. Non-functional Requirements

- **Performance Criteria:** The elapsed time between the submission of documents process between client to agent that between agent to company should be as minimum as possible. Similarly, there is being a minimal gap between the information about client.
- **User friendly:** Our Lead Management system should be more users friendly. The user interface should be kept simple and uncluttered. Since different type of people will interact in this process so our project should be very easy to them to understand.
- **Flexibility:** Our project should be so flexible that whenever we want to make changes in it very easily it can be done.
- **Extensibility:** It should be able to accommodate the variations like: Different schemes should be handled easily, Client interaction after sending his/her details and it should be able for direct money transfer from one place to another.
- **Portable:** Our project should be portable on any platform and available on websites easily and at a faster speed than others.
- **Reusable**: All the client web pages that are being used for client information should be easily get processed so that many clients can interact with us very easily and very fast without any information destroy.

G. Software System Attributes

- Reliability: The health insurance process on the project should be easy and without any mistakes so that clients should take information about all the policies and their interest rate and update by company should be very easy and safe.
- Availability: The project should be available 24 hours a day, 7 days a week. The availability can be measured in terms of MTTR (Mean Time to Repair) and MTBF (Mean Time Between failures). The system will be available to the user whenever the user needs it.
- Maintainability: Our project should be easy to maintain by administrators or by our company. After certain of time system should be added a new policies and our user interactive schemes so that we can deal with our users according to market and time.

III. PROPOSED METHODOLOGY

The proposed methodology is able to design an agent based approach for lead management system which is used for managing Leads. The typical processes for converting customer into new potential business client are Lead Generation, Lead Capture, Lead Allocation, Lead Tracking, and Lead Closure[2].

A. Lead Generation

Lead generation has become popular with businesses because it enables a business to:

- Determine pricing on a per lead basis
- Choose the product or service they wish to offer to prospects
- Select the geographical area that the business is interested in
- Control the number of leads a business wishes to receive per month (this assists with budgeting)
- Pay only for the leads that are received

B. Lead Capture

The strategy of lead capture is effective only when supported by a multi-touching programmed system of delivering meaningful, customized messages and content, to each prospect individually and personally. Such may include; Calls, emails, webinars, white papers and other. To do this in a financially effective manner a preset guide of procedures should be developed. These can be refined as feedback from the lead nurturing process is analyzed.

C. Lead Allocation

Lead allocation is the task of dividing the leads according to the geographical area, language, income and area of interest. Lead Allocation can be done in many ways from one business to the next. Transferring a phone a call, faxing a note and sending an email are unfortunately fairly common methods of handling lead distribution. The lead distribution portion of our system is highly advanced to make the end user, the salesperson, more efficient. Our lead distribution system allows the end user to

select exactly the type of lead format that they would like to receive.

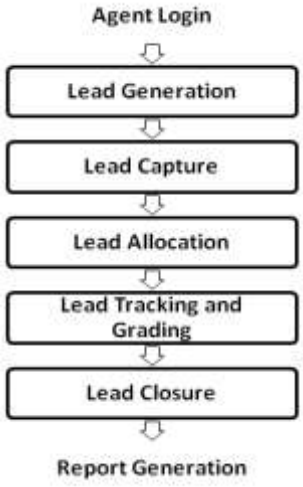


Fig. 1.System Design Concept

D. *Lead Tracking and Grading*

The process of following up with prospects who have expressed interest in a product or service.

As the leads come pouring in from multiple sources, sales has the daunting task of trying to sort out which ones to pursue as qualified and which ones to leave on the table. Sales often spend precious time chasing unqualified leads.

With an increasing number of channels that marketing uses to generate leads, it becomes imperative for the leads to be properly graded with only the hottest leads being passed to sales. Marketing and sales must agree on what a sales ready lead means so the two entities are properly aligned. If marketing can properly grade the leads, then sales will have more time to focus on opportunities to meet monthly and quarterly revenue objectives.

E. *Lead Closure*

Lead Closure is the end phase of lead management system. In this customer is the one who finally decides whether the lead has to be converted into business or dead lead.

Here the customer will either agree or disagree. If he agrees the generated lead is converted into business and the customer is further added into the database and in case he disagrees the lead becomes dead. Finally he will be provided with a reference number for the simplicity of future contact.

F. *Report Generation*

In the end numbers of reports are generated such as Annual reports, Monthly reports, Sales reports, Customer trends. We also generate MIS reports which are Dashboard with live report summaries. In this "Big Picture" always visible, these report are automatically generated and distributed. Automated report triggers on when some specified event occur. Some of the key reports are:

- Ageing report-escalation to higher ups
- Response/turnaround time reports
- Lead conversion report-no of leads converted during a given period
- Lead sorted by Branch/region/sales team

IV. SYSTEM DESIGN

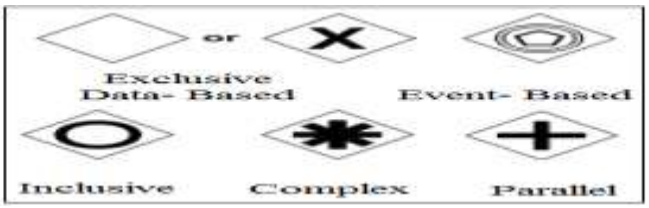
The system consists of six modules that are Agent Login, Lead Generation, Lead Capture, Lead Allocation, Lead Tracking, and Lead Closure. We use Business Process Diagram to show system flow. Models consist of simple diagrams constructed from a limited set of graphical element. They simplify understanding business activities flow and process. Business Process Diagram consist four basic element categories:

- **Flow objects:** Events, activities, gateways
- **Connecting objects**: Sequence flow, message flow, association
- **Swim lanes**: Pool, lane
- **Artifacts:** Data object, group, annotation

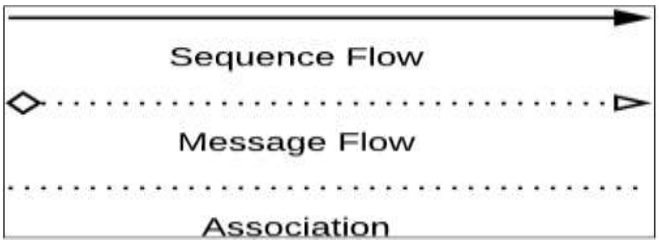
1) Graphical Representation of Flow objects and connecting object.

a) Event

b) Activity



c) Gateways



d) Connecting objects

Fig2. Graphical Representation of Flow objects and connecting object

2) Graphical Representation of Swimlanes and artifacts

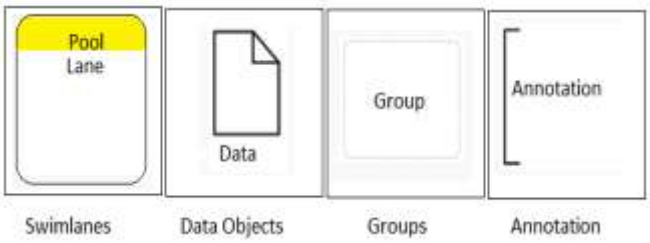


Fig3. Graphical Representation of Swimlanes and artifacts

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A. Agent Login

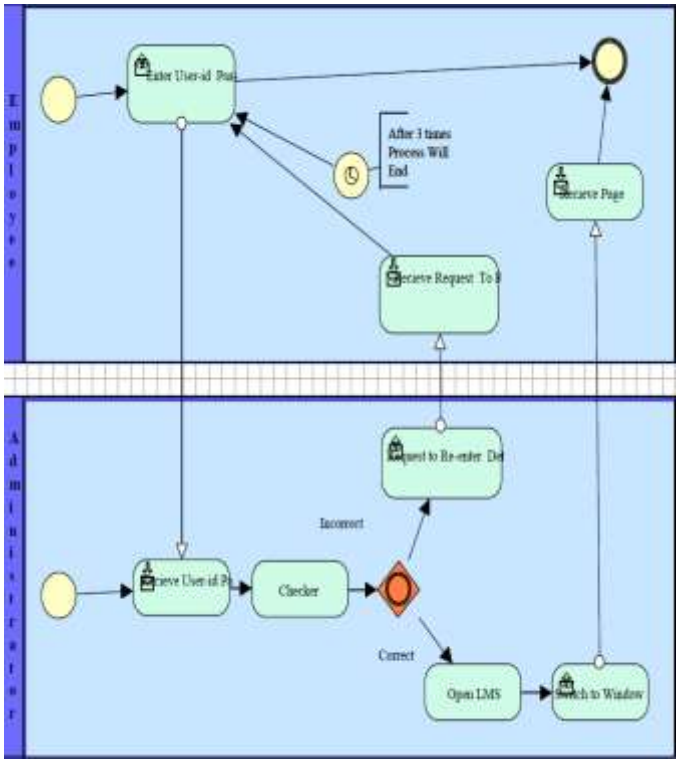

Fig4. Business Process Diagram for Agent Login

B. Lead Generation

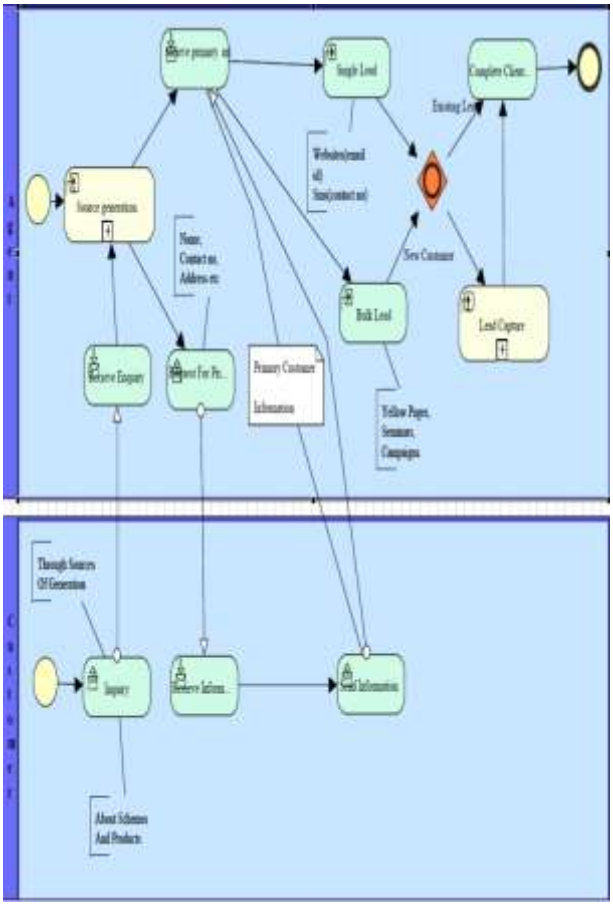

Fig5. Business Process Diagram for Lead Generation

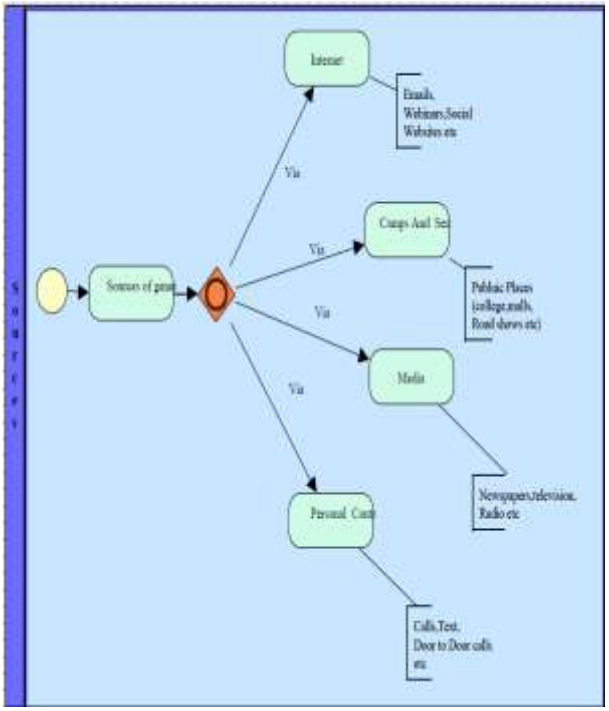

Fig6. Business Process Diagram for sub process Source generation

C. Lead Capture

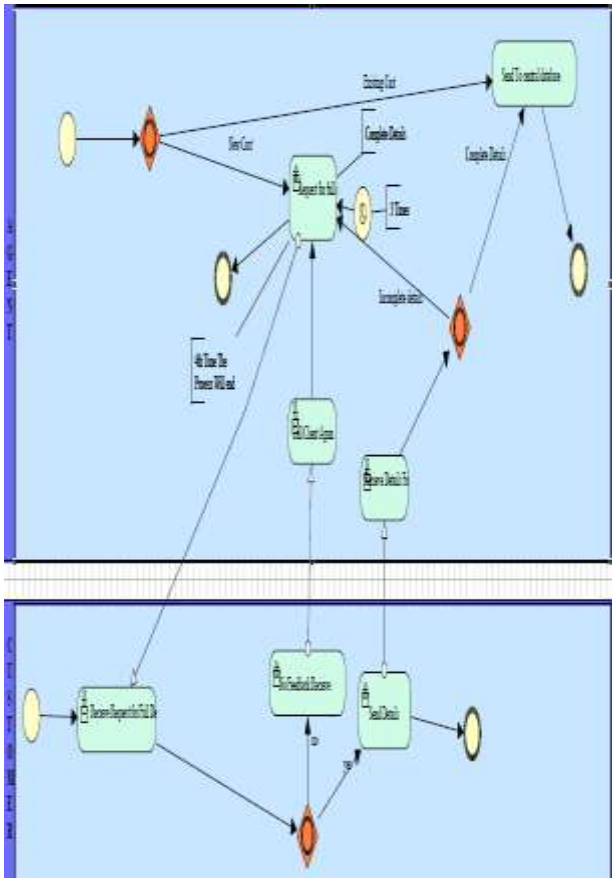

Fig7. Business Process Diagram for Lead Capture

D. Lead Allocation

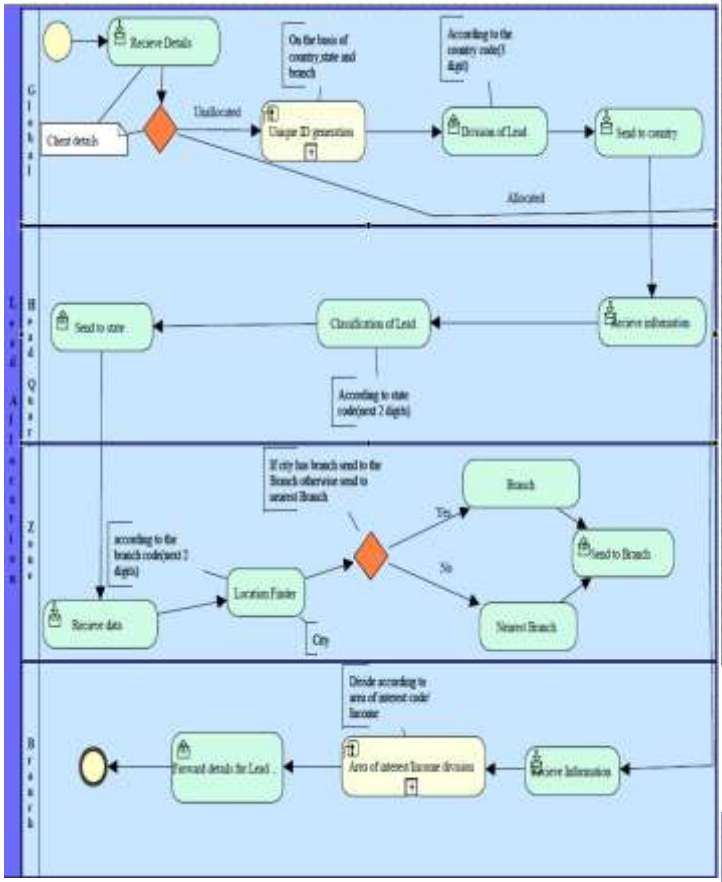

Fig8. Business Process Diagram for Lead Allocation

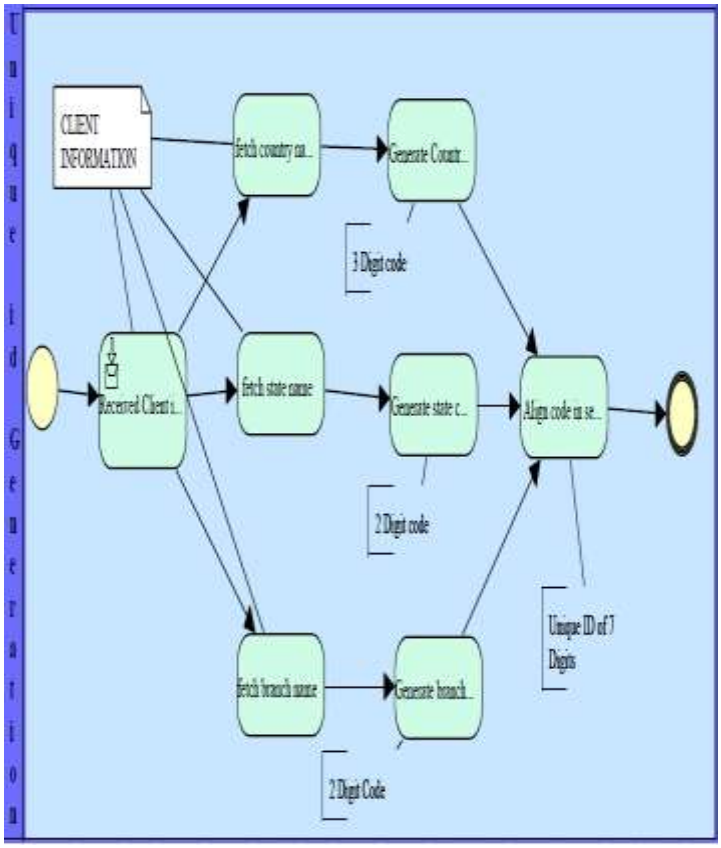

Fig9. Business Process Diagram for sub process Unique ID generation

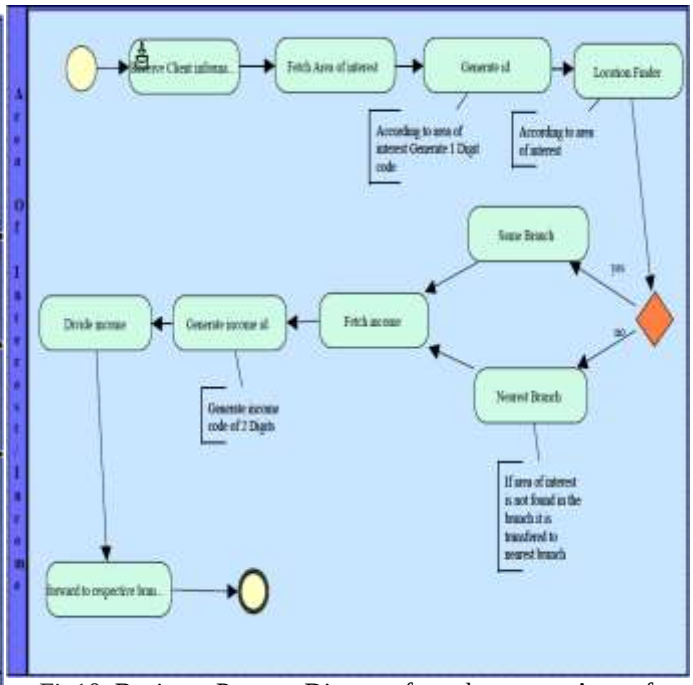

Fig10. Business Process Diagram for sub process Area of Interest/Income Division

E. Lead Tracking and Grading

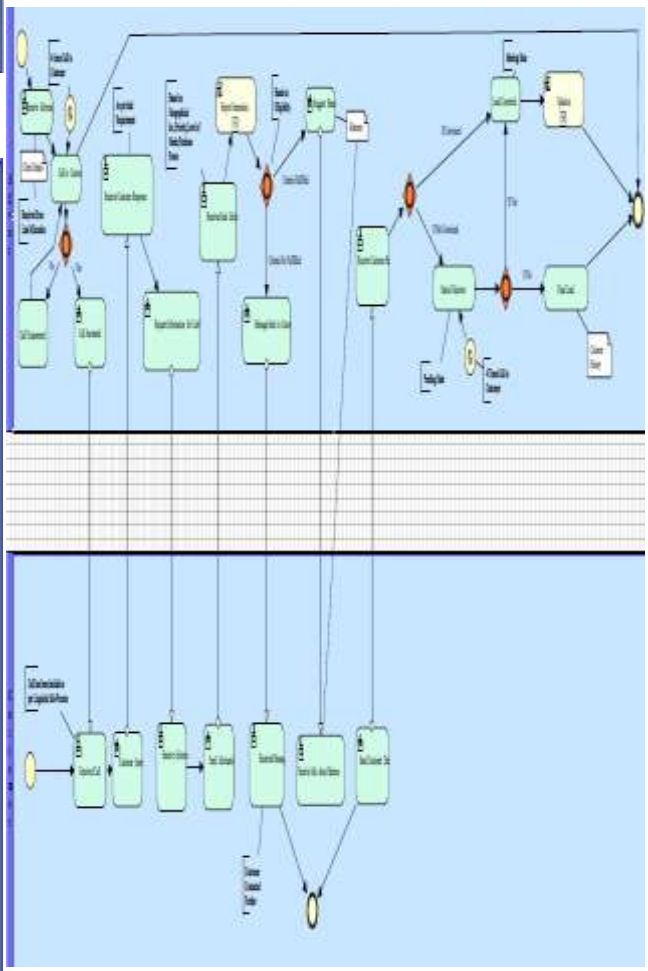

Fig11. Business Process Diagram for *Lead Tracking and Grading*

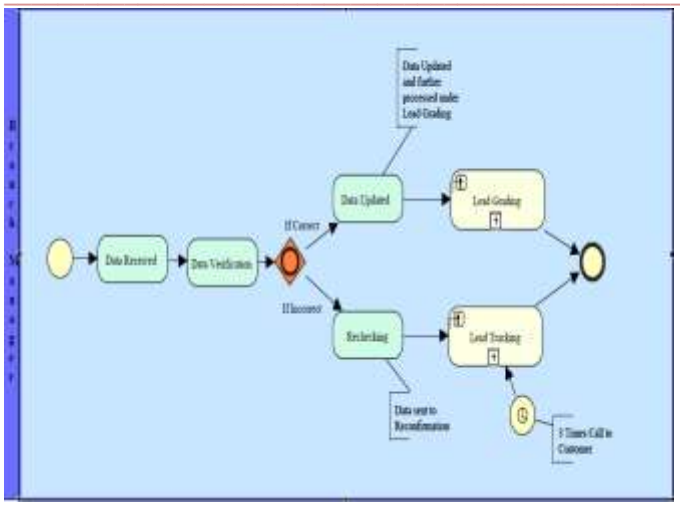

Fig12. Business Process Diagram for sub process Data Updating

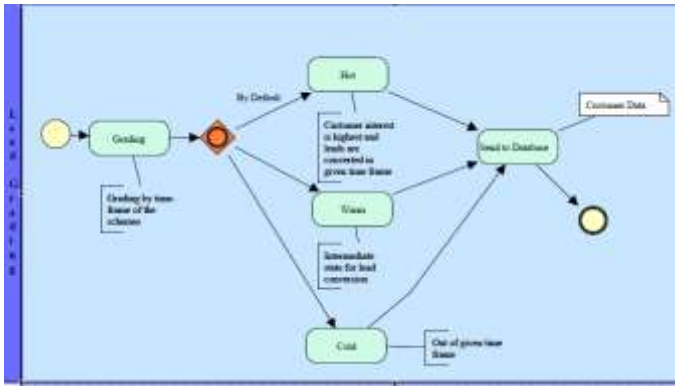

Fig13. Business Process Diagram for sub process Grading

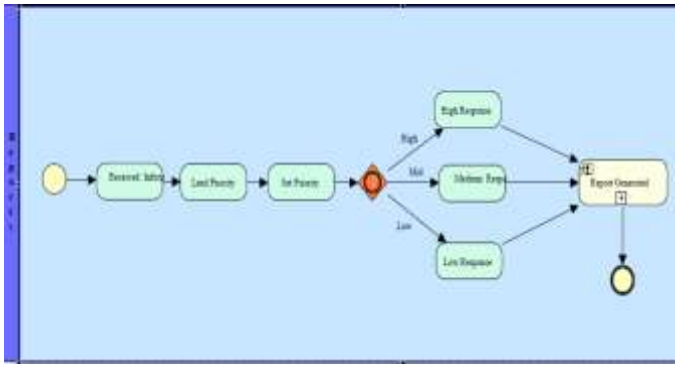

Fig14. Business Process Diagram for sub process Report Generation

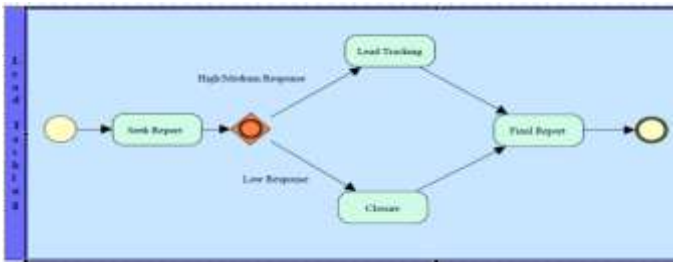

Fig15. Business Process Diagram for sub process Lead Tracking

F. Lead Closure

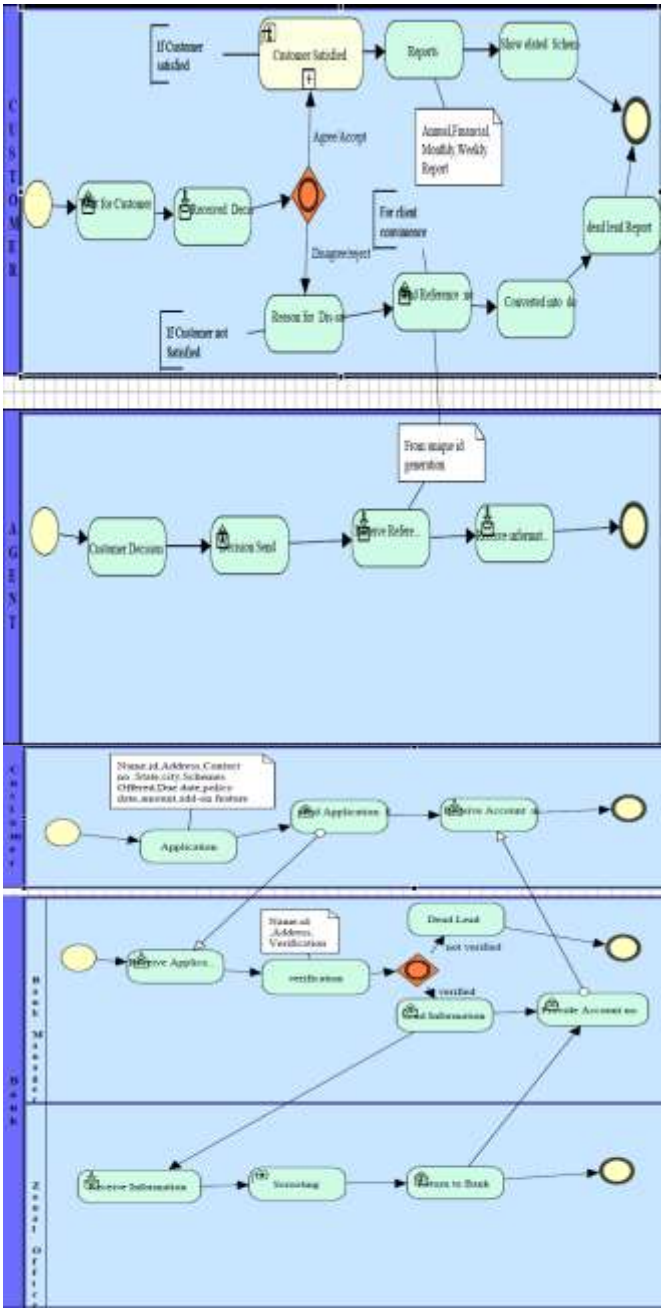

Fig16. Business Process Diagram for Lead Closure

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