

## **Description, Scope and Contract**

### **Description of the Organization:**

HMC is a growing medical practice in North Carolina. The company was formed in 2008 to provide services exclusively to nursing homes and assisted living facilities. The company provides two types of services: care services to patients and medical directorship for facilities.

The company's vision is to become a leading provider of geriatric services in the region. Management plans to achieve this goal by maintaining a low cost structure and by developing strong nurturing relationships with all stakeholders. For example, the company currently outsources all non-core processes, has implemented electronic medical records, and uses electronic data interchange (EDI) to process some of its claims. The company has also developed strategies to create healthy relationships with its customers.

However, with all growing companies, challenges emerge. Cost challenges include workflow processes that are not seamless due to healthcare security and privacy issues. Some tasks that could be automated are still being done manually. There may be two or more hand-offs that do not add value to a process. Challenges in building relationships that provide healthy feedback are also emerging. This is critical because unlike traditional practices, the loss of one customer means the loss of an entire facility of patients.

### **Description and Scope of Project:**

This project will focus on developing a website that can be used for promoting the company's services and interacting with its stakeholders. The website will provide a method for the company to communicate with its current clients and stakeholders as well as market itself to potential clients. The purpose of the website will be to communicate the purpose of the company and inform visitors about the company. It will concentrate on business aspects of the company and will not actually deal with patient or medical information. It will also provide a portal to different online information systems that the company may provide for its stakeholders.

**Team Contract:**

For this project, we recognize that working together as a team allows us to achieve more than working alone as individuals. We understand that each team member will bring a different skill set and perspective to the project and that levels of competence in various areas of the project may vary among team members. With this in mind, we have outlined our expectations of team member contributions and behaviors as follows:

- Each team member will perform at his / her best in the assigned role for this project. Whenever unsure about a submission, a team member will contact the project manager and / or other team members for assistance and guidance.
- Team members will be respectful of each other and each other's contribution to the project.
- Team members will be open to respectful disagreement and constructive criticism.
- Team members will be respectful of each other's time and will be available for meetings whenever scheduled, whether at a physical or virtual place. Team members will be punctual and prepared for discussion at all meetings.
- Whenever extenuating circumstances arise, team members will make every effort to contact other members and inform them about the situation in a timely manner.
- Project assignments will be divided equally among team members by the Project Manager.
- Team members will complete project assignments at least 24 hours before the due date so that project deliverables can be checked and corrections made before submission.
- Team members will complete all assigned work to a quality that reflects the rigor of the course.
- The Project Manager will coordinate meeting times for the group and will notify the team about assignment due dates. The Project Manager will also ensure that the project keeps to schedule.
- If a team member is not performing as expected, the other team members will continue to work on the project in order to receive a good grade but will inform the professor about the problem.

### System Request

**Project sponsor:**

Executive Director

**Business Need:**

Over the past two years, HMC has grown significantly by marketing its services through cold calling techniques and references from existing clients. Currently, the patient load exceeds the capacity that can be handled by a single provider and three other providers are being sought.

As the company expands to include new facilities and providers at different locations, there are two important needs. First, the company needs to find a way to direct customers and staff to a common point where all information systems can be accessed for gathering, retrieving or disseminating data. This is necessary to ensure a more seamless process. Secondly, the company needs to create a professional image to continue marketing its services and interacting with potential customers.

One way in which the company can achieve both goals is to develop a website – a home page with links that can also serve as an interactive tool.

**Business Requirements:**

The functionality that the system will have is listed below: The site will:

- provide a one stop portal for internal and external customers with connection to other web-based applications supporting operations
- provide information on the type of services offered by the company
- allow the company to gather data on potential customers such as facility name, location, affiliations, number of patients, and services sought, to determine the cost-effectiveness of serving the facility.
- allow providers to document and submit non-urgent concerns and requests
- used as an avenue for conducting quarterly or annual customer service surveys.
- used to upload patient data such as labs that are normally faxed in by the facilities

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**Business Value:**

The value from this website is expected to be as follows:

Tangible

- Provide a more cost-effective method for marketing the company's services by utilizing customer data gathered through the site to determine whether or not to proceed to the negotiation stage. Cost avoidance is estimated at 5% of the Executive Director's time or \$5,000 annually.
- Increase revenues by improving workflow processes that allow providers to increase productivity by seeing one additional patient each day during the time that would otherwise be used to enter data in the information systems at multiple locations. Increase in revenues generated is estimated at \$35,000 annually.

Intangible

- Reduce the risk of customer loss by generating timely data on customer perceptions of the quality of the company's services. This data can be used to address problems and issues as they arise.
- Reduce the risk of potential lawsuits by ensuring that information on compliance is available and there is a designated avenue to document and report any issues.

**Special Issues or Constraints:**

- The web page project will only be successful if stakeholders are computer literate and willing to use technology. In the healthcare industry, communication is often by telephone than by other means.
- Training will be necessary to change behaviors to fully utilize the benefit of a web-based system.
- Privacy and security issues must be taken into consideration in providing access to information systems.

<b>Stakeholders</b>	<b>Role</b>
Executive Director	Champion Organizational Management / Training
Office Manager	
Nursing Home and Assisted Living facility administrative staff	System Users
Providers - Physicians and Physician Assistants	System Users
Clients	System Users
Potential Clients	System Users

## The Narrative

### THE CURRENT SET SYSTEM

Currently HMC does not have an external website to market itself. Besides that, HMC internal operation of technology uses several separate interfaces, for each department, to operate its businesses. Accessing separate interfaces has proved to be inefficient and tedious. HMC can benefit from a clear navigation system as well as a more efficient way to enter and data. The following will discuss the current internal operation of HMC use of technology:

#### **Marketing**

- HMC is just entering its growth phase and has not yet launched a website to effectively market its services.

#### **Recruiting**

- HMC currently uses headhunters, online newspapers and word of mouth to recruit providers and staff. The company does not have a website where -it can direct job seekers.

#### **Information to and from the facilities, including customer service feedback**

- There is no dedicated system in place for communicating with facilities. Communication is typically done via telephone and fax.
- For customer service feedback, Google Docs is used to administer surveys that are sent to the facilities. Facility administrators are contacted via email and a link is provided to the Google Docs survey.

#### **Patient Records**

- The company's Electronic Health Records (EHRs) is housed on the company's server. Access to the system is password protected, allowing identification and tracking of users who sign in. The Providers and Office Manager are the only employees allowed to access EHRs. Access is not provided to other employees due to the sensitivity of the data, the legal requirement to protect confidentiality and privacy of patient records, and the inability to limit access to patient data once the system is entered. Consequently, patient orders for labs and specialist referrals are not entered directly by the facilities, but instead faxed back to HMC. The documents are then scanned by HMC Office Manager and uploaded into the Electronic Health Records system manually.

### **Financial Records**

- The company's financial records are currently kept on one computer in the office. Access to the system is password protected. The Executive Director and Office Manager are the only people who can access financial information.

Previously, HMC used Electronic Data Interchange ,a specialized billing software, to process and send claims to Medicare. However, due to the volume of administrative work within the last two months, the company has recently decided to outsource Accounts Receivable. However, summary information needs to be entered into the company's financial system in order to include the status of payments and uncollectible accounts in financial statements. This is currently a manual process.

### **Operational Expenses - Mileage**

- The company tracks some of its revenues such as Provider mileage to different facilities using spreadsheets stored on a USB flash drive. The Excel tracking system used is a linked spreadsheet workbook that includes a mileage matrix with all possible begin and end travel points from one facility to another (developed from MapQuest).

Facility visits are first scheduled by the Office Manager. This is done manually and a hard copy is held in the office. Because the calendar schedule cannot be shared virtually, it is communicated verbally to the office staff, who re-enters the schedule into the Excel mileage spread sheet (duplicating the process). The office staff then look-ups the mileage chart and enter the appropriate mileage by facility on the appropriate sheet of the workbook. The data, once entered, is automatically updated and summarized on the summary page of the workbook providing up to date mileage expense claims. A database system for recording mileage data and generating expense reports would be more efficient.

### **THE NEW SYSTEM**

The new system will consist of two parts; one is an external website for non-employees to use. It will also be used to market the company. It will also be used by current and potential customers as well as job seekers. It will also include a secured VPN portal for providers and facilities to get into the company's internal system. The second part of the system, consist of an internal website, which will be located on a company web server and will be the internal home page of the company. This internal website will serve as a one stop portal to all company employees to conducts their daily company operations.

Details of the first part of new system are provided below:

### **General**

- A professional, yet 'clean' website will be designed and developed to effectively market the company and act as a landing page for all visitors to the site. On its home page, the mission, vision and logo of the company will be communicated along with a brief history of the company. This will provide all users with a clear understanding of the company's purpose and provide brand recognition. It will also let users know the direction the company is headed in the future. An embedded Google map will allow individuals to see the office location and get directions to the office.

With such a system, users will only need to remember one website, click the links to the services they need to access. The website will be built using Wordpress which will allow individuals within the company to maintain the site after the initial set-up without the need of a web developer. By using Wordpress, the company will be able to set up user accounts for specific employees that will allow them to edit certain information on the website. The backend of Wordpress is very easy to use for anyone who has basic computer knowledge. This will provide an easy learning curve for employees who may need to edit the website.

### **Marketing (Potential Customers)**

- From the home page, a link will direct potential customers to another web page where the company's services are detailed. In addition to the services provided, this webpage will also contain a form that will allow users of the system to enter the name of the interested facility, location of the facility, contact name (administrator of the facility), physical address, email, telephone #, fax #, capacity of the facility, occupancy and services required. When data is entered and submitted, it will trigger an email message to the Executive Director of HMC with a link to the data provided by the prospective client. The Executive Director will be able to download the information and use it to conduct further financial analysis to determine the profitability of adding the facility to its portfolio. The information will also be used to contact the facility.

### **Recruiting (Job Seekers)**

- The website will also be used to direct traffic of job seekers to its website. This will be achieved by ensuring effective positioning of the web page in the search engines through the use of appropriate ‘meta names’.
- Once job seekers land on the home page, a link will direct them to the listing of vacant positions. Each job position will provide a form for job seekers to enter relevant information such as first name, last name, mailing address, email address, telephone number. A drop down menu will also allow the job seeker to select position sought, qualifications, years of experience, type of employment desired (whether part time or full time), work location preferred, specialization areas, and years of experience. The job seeker will be able to upload his / her CV.
- When data is entered and submitted, it will trigger an email message to the Executive Director of HMC with a link to the data provided by the prospective job seeker. The Executive Director will be able to download the information and use it to evaluate the candidate’s credentials and to contact selective applicants for face to face interviews.

Details of the second part of the new system are provided below:

### **Communication with facilities / Customer Service Feedback**

#### **(Facility Administrators)**

- From HMC home page, there will be a secure login link for facility administrators that will enable them to login to the internal website of the company, from there, administrators will have access to the following:
  - A contact page that will allow administrators to upload or forward reports on patient’s conditions (lab reports) via email rather than fax.
  - A blog that will allow HMC to post any important information it needs to communicate to the facilities. This will help the company build a more personal relationship with its customers.
  - A link to HMC customer service surveys, administered via Google Docs or other online survey tool, will be provided to solicit regular customer service feedback from the facilities served. The facility administrators will use the surveys to rate HMC on measures of professionalism, timeliness and promptness in executing patient orders and urgent situations.



**Patient Records (Providers)**

- From the home page, there will be a secure login link, that directs the user to the internal website of HMC. Providers and the Office Manager will be able to access the Electronic Health Records (EHRs) of Patients on the HMC's server. This will allow providers to be directed through a common portal to enter patient data, retrieve patient records and download patient reports using the capabilities of the EHR system.

**Financial Records (Executive Director)**

- The financial records will be moved to the company's server. From the home page, there will be a secure login link for the Executive Director to access the financial records of the company. No further changes will be made.

**Billing (External Billing Company)**

- From the home page there will be a secure login link for the billing company to upload monthly Accounts Receivable reports. HMC's Executive Director will be able to access and download the reports for analysis and entry into the company's financial system.

**Operational Expenses – Scheduling and Mileage Tracking (Staff)**

From the home page, a link will be provided where staff can login into a scheduling calendar. Office staff will schedule facility visits for providers and the providers will be able to login and see which facilities they need to visit on any given day. The providers will also be able to update the calendar if changes are necessary.

Office staff will also have access to a mileage tracking database system. The office staff will only have to enter the start and end points of travel for providers. The mileage will be automatically calculated based on predetermined miles which will be calculated between any two facilities. The system will ensure faster and easier entry of mileage and allow staff to generate customized mileage reports by facility and by time period.

## Nonfunctional Requirements & Requirements Analysis Techniques

### Nonfunctional Requirements:

#### 1. Operational Requirements

- The system should open from any web browser.
- The system should be supported by Windows and Mac.
- The system should be portal devices that have access to the internet such as ipad.
- The system should be able to communicate with HMC internal Electronic Health Record (EHR) system.
- The system should be able to communicate with google docs and google maps (Google small business application – Google Docs, Google Maps, Google Scheduling Calendar).
- The system should be able to communicate with the background access database.
- The system should be able to communicate with excel files.
- The system should be able to perform scheduling through a calendar.
- The system should give the user the capability to upload a scanned file.

#### 2. Performance Requirements

- The system should load on the web page in less than 2 secs.
- The system should be available for use 24 hours a day, 365 days per year.
- The system should always give real-time data.
- The system should be easy to navigate.

#### 3. Security Requirements

- Information on services offered should be accessible to all users (external and internal).
- Information on vacant positions should be accessible to all users (external and internal).
- For company's clients they will be provided with a secured login portal through the external website, which will allow them to login to company's internal site, through a VPN connection, from which client will chose the link they need to connect to company's internal system (Access Database and/or Electronic Health Record (EHR) based on their role and function.
- The internal website will have several links, managers and executive will be able to login to all systems.
- Communication systems between HMC and the facilities should be accessible only to facility administrators and HMC office staff.

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- Patient records should be accessible only to Providers and Office Management. Login must be very secure. A time-out feature should be available on this system if left idle for more than 5 minutes to protect the integrity of patient data.
- Financial records should be accessible only to Office Management. Secure login required. A time-out feature should be available on this system if left idle for more than 10 minutes.
- Calendar scheduling of facility visits should be accessible to all Providers and office employees.
- Information on mileage tracking should be available only to office staff.
- Specific links on the internal website will only allow specific users to login to specific links based on their internal role in the company.
- Only IT personnel will be able to login to the backend of the system to modify the external or internal websites.

**4. Cultural and Political Requirements**

- The system should be able to comply with HIPPA policies for viewing patient's information.
- The system should use company colors and logo.

**Requirements Analysis Techniques:**

Mainly, this system falls into the Business Analysis Improvement (BAI) category. Our team will use informal benchmarking analysis as well as duration analysis to achieve improvements for the company.

Informal benchmarking will be done through visiting and looking at similar organization's websites to examine how the competitors have relayed the information to the customers. For instance, we will look, how other companies implemented their site to communicate vision and mission statement, career opportunities and to their customers and clients to their internal systems.

Duration analysis will be used to examine the amount of time spent on each process in the as-is system. Examples of processes that will use duration analysis are: the current scheduling process, the current recruiting process, the current entry to the patient records process, the current financial tracking process and the current operational expenses process. One detailed example of using the duration analysis in one of our processes is the scheduling process; this process is done by one administrative staff member for the provider. The administrative staff member usually does the scheduling and then verbally communicates the information to the provider. Later, the provider might have to change the scheduling based on his/her need. This process would be much easier if the provider is given a link to directly schedule his/her own visits to the facility. It will cut time and eliminate any confusion.

For each of these processes, our team will observe the number of steps, the number of employees as well as the time consumed to perform the whole task. Our team will then design the new system to eliminate any unnecessary steps and integrate processes that involves many different people.

Potential business value: moderate

Project cost: Low-moderate

Breadth of analysis: Narrow-moderate

Risk: low-moderate

## **Information Gathering**

### **Who should be included:**

The key stakeholders to be included in the information gathering process are as follows.

- Executive Director
- Office Manager
- Office Staff
- Administrators from a cross section of long term care facilities that represent the different levels of technology and technology skills available within their facilities
- Providers (Clients)

### **How information should be gathered:**

- Recommendation is to use Interviews, Observation and Questionnaires to gather the majority of information.
  - Interviews will be used to gather information and understand the business needs throughout the business structure.
  - Observations will be done to gain an outside perspective of the business needs as well as check to see if there is any underlying issues in the business that have not been addressed.
  - Questionnaires will be used to gather a broad amount of information from providers (clients) to see how the new system can best meet their needs.
- JAD will be used later in the information gathering process and Document Analysis will be used to understand the current business process and identify inefficiencies in the process.

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**1. Interviews**

\*Keep in mind this is a relatively flat organization with few employees.

Position	Purpose of the interview	Example Questions
<b>CEO / Executive Director</b>	<ul style="list-style-type: none"> <li>• Discuss vision of the marketing website.</li> <li>• Discuss a vision of the new system.</li> <li>• Current problems with report generation</li> </ul>	<ul style="list-style-type: none"> <li>• What is the vision for company colors and logo ?</li> <li>• Type of information on the site?</li> </ul>
<b>Office Manager</b>	<ul style="list-style-type: none"> <li>• Current overview of the system</li> <li>• Current problems with scheduling process.</li> <li>• Current problems with the financial process.</li> <li>• Current problems with mileage tracking and re-imbusement process.</li> <li>• Current issues with recruiting.</li> <li>• Current issues with communicating with our clients and providers.</li> </ul>	<ul style="list-style-type: none"> <li>• Challenge with the current system?</li> <li>• How can we reduce the number of employees working on each process?</li> <li>• How can we cut costs for recruitment?</li> <li>• How do we make it easier to communicate with our clients?</li> </ul>
<b>Facility Administrative Staff</b>	<ul style="list-style-type: none"> <li>• Discuss step-by-step process of operation for every portion of the as-is system. This will enable us to get a low level and detailed information on the current system.</li> </ul>	<ul style="list-style-type: none"> <li>• How many employees work on a specific process?</li> <li>• How long does a specific process take?</li> </ul>

**a. Designing Interview Questions:**

Suggestion is to use Open-Ended questions first to get a broad overview of the processes, followed by Probing questions. Due to the current operational set up, I believe it would be difficult to get definite answers to close-ended questions. The staff most-likely have not taken note of the specifics of what they do, nor do they metrics or key performance indicators calculated. The Executive Director in particular tends to give answers that provide a broad overview. We will use open-ended questions to open the line of communication, then ask specific questions based on their response.

Example of how this would be performed.

**Question:** “What do feel is the biggest problem with the current system?” (Open-ended)

**Response:** “It is not easy to use and hard to find the information that I need.” (Example response)

**Specific Follow-up Question:** What information do you need it should provide for you? (Specific question based upon response)

Examples of open-ended questions:

- How do you currently recruit new providers?
- What frustrates you when using the system?
- What are some improvements you would like to see in the new system?
- What do you want your customers to know about your company?
- How do you currently schedule provider visits?
- What is the process for entering and tracking mileage?
- What problems have you faced in responding to

Examples of probing questions:

- Why do you have two different people entering and tracking the same data?
- Can you give me an example of an emergency situation from a facility that did not meet facility expectations? Why?

**b. Preparing for the interview:**

- Interviewer needs to explain to the interviewee the reason for the interview prior to the interview.
- Prepare a list of open-ended (starter) questions.
- Explain the purpose of recording the interview so they do not feel nervous.

**c. Conducting the interview**

- Need to build strong rapport with all interviewees
- Seek to be a ‘helper’ to solve problems
- Build trust
- Record the interview to take notes from at a later time
- Clarify opinions (get facts to support statements)
- Encourage the interviewee to ask questions

**d. Post-interview follow-up**

- Listen to the recording of the interview and take notes of key points
- Prepare the interview report within 48 hours
- Send copy to interviewee for corrections

**2. Questionnaires**

Questionnaires should be distributed to all our facilities and current providers (clients) via an online survey application. They will receive a link to the online survey application via email. The questionnaires will ask broad questions such as:

- Would you like to conduct your own scheduling?
- Would you to enter patient information if given access our system?
- How would you like to provide feedback of our service?
- Would you be interested in reading company newsletters?
- How do you view our company serving you better?

**3. JAD analysis will be conducted later in the process after the interviews and the questionnaires have been performed.**

- **Participants of the JAD sessions:**
  - i. Office Managers- will attend the session to give information about the as-is system and information on their vision of the new system.
  - ii. Administrative Staff – will attend the session to give a detailed level of the problems they face in the as-is system and its priorities.

**4. Document Analysis**

The following documents will need to be analyzed to perform the improvements necessary for our processes:

- The scheduling and mileage tracking excel files
- Current Customer surveys
- Current financial records

**5. Observations**

The following processes will be observed:

- Recruiting
- How do we gather information to and from facilities and how do we get our customer feedback
- Patient's data entry process
- Scheduling process for providers
- Operational expense and mileage re-imburement process.

Our team will observe these processes by spending half a day with each employee/employees who are responsible of performance. During the observation, our team will be recording necessary steps of the process and potential ways to improve it. Observations will be performed in an informal manner to ensure that the employees do not feel intimidated or nervous.



## **Functional Modeling**

### **1. ACTIVITY DIAGRAMS**

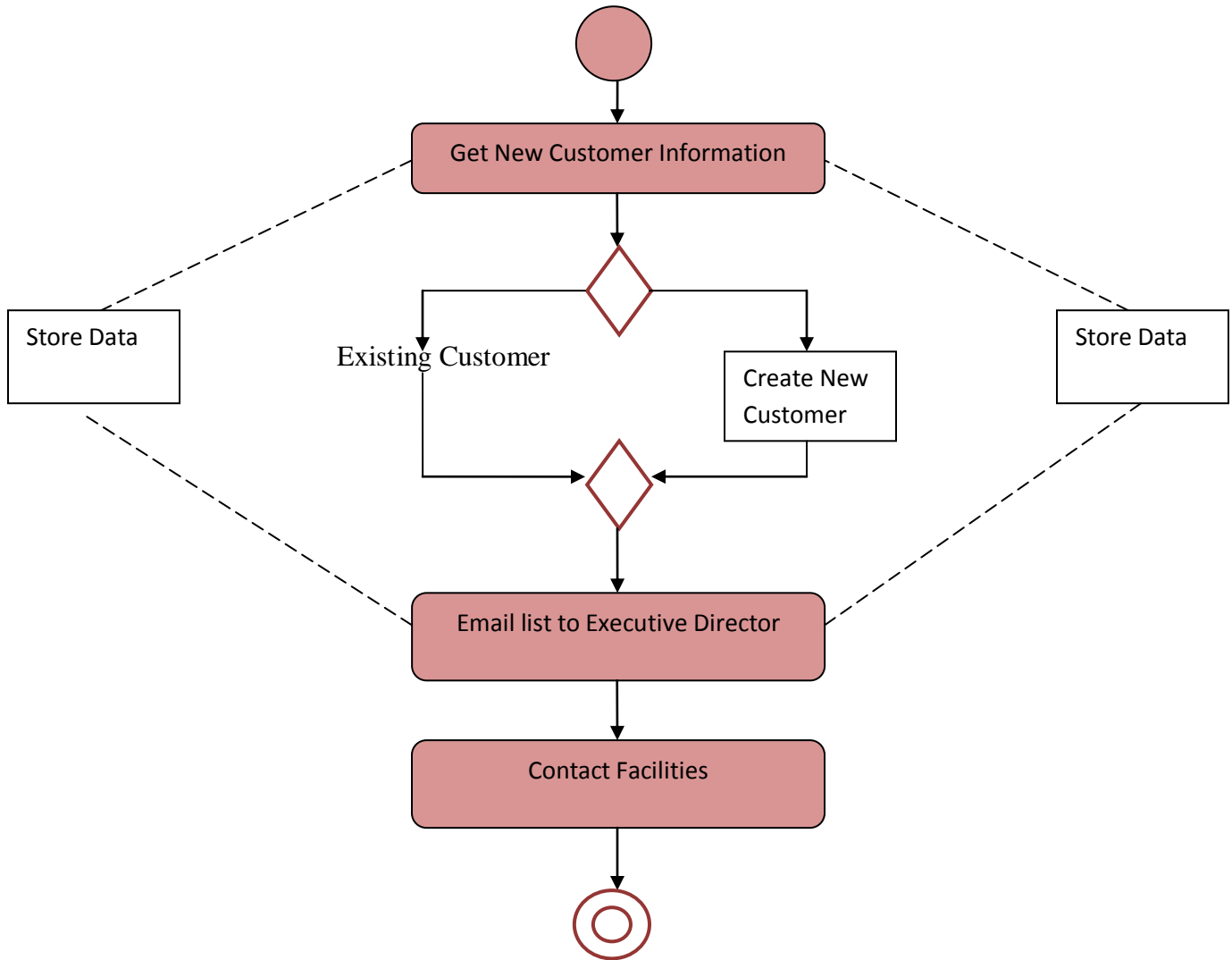
- Marketing of the company's services
- Employee recruitment
- Facility communication
- Provider communication
- Entering of billing data into financial system
- Tracking of mileage expense

### **2. USE CASES**

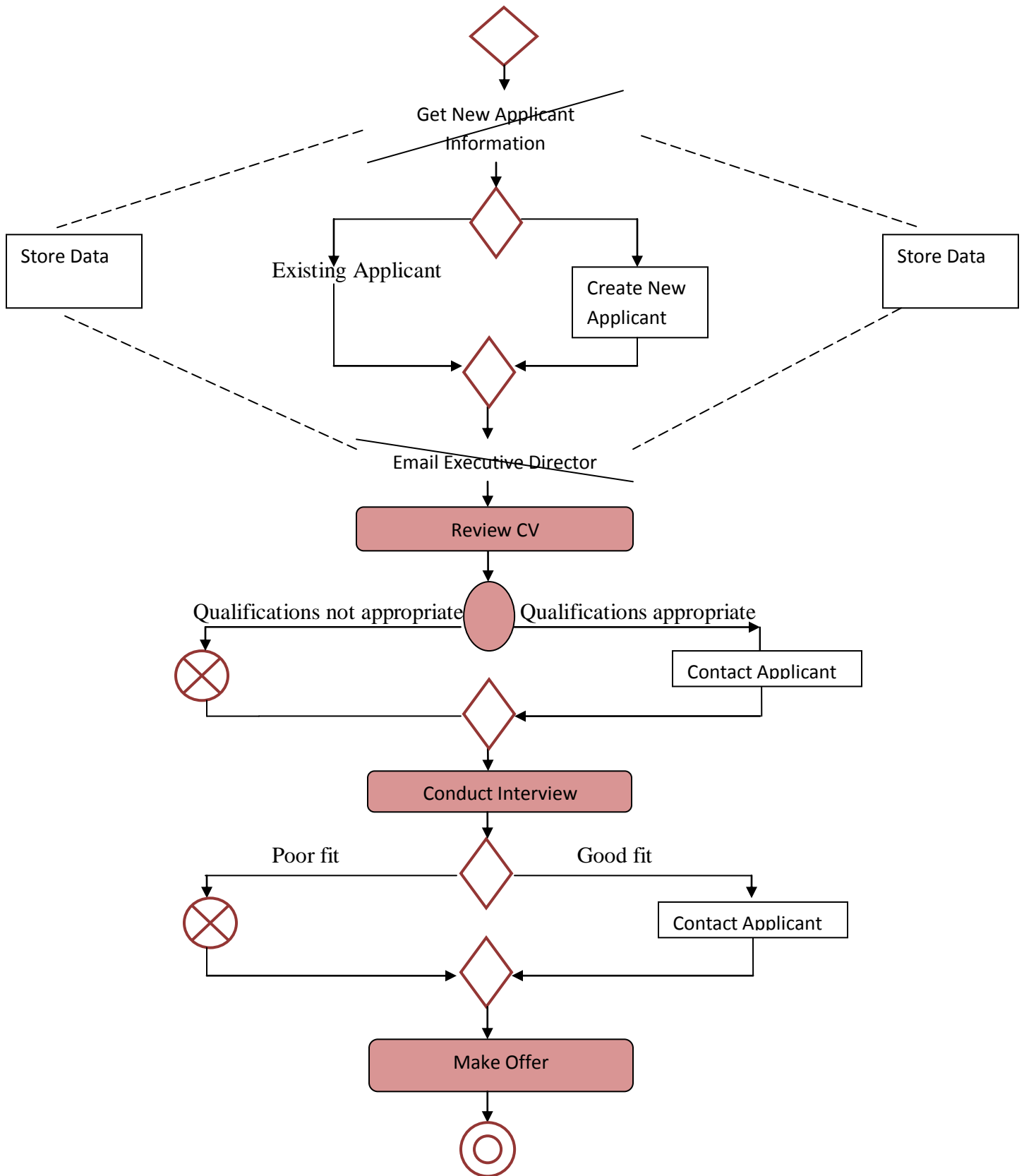
- Market company services
- Recruit employees
- Facilitate facility communication
- Facilitate provider communication
- Enter billing data into financial system
- Track mileage expense

### **3. USE CASE DIAGRAM**

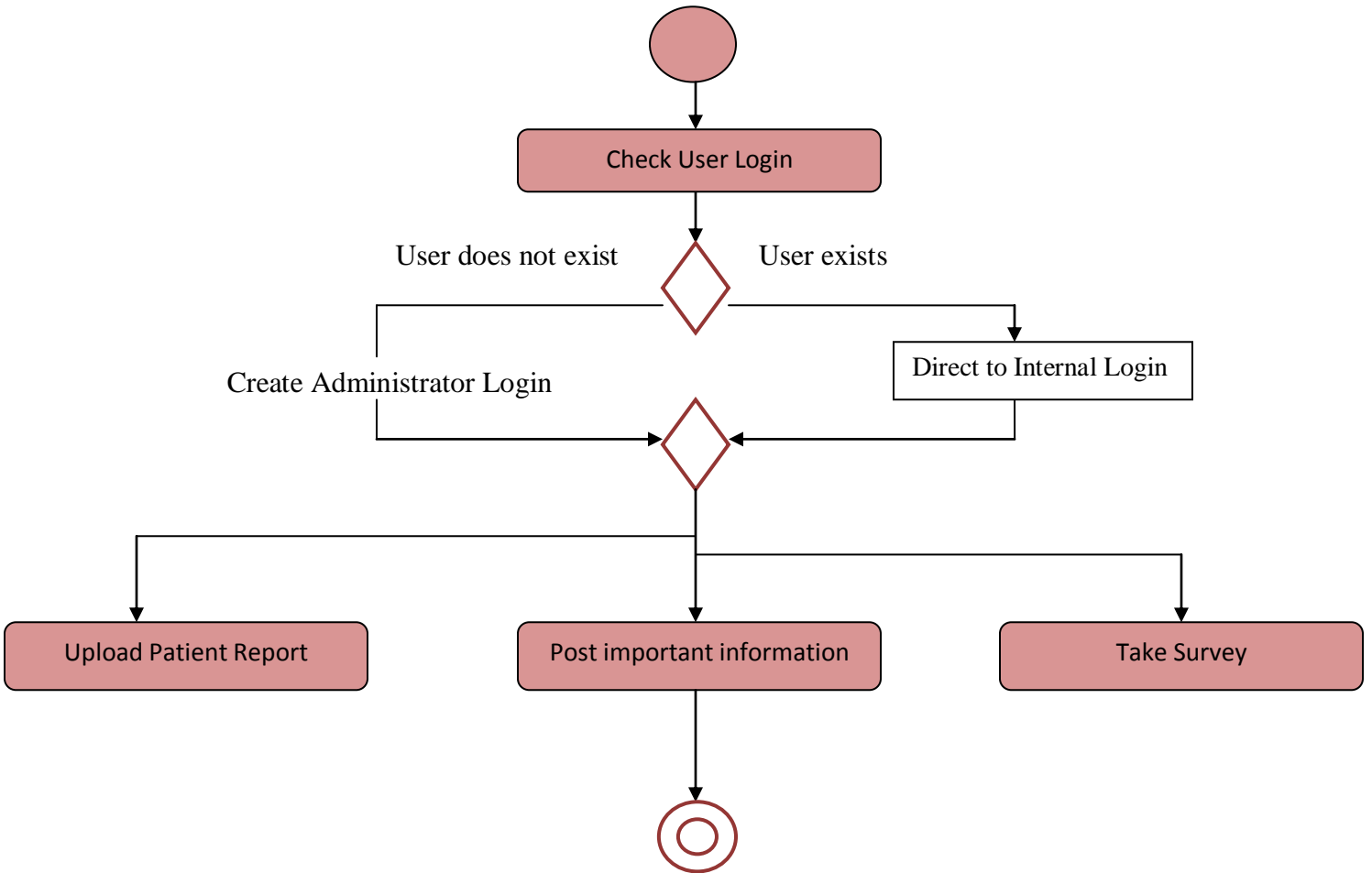
Activity Diagram for Marketing the Company's Services



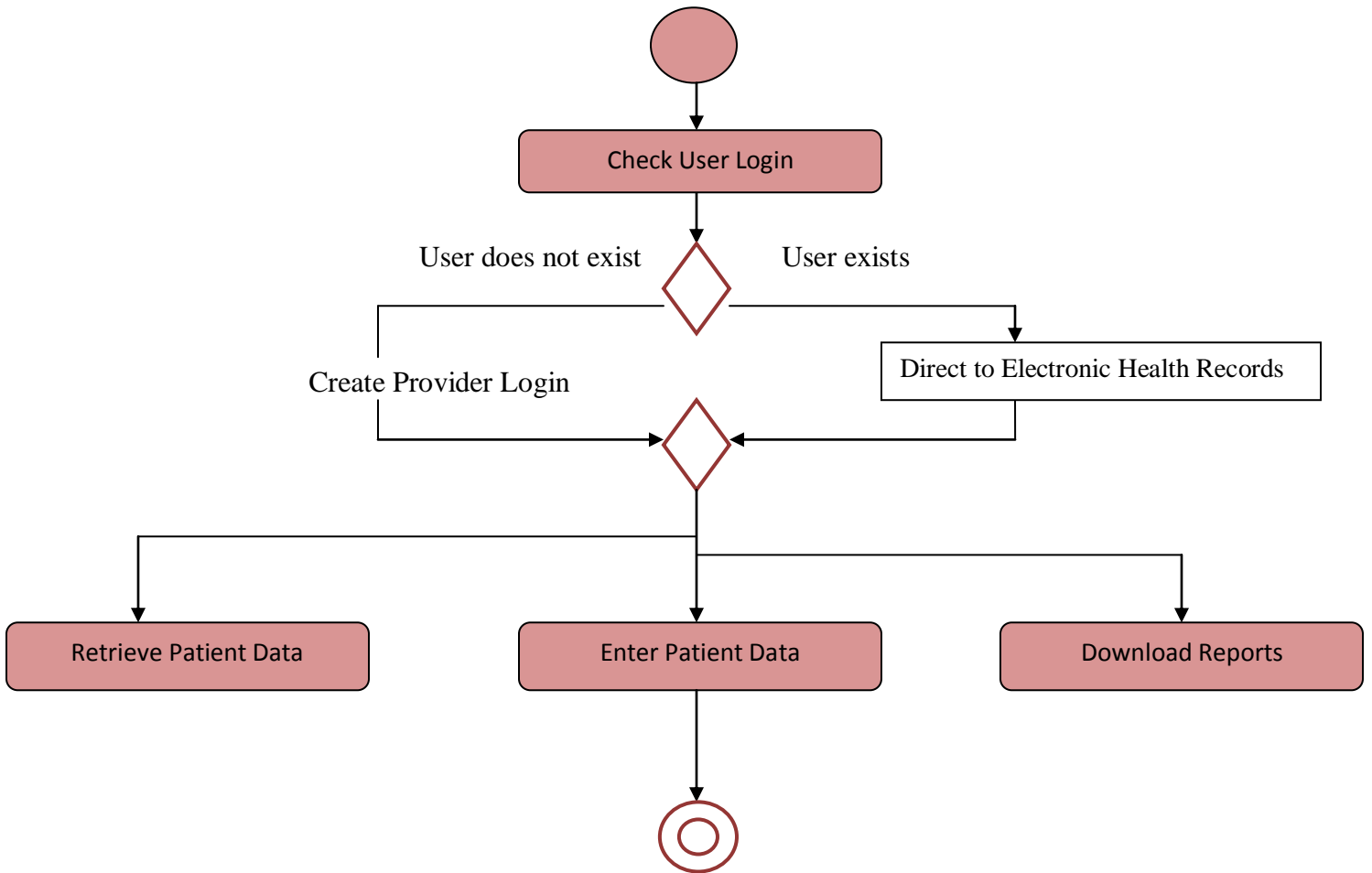
Activity Diagram for Recruitment



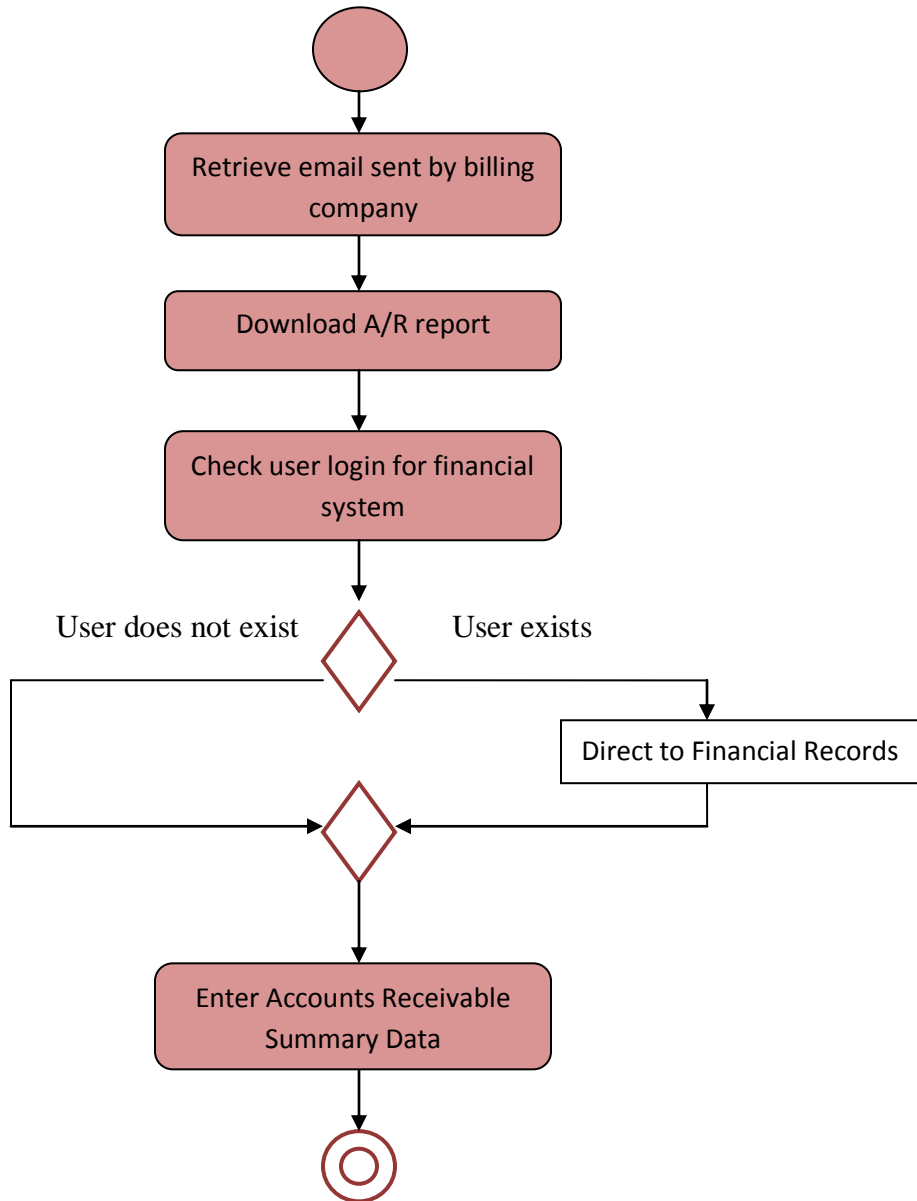
Activity Diagram for Communicating with Facilities



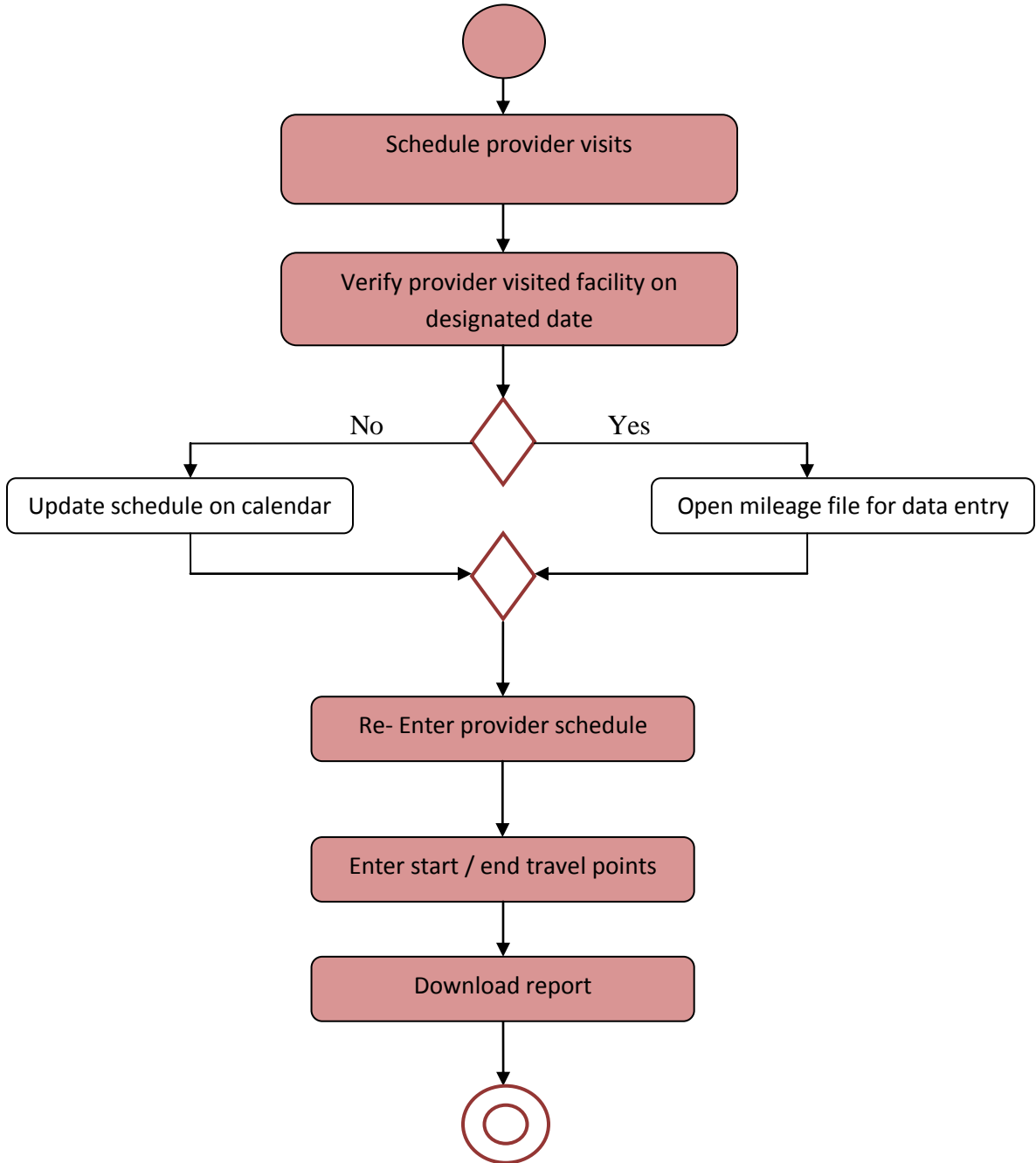
Activity Diagram for Provider Communication



Activity Diagram for Billing



Activity Diagram for Tracking of Mileage Expense



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**Market Company Services**

Use Case Name: Market services	ID: 001	Importance Level: High
Primary Actor: Office Manager	Use Case Type: Detail, Essential	
<p>Stakeholders and Interests:</p> <p>Executive Director: wants to ensure that services are marketed to all potential customers as an opportunity to increase company revenues</p> <p>Facility Administrator: wants to ensure that services received meet patient needs.</p> <p>Providers: want to ensure that the type of services provided are understood</p>		
Brief Description: This use case describes how the services of the company are marketed.		
<p>Trigger: Recommendations, identification of new customers, low annual revenues, low profitability</p> <p>Type: External</p>		
<p>Relationships:</p> <p>Association: Executive Director, Facility Administrator</p> <p>Include: Contacting facilities</p> <p>Extend:</p> <p>Generalization:</p>		
<p>Normal Flow of Events:</p> <ol style="list-style-type: none"> <li>1. The Office Manager prepares a list of potential facilities</li> <li>2. The Office Manager checks whether the facility has been entered into the company's database If the patient does not exist in the database, the S-1: data for new customer sub-flow is performed</li> <li>3. The Office Manager emails the customer list to the Executive Director</li> <li>4. The Executive Director contacts potential facility administrators</li> </ol>		
<p>Sub-Flows:</p> <p>S-1: New customer data</p> <ol style="list-style-type: none"> <li>1. The Office Manager enters into the company's database the name of the facility, physical location, mailing address, name of administrator, telephone, fax, email, and capacity of facility.</li> </ol>		
Alternate/Exceptional Flows:		



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## Recruit Employees

Use Case Name: Recruit Employees	ID: 002	Importance Level: High
Primary Actor: Executive Director	Use Case Type: Detail, Essential	
Stakeholders and Interests:  Executive Director: wants to ensure that vacancies are filled in a timely manner  Owners/ Investors: want to ensure that staff recruited add value to the company  Candidates: want to ensure that they receive a fair offer		
Brief Description: This use case describes how the company recruits employees.		
Trigger: Vacant position, acquisition of new facilities  Type: Internal		
Relationships:  Association: Executive Director  Include: Review of CV, Conduct interview  Extend: Create a new applicant  Generalization:		
Normal Flow of Events:  <ol style="list-style-type: none"><li>1. The Office Manager retrieves applicant information</li><li>2. The Office Manager checks to see whether applicant has been entered in the company's database If the applicant is not in the database, The S-1 sub-flow for adding new applicants is performed.</li><li>3. The Office Manager emails applicant information to the Executive Director</li><li>4. The Executive Director review applicant's CVs If the applicant's qualifications are not appropriate for the job, The S-2: unqualified applicant sub-flow is performed</li><li>5. The Executive Director contacts the applicant</li><li>6. The Executive Director conducts the interview If the applicant is not a good fit for the company The S-3: unqualified interviewee sub-flow is performed</li><li>7. The Executive Director makes an offer to the candidate</li></ol>		

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SubFlows:

S-1: New applicants

1. Enter data on applicant name, contact information, area of specialization, years of experience, education and certifications

S-2: Unqualified applicants

1. Thank applicant for responding
2. File applicant information

S-3: Unqualified interviewee

1. Thank interviewee for attending the interview
2. File applicant information for a period of 1 year

Alternate/Exceptional Flows:

- S-4: The Executive Director proposes alternative offers for negotiation.

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**Communicate with Facilities**

Use Case Name: Communicate with facilities	ID: 003	Importance Level: High
Primary Actor: Facility Administrator	Use Case Type: Detail, Essential	
Stakeholders and Interests:		
Facility Administrator: wants to ensure timely feedback to the company		
Providers: want to ensure timely feedback from facilities		
Executive Director: wants to obtain feedback on the quality of customer service provided		
Brief Description: This use case describes how the facilities communicate with the company		
Trigger: Annual customer service review, customer complaints, reportable incidents, policy changes		
Type: External		
Relationships:		
Association: Executive Director, Facility Administrator, Providers		
Include: Upload patient report, Enter patient data		
Extend: Create user login		
Generalization:		
Normal Flow of Events:		
<ol style="list-style-type: none"> <li>1. Check user login If user does not exist, The S-1: Create user login sub-flow is performed</li> <li>2. Enter system</li> <li>3. Post information Take Survey Upload reports</li> </ol>		
Sub-Flows:		
S-1: New administrator login <ol style="list-style-type: none"> <li>1. Verify user authority</li> <li>2. Enter effective dates</li> <li>3. Create user name and password</li> </ol>		
Alternate/Exceptional Flows:		

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**Communicate with Providers**

Use Case Name: Communicate with Providers	ID: 004	Importance Level: High
Primary Actor: Providers	Use Case Type: Detail, Essential	
Stakeholders and Interests:  Providers: want to ensure accessibility of entering and retrieving patient data  Executive Director: wants to ensure timely update, entry accuracy, security and confidentiality of patient records  Facility Administrators: want to be able to obtain complete patient history upon request  Office Manager: wants to ensure that billing matches patient visits		
Brief Description: This use case describes how Providers communicate with Electronic Health Record system		
Trigger: Patient encounter, scheduled follow up, request for patient history		
Type: Internal		
Relationships:  Association: Providers, Patients Include: Retrieve Patient Data, Enter patient data, Download report Extend: Create user login Generalization:		
Normal Flow of Events:  1. Check user login If user does not exist, The S-1: Create user login sub-flow is performed 2. Enter system 3. Enter patient data Retrieve patient data Download reports		
Sub-Flows: S-1: New provider login 1. Verify user authority 2. Enter effective dates 3. Create user name and password		
Alternate/Exceptional Flows:		

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**Entering of Billing Data into Financial System**

Use Case Name: Entering of Billing Data into Financial System	ID: 005	Importance Level: High
Primary Actor: Office Manager	Use Case Type: Detail, Essential	
<p>Stakeholders and Interests:</p> <p>Executive Director: wants to ensure positive cash flow for the company</p> <p>Providers: want to ensure claims for all encounters are settled</p> <p>Office Manager: wants to ensure financial system is maintained up to date</p>		
Brief Description: This use case describes how billing data is entered into the financial system.		
Trigger: Receipt of A/R Report from billing company		
Type: External		
<p>Relationships:</p> <p>Association: Executive Director, Office Manager</p> <p>Include:</p> <p>Extend: Create user login</p> <p>Generalization:</p>		
<p>Normal Flow of Events:</p> <ol style="list-style-type: none"> <li>1. Retrieve email from billing company</li> <li>2. Download Accounts Receivable report</li> <li>3. Check user login for financial system If user does not exist, The S-1: Create user login sub-flow is performed</li> <li>4. Enter system</li> <li>5. Enter Accounts Receivable summary data</li> </ol>		
<p>Sub-Flows:</p> <p>S-1: New user login</p> <ol style="list-style-type: none"> <li>4. Verify user authority</li> <li>5. Enter effective dates</li> <li>6. Create user name and password</li> </ol>		
Alternate/Exceptional Flows:		

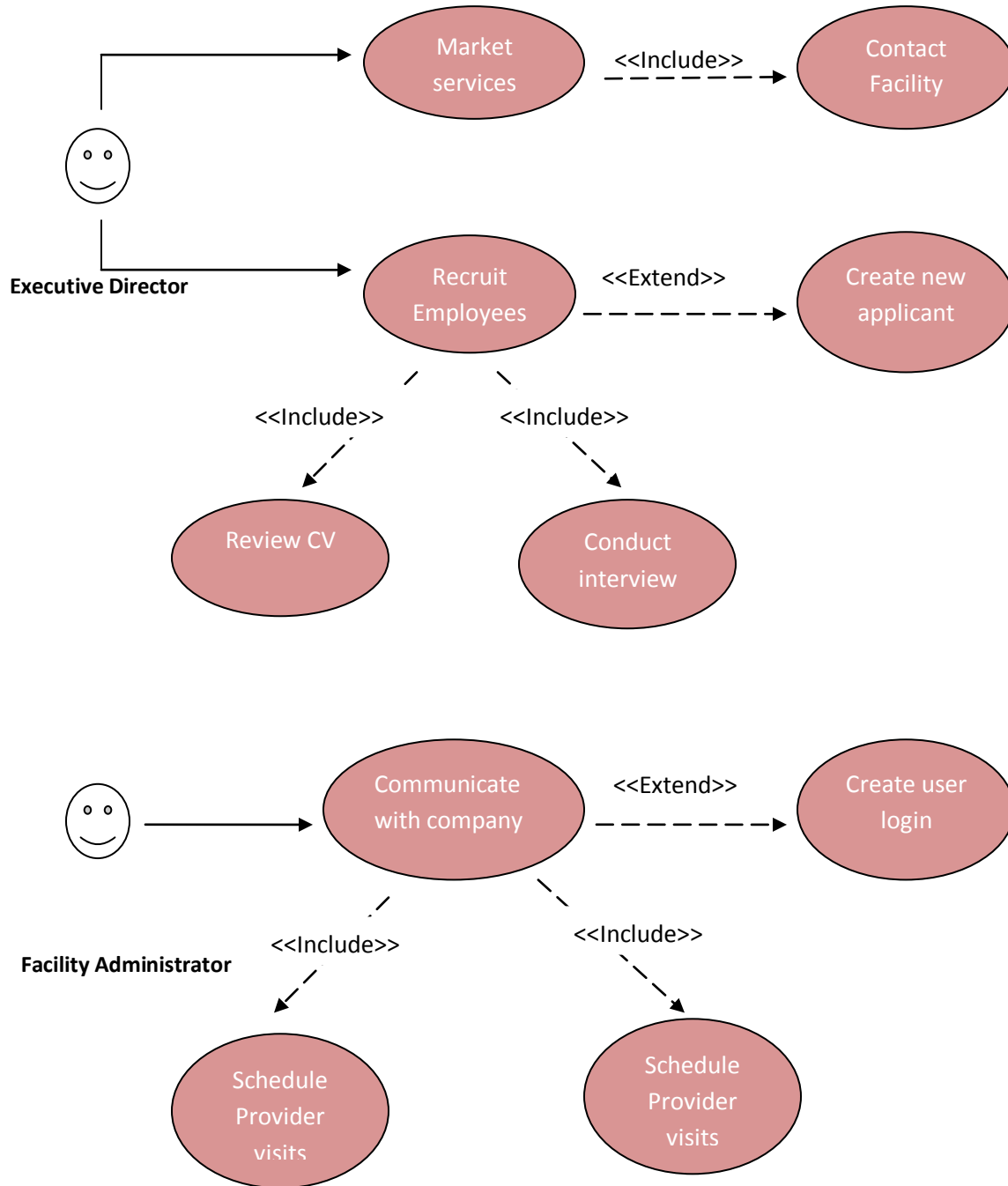
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**Tracking of mileage expense**

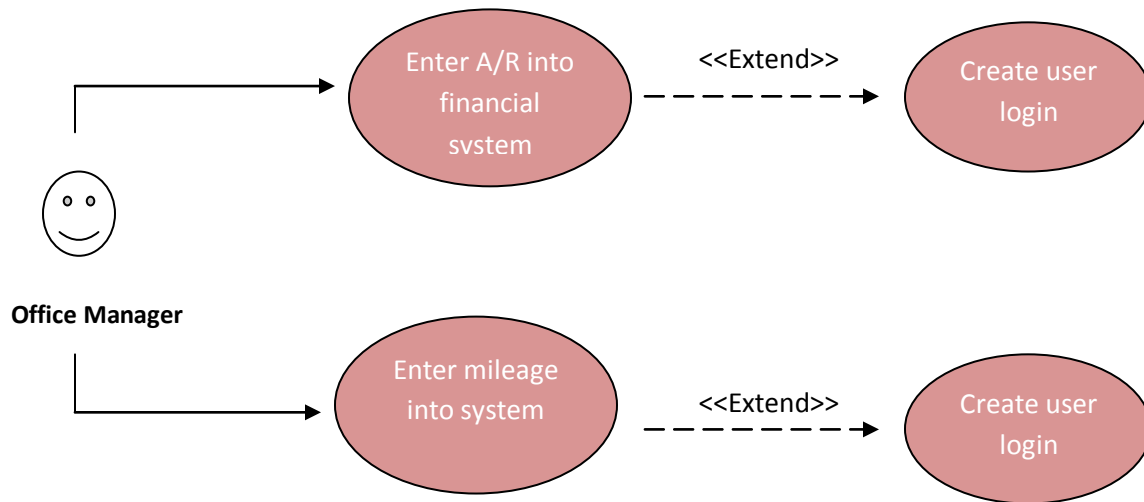
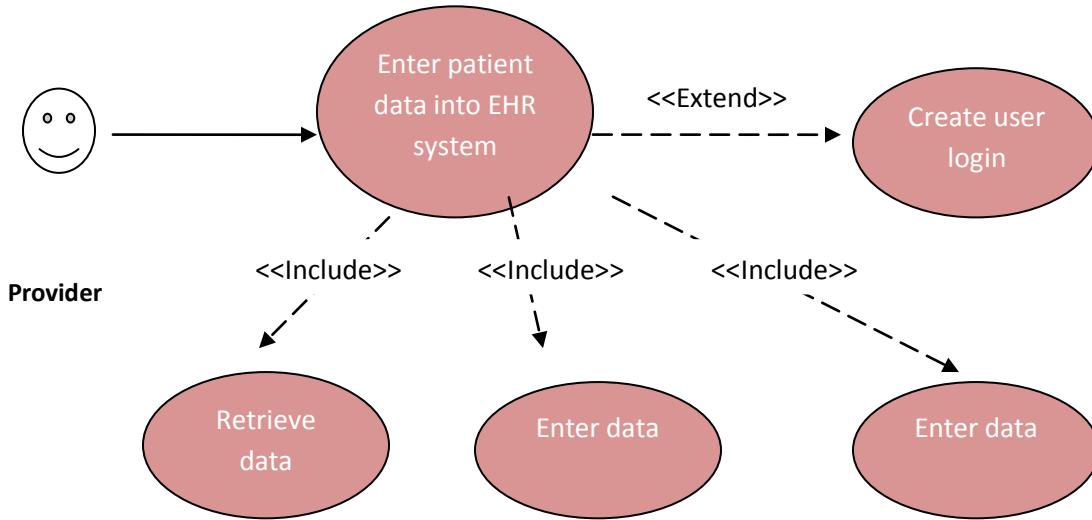
Use Case Name: Tracking of mileage expense	ID: 006	Importance Level: High
Primary Actor: Office Manager	Use Case Type: Detail, Essential	
Stakeholders and Interests:		
Executive Director: wants to ensure company receives tax benefits for its operations		
Office Manager: wants to ensure financial system is maintained up to date		
Brief Description: This use case describes how billing data is entered into the financial system.		
Trigger: Receipt of A/R Report from billing company		
Type: External		
Relationships:		
Association: Executive Director, Office Manager		
Include:		
Extend: Create user login		
Generalization:		
Normal Flow of Events:		
<ol style="list-style-type: none"> <li>1. Schedule provider visits on calendar chart</li> <li>2. Verify provider visited facility on designated date If provider did not visit facility on designated date The S-1: update schedule sub-flow is performed</li> <li>3. Enter provider schedule into system</li> <li>4. Enter start and end travel points</li> <li>5. Download report</li> </ol>		
Sub-Flows:		
S-1: Update schedule		
<ol style="list-style-type: none"> <li>1. Contact provider</li> <li>2. Validate visits for designated dates</li> <li>3. Enter changes to original schedule</li> </ol>		
Alternate/Exceptional Flows:		

**HMC Long Term Care Information System**



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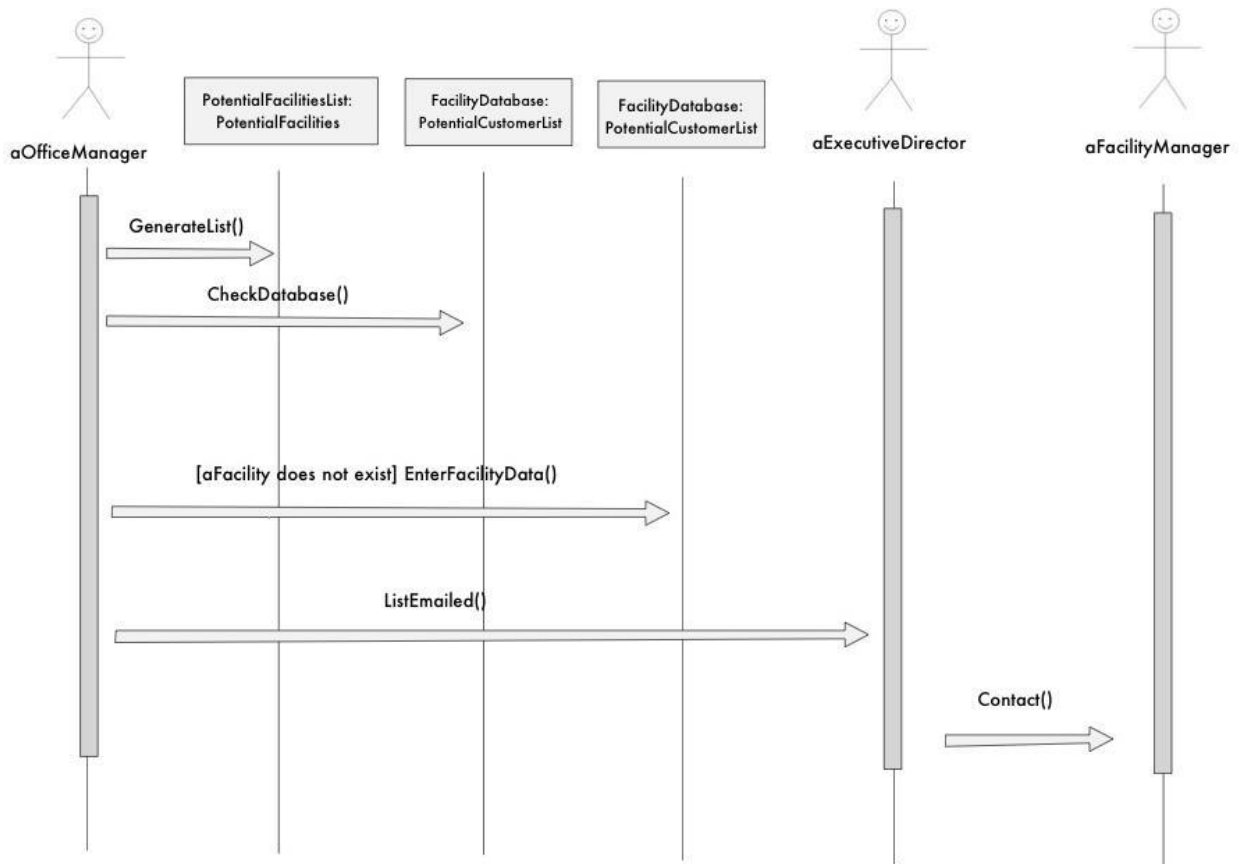




**Project Deliverable 7 – Behavioral Modeling**

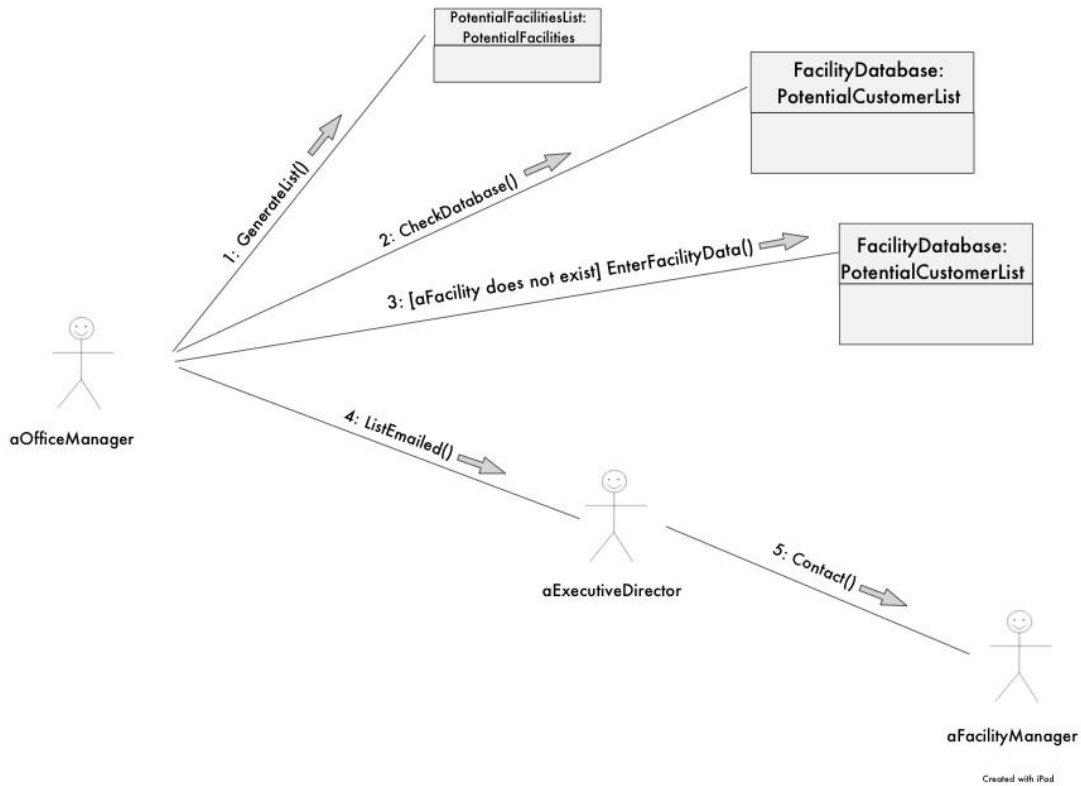
# Marketing Service Sequence Diagram

Robert Daigle



# Marketing Service Communication Diagram

Robert Daigle



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*The following CRC Cards are included:*

- Facility
- Provider
- Recruitment
- Services
- Billing
- MileageExpenses

**CRC Card**

**Front:**

<b>Class Name:</b> Facility	<b>ID:</b> 1	<b>Type:</b> concrete, domain
<b>Description:</b> An individual who receives services from HMC		<b>Associated Use Cases:</b> Communicate with Facility
<p style="text-align: center;"><u><b>Responsibilities</b></u></p> <p>_Login internal system_____</p> <p>_Enter Patient Information_____</p> <p>_Take Survey_____</p> <p>_Upload Reports_____</p> <p>_Provide Feedback_____</p>	<p style="text-align: center;"><u><b>Collaborators</b></u></p> <p>_____Authentication_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

**Back:**

<b>Attributes:</b>	
_Name_____	_____
_Address_____	_____
_Size_____	_____

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<u>  Contact Person  </u> _____	
<b>Relationships:</b>	
<b>Generalization (a-kind-of):</b>	<u>  Customer  </u> _____
—	_____
<b>Aggregation (has-parts):</b>	_____
—	_____
<b>Other Associations:</b>	_____
—	_____

Front:

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<b>Class Name:</b> Provider	<b>ID:</b> 2	<b>Type:</b> concrete, domain
<b>Description:</b> An individual who receives service from HMC (provides services on behalf of HMC)		<b>Associated Use Cases:</b> Communicate with provider
<p style="text-align: center;"><b><u>Responsibilities</u></b></p> <p>___ Login _____</p> <p>___ Enter Patient information _____</p> <p>___ View Patient information _____</p> <p>___ Download Patient Report _____</p> <p>_____</p> <p>_____</p>		<p style="text-align: center;"><b><u>Collaborators</u></b></p> <p>___ Authentication _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

**Back:**

<p><b>Attributes:</b></p> <p>___ Name _____</p> <p>___ Address _____</p> <p>_____</p> <p>___ Specialty _____</p> <p style="text-align: right;">_____</p>	
--	--

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**Relationships:**

**Generalization (a-kind-of):**    \_\_\_\_\_Customer\_\_\_\_\_

-

**Aggregation (has-parts):**

\_\_\_\_\_

\_\_\_\_\_

-

**Other Associations:**

\_\_\_\_\_

\_\_\_\_\_

-

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**Front:**

<b>Class Name:</b> Billing	<b>ID:</b> 3	<b>Type:</b> concrete, domain
<b>Description:</b> Collects billing information for HMC		<b>Associated Use Cases:</b> Billing Data in Financial System
<p style="text-align: center;"><u><b>Responsibilities</b></u></p> <p>____ Login _____</p> <p>____ Enter Billing information _____</p> <p>____ UploadBillingFile _____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p style="text-align: center;"><u><b>Collaborators</b></u></p> <p>____ Authentication _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

**Back:**

<b>Attributes:</b>
____ Month _____
____ Amount _____
_____
_____

<b>Relationships:</b>	
	<b>Generalization (a-kind-of):</b> -- _____
	_____
-	
	<b>Aggregation (has-parts):</b>
	_____
	_____
-	
	<b>Other Associations:</b> _____
	_____
-	



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**Front:**

<b>Class Name:</b> Recruitment	<b>ID:</b> 4	<b>Type:</b> concrete, domain
<b>Description:</b> Class to collect information from job applicants		<b>Associated Use Cases:</b>
<p style="text-align: center;"><u><b>Responsibilities</b></u></p> <p>___viewApplicantInfo_____</p> <p>___storeApplicantInfo_____</p> <p>___viewVacantPosition_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p style="text-align: center;"><u><b>Collaborators</b></u></p> <p>___scheduleInterview_____</p> <p>___makeOffer_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

**Back:**

<b>Attributes:</b>	
___applicantName_____	
___applicantEducation_____	_____
___applicantPhone_____	_____
___applicantExperience_____	

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**Relationships:**

**Generalization (a-kind-of):** \_\_\_\_\_ Employee \_\_\_\_\_

—

**Aggregation (has-parts):**

\_\_\_\_\_

\_\_\_\_\_

—

**Other Associations:** \_\_\_\_\_ Job

vacancy \_\_\_\_\_

\_\_\_\_\_

—

**Front:**

<b>Class Name:</b> Services	<b>ID:</b> 5	<b>Type:</b> concrete, domain
<b>Description:</b> Define HMC services		<b>Associated Use Cases:</b> Market Services

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<u>Responsibilities</u>	<u>Collaborators</u>
__listServices__	_____
__defineServices__	_____
__getCompanyMission__	_____
__getCompanyVision__	_____
_____	_____
_____	_____
	_____
	_____
	_____
	_____
	_____

Back:

<b>Attributes:</b>	
__HMCVision__	
_____	_____
_____	_____
<b>Relationships:</b>	
<b>Generalization (a-kind-of):</b>	_____
_____	
_____	
<b>Aggregation (has-parts):</b>	
_____	



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**Front:**

<b>Class Name:</b> MileageExpenses	<b>ID:</b> 6	<b>Type:</b> concrete, domain
<b>Description:</b> record expense information for reimbursement purposes		<b>Associated Use Cases:</b> Tracking of Mileage expenses
<p style="text-align: center;"><b><u>Responsibilities</u></b></p> <p style="text-align: center;">____ calculateTravelDistance ____</p> <p style="text-align: center;">____ calculateRemibursement ____ calculate tax exemption ____</p> <p style="text-align: center;">____ insertNewExpenseItem ____</p> <p>_____</p> <p>_____</p> <p>_____</p>		<p style="text-align: center;"><b><u>Collaborators</u></b></p> <p style="text-align: center;">____ GoogleMap ____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

**Back:**

<b>Attributes:</b>	
____ ExpenseType _____	
____ ExpenseAmount _____	_____
_____	_____

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**Relationships:**

**Generalization (a-kind-of):**    \_\_\_\_\_ Expense \_\_\_\_\_

-

**Aggregation (has-parts):**

\_\_\_\_\_

\_\_\_\_\_

-

**Other Associations:**

\_\_\_\_\_

\_\_\_\_\_

-

## Design

### Changes:

The following refinements were made to Project Deliverable 7 through an iterative process of modeling the activities to reflect the process of communicating with facilities on customer service results.

- Use Case Diagram:

The location of the Facility Administrator was moved to the far right to provide a clearer representation of the sequence of activities. The method of communicating the survey to the facility administrator was more accurately defined as a survey link sent via email rather than 'being posted' by the Executive Director.

- Communication Diagram:

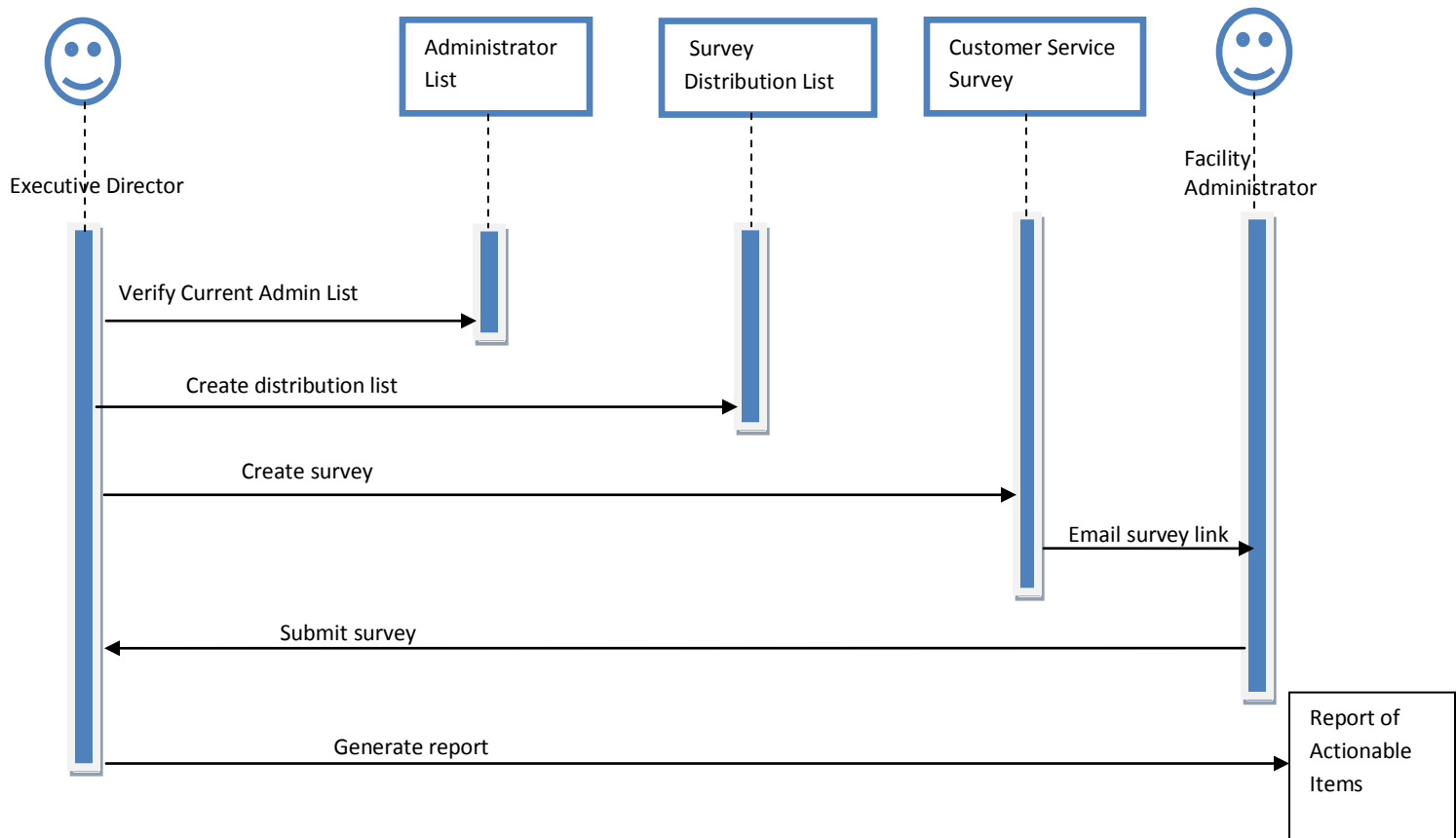
Activity 2 was more correctly described as 'create list'. Activity 4 was changed to 'send survey link' to correctly capture the steps of the process. These changes follow from the changes made in the Use Case Diagram.

- Behavioral State Machine: Major changes were made to the Behavioral State Machine. In the revised diagram, the object was identified as the customer service survey. In the original diagram, the state of behavior of the object at all stages of the process was not described. In the new diagram, the state of behavior at all stages of the process is defined. Unnecessary classes, objects and steps in the process were deleted.

**(Revised diagrams follow below)**

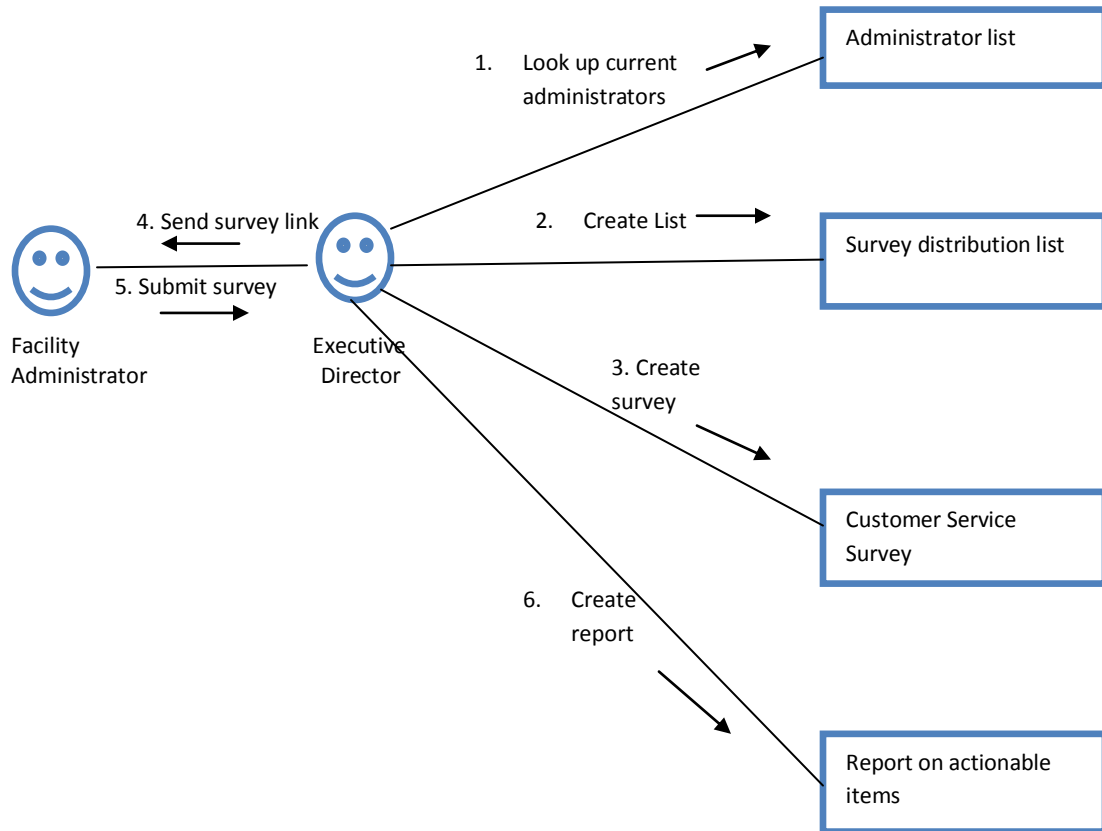
**Use Case: Facilitating Facility Communication: (For Customer Service Feedback)**

(1) Sequence Diagram for Providing Feedback on Quality of Customer Service Provided to Facilities by HMC

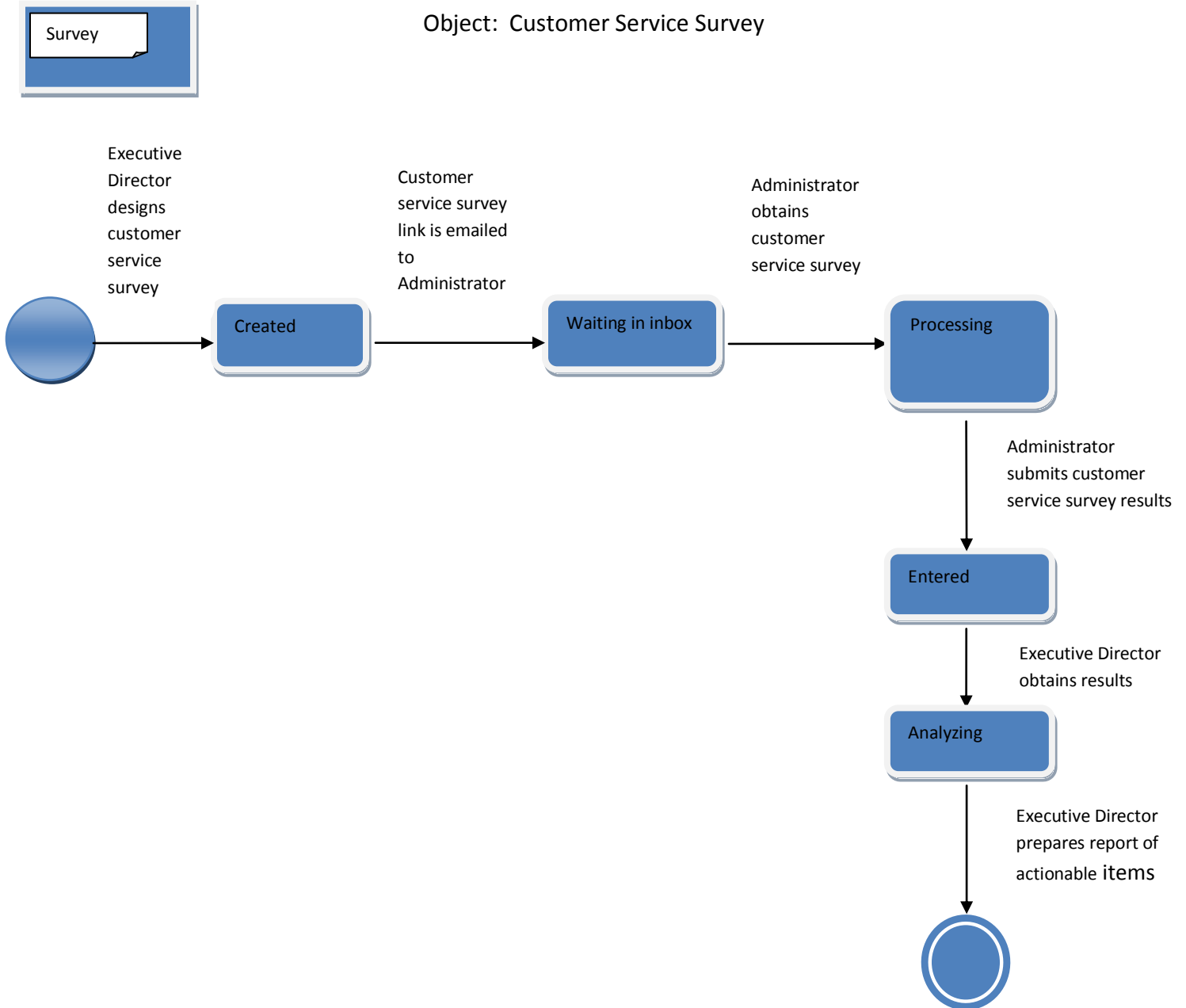




(2) Communication Diagram for Providing Feedback on Quality of Service Provided to Facilities by HMC



(3) Behavioral State Machine for Class: Survey,  
Object: Customer Service Survey



## **Data Management Layer Design**

### ***Justification***

For HMC system, our group recommends implementing a relational database management system (RDBMS). This decision was made after analyzing the data type that HMC will need to store in its tables. The data is of a simple type that can easily be manipulated using a simple language such as SQL. Structured Query Language (SQL) is an industry standard database programming language that will fulfill the needs of our system while still providing a streamline system. Also, future requirements for data types for HMC will never involve storage of complicated objects such as images or media files. The decision was also made due to the popularity of RDBMS as well as the great deal of experience that can be easily located.

### ***Normalization***

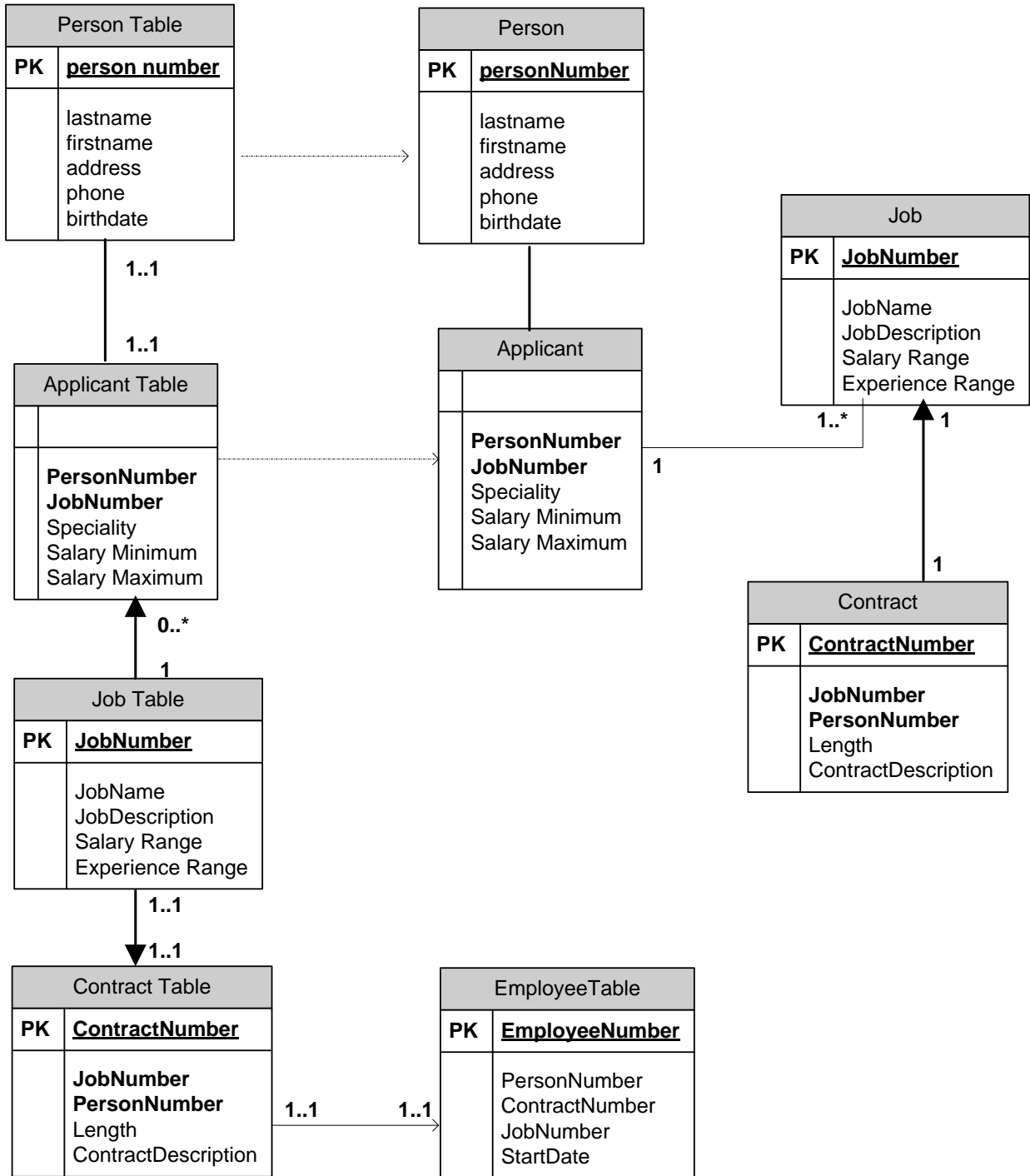
The HMC database should conform to the third normal form (3NF) design which will eliminate redundancies and null values that might cause run time errors, inaccurate information and errors when entering data. For the database to conform to third normal form, it must first satisfy the first and second normal form. The first normal form states that a table should have no repeated fields or groups. To satisfy the second normal form, the first normal form must be satisfied and a non-key attribute must be completely dependent on key attributes, there can be no partial dependencies. Once the first and second normal forms are satisfied, attributes cannot be dependant on non-key attributes to obtain third normal form.

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RDBMS Table

Problem-Domain  
Class



## **Human Computer Interaction Layer Design**

### **Navigation Plan and Template for User Interface(showing an input form for potentialcustomers with validation, and an output report)**

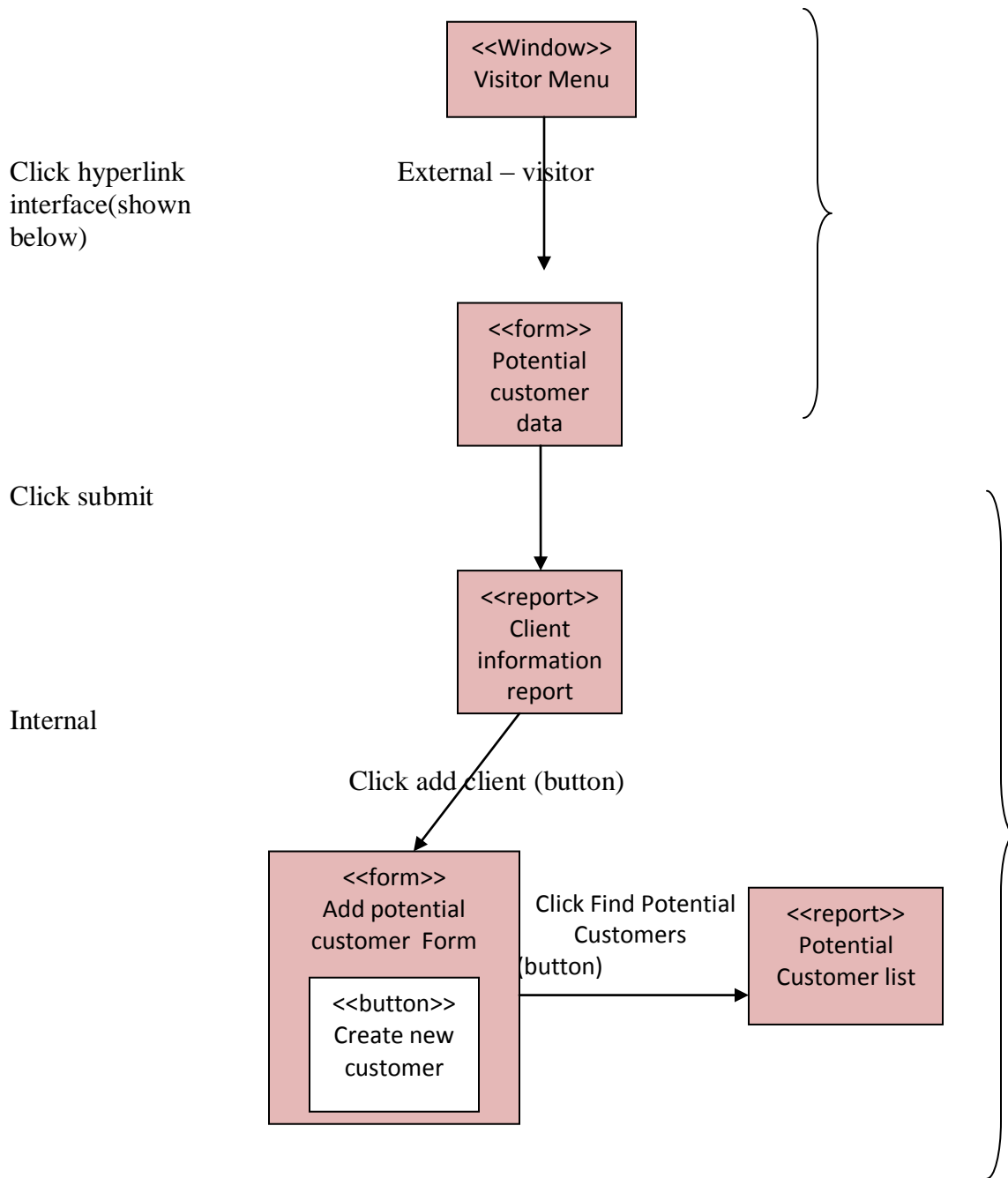
In designing the user interface, it will be kept in mind that the web page serves dual purposes; first, to market the company's services to users, who have limited experience and second, to act as a landing page from which regular users of the site can access the company's information systems.

The webpage will be divided into five sections, a header, two navigation bars, a status bar and a body; an effective balance between content and white space will be designed to give an effective balance. At the top, there will be a header which identifies the company and its slogan. Directly under the header a navigation section will follow. This navigation section will allow users familiar with the company's operations to quickly identify where they should login to access the company's other information systems. A second navigation section on the left edge will allow site visitors to search for information to meet their interest. The main body of the page will be used as a content area to launch information that is generated by clicking the links in the top or left edge navigation systems. A status bar will be included at the bottom of the page to show the user where he/she is in the navigation process. The site will be designed to have a low density feel to minimize new users effort and frustration in using the site. The site will also be designed for consistency that will be implemented through using a common template on all pages with the content changing only in the main content area.

A potential customer visiting the site would click the hyperlink on the left menu, 'Interested in our services?'. This would take the visitor to a form in the main content area, which would be used for entering and submitting information about their facility. The form would consist of text boxes for entering data on the facility location, address etc. A drop down menu will be used to select the state. Radio buttons will be used for selecting whether or not the facility participates in Medicaid / Medicare and the type of ownership (whether for profit or not for profit).

Validation of the data entered will be achieved through completeness checks (\* required data) and format checks (e.g. MM/DD/YY for date).

### Windows Navigation Diagram for Potential Customers of HMC





Geriatric Providers of North Carolina

Home

Facility Login

Provider Login

Staff Login

[About Us](#)

[Our Providers](#)

[Interested in our services?](#)

[Interested in working with us?](#)

[Testimonials](#)

[Blog](#)

[Contact Us](#)

### Interested in our services?

Please complete the form below and submit

\*

\*

\*

\*  \*State:  \*Zip:

\*

\* Tel: (000) 000-0000  Fax: (000) 000-0000

\* Email:

\*  \* Total Residents:

\*  Yes  No

\*  Not for profit organization

\*Required

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<b>*Date: (MM/DD/YY)</b> <input type="text"/>	
<b><u>Facility Location</u></b>	
*Name of Facility:	<input type="text"/>
*Street Address:	<input type="text"/>
*City: *Sta	<input type="text"/> NC <input type="text"/>
<b><u>Facility Contact Information</u></b>	
*Administrator:	<input type="text"/>
*Telephone: Fax:	<input type="text"/> <input type="text"/>
*Email:	<input type="text"/>
<b><u>Facility Data</u></b>	
*Certified Bed Count: *Total	<input type="text"/> <input type="text"/>
*Occupancy:%	<input type="text"/>
*Participating in Medicare and Medicaid? Yes <input type="radio"/> No <input type="radio"/>	
Ownership (check one only):	
F <input type="checkbox"/> profit corporation	
N <input type="checkbox"/> for profit organization	
*Required	
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

**Output Report on Potential Customers**



An electronic turnaround document will be generated from the data entered. The main reason for selecting a turnaround document is because the data entered on the form by the potential customer will be entered into a database to be used for generating a potential customer list for contacting customers who can be served profitably. The report will be detailed and will include all the information entered by the customer.

**Potential Customer – Data Report**

Facility:

Name of Administrator:

Address:

Telephone:

Fax:

Email:

Certified Bed Count:

Total Number of Residents:

Occupancy:

Participates in Medicaid / Medicare:

Type of Ownership:

Customer exists in HMC database?:

Follow up with this customer:

**Physical Architecture**

<p><b>(1) Operational Requirements</b></p> <ul style="list-style-type: none"><li>• Technical Environment</li>          <li>• System Integration</li>          <li>• Portability</li>          <li>• Maintainability</li></ul>	<p>1.1 The system will be web-based and work with any web browser.</p> <p>1.2 The system will be accessed with a web browser on the user's desktop.</p> <p>1.3 The system will have an always-on network feature to maintain real time database updates for data entered by facilities, office staff and providers.</p> <p>1.4 The system will be built using a two-tier client-server architecture.</p> <p>1.5 The system will be able to communicate with HMC's internal Electronic Health Record (EHR) system.</p> <p>1.6 The system will be able to communicate with Google small business applications such as Google Docs, Google Maps, Google Scheduling Calendar.</p> <p>1.7 The system will be able to communicate with the background access database.</p> <p>1.7 The system will be able to communicate with Excel files.</p> <p>1.8 The system will be able to perform scheduling through a calendar.</p> <p>1.9 The system will give the user the capability to upload a scanned file.</p> <p>1.10 The system will be capable of being accessed by portable devices such as the iPad.</p> <p>1.11 The system will be capable of tracking data entered by each office location, facility location and provider.</p>
<p><b>(2) Performance Requirements</b></p> <ul style="list-style-type: none"><li>• Speed</li>          <li>• Capacity</li>          <li>• Availability and Reliability</li></ul>	<p>2.1 The system will load the web page in less than 2 seconds.</p> <p>2.2 The system will be capable of supporting up to 20 users at the same time.</p> <p>2.3 The system will have 99% uptime performance.</p> <p>2.4 The system will be available for use 24 hours a day, 365 days per year.</p> <p>2.4 The system will always provide real-time data.</p> <p>2.5 The system will have a user interface that is easy to navigate.</p>



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<p><b>Requirements</b></p> <ul style="list-style-type: none"> <li>• Multilingual</li> <li>• Customization</li> <li>• Unstated Norms</li> <li>• Legal</li> </ul>	<p>4.1 No special multilingual requirements are anticipated. 4.2 The system will use company colors and logo. 4.3 No special unstated norms requirements are anticipated. 4.4 The system will comply with HIPPA policies for viewing patient information.</p>
---	---

**Hardware and Software Specifications Needed for the HMC system**

	<b>Standard Client</b>	<b>Standard Server</b>
<b>Operating System</b>	Windows / Linux / OSX / iOS / Android	Linux
<b>Special Software</b>	Internet Explorer / Safari / Firefox / Chrome	Apache / MySQL
<b>Hardware</b>	40Gb HDD (at least 1GB free)	2TB
	512MB RAM, 2GB recommended	8GB RAM
	1Ghz processor, Core 2 Duo Recommended	i7 Core Processor
	Mouse or touchpad controller	
	Super VGA Display	
<b>Network</b>	Broadband Internet connection (200k or greater)	Fiber Optics with 3TB Bandwidth

**Construction**

## **Types of Document:**

- HMC should write a procedure manual to illustrate its system. The procedure manual will describe to the user how to perform certain business tasks. Since the system serves as a main portal for many functions inside the organization, as well as outside, its customers (facilities and providers); the documentation will need to be detailed to walk the different users through the several steps necessary to perform a business function.

In addition to providing information on how to access the different information systems, the document should also include information on how to access the individual information systems manually in the event of a failure (e.g. if the website is down).

The document should also include important security measures required in accessing sensitive data. It will be provided as a PDF document that users may download and / or print at their discretion. Providing the documentation in a digital format will help conserve company resources.

There will also be a short video clip demonstrating basic functions of the site. The reason for creating a short instructional video for the site is due to the fact that many individuals will not take the time to read a document if they feel it is not absolutely necessary. The brief instructional video is not meant to be a substitute for the written documentation, but a brief overview for individuals that are not willing to take the time to read the written documentation.

## **Navigation control:**

- Contents: Includes an introduction and summary of HMC website.
- Index: lists all topics covered by the procedure manual.
- Text search: provides an easy way for the user to search through the contents and the index by entering in a keyword.

## **Documentation Topics:**

### **1. Tasks:**

#### **a. For HMC Staff**

- i. How to access financial records
- ii. How to upload monthly account receivable reports
- iii. How to download monthly billing reports
- iv. How to schedule facility visits to providers
- v. How to record mileage expenses

**b. For HMC Providers**

- i.** How to Login to EHRs
- ii.** How to enter patients records in EHRs
- iii.** How to access patients information

**c. For HMC customers (Facilities):**

- i.** How to login to internal company system
- ii.** How to upload patients labs and reports
- iii.** How to take surveys
- iv.** How to access scheduled appointments

## **Installation and Operation**

### **Conversion:**

The three major steps of conversion are installation of hardware, installation of software and conversion of data. HMC will employ an outside consultant to install the hardware and software requirements as detailed in Deliverable 12 and to ensure that the system performs to specifications. Staff would then be required to create the databases and upload existing data on potential customers and potential employers into the new system.

### **Approaches to Conversion:**

Since HMC's system is a simple one, the best approach would be a direct, simultaneous, and whole-system conversion. This will allow HMC to implement the new system with the least cost, within the shortest time frame, and with low risk.

With direct conversion, the new system will immediately replace the old system so that current staff, providers and facilities will immediately become acquainted with the new user interface. It will also demonstrate to users that HMC is taking serious steps to formalize its business processes. Based on the rate at which the company is growing, direct conversion will make it easier for users to adapt to, and adopt, the new processes. From HMC's perspective, it will be less costly as there will be fewer people to train, who will then become the trainers of future users as the company grows. The only concern with direct conversion is the risk involved in moving to an entirely new system; however, in HMC's situation the risk is low as the system is not mission critical to the operations of the company.

The system will be implemented simultaneously since there is only one location for the company and the website can be accessed from anywhere and at any time via the internet.

A whole system conversion will also be appropriate as the system is not a complex one. A whole system conversion has the benefit of eliminating the difficult steps that might take place if we choose to implement a modular conversion and will reduce the time involved in launching the new system.

### **Change Management Policies:**

Since HMC is a small company, the Executive Director will need to take the role of both driver and change agent and make a compelling case for change, demonstrate top management's support, and identify the benefits of the new system. For HMC to go through a successful change with least people resistance, HMC must do the following:

1. Establish change management policies
  - a. Create standard operation procedures for the to-be system.
  - b. Define measurements and rewards
  - c. Allocate resources towards adopting the new system
2. Assess the cost and benefit models of potential adopters
  - a. Develop the cost and benefit of the new system for the organization as a whole
  - b. Develop the cost and benefit from the viewpoint of the different users. This will allow adopters to be less resistant to change if they see the benefit they will gain from the system.

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3. Motivate adoption: Management needs to convince users that the benefits of the new system outweigh the cost. There are two ways to motivating adaptation:
  - a. Informational: the project team will present the costs and benefits of the new system. The information should then be disseminated widely throughout the target group. Emphasis must be put on the benefits and reduction or elimination of problems.
  - b. Political: This strategy will use organizational power to motivate change.
  
4. Enabling people to adopt through training. New users must be given training in using the system.

**Training:**

Based on the work culture of HMC, one-on-one training will be the best approach for the initial users of the system. This will be more personable and will allow the users to gain a comfort level in learning and using the system. Once the initial users are trained, computer based training will be the best approach for on-going training. Use of training videos posted on the Web to communicate the new processes will ensure accessibility to all users. Although more costly to develop, it will be easier to deliver and will reach a larger and newer audience as the company grows. HMC's system is simple enough that users will be able to obtain the benefits of the online training and be able to access it from anywhere and at anytime.