
INFS 774 Enterprise Architecture

Spring 2014, Dr. Frank Armour

Submission 5th May 2014

Sunshine Inn Enterprise Architecture [TOGAF]

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Overview

The goal of this project is to build Enterprise Architecture for Sunshine Inn hotels and Resorts. This hotel is a family owned, midsize business with chain of hotels along the east coast (Washington DC, New York, New Jersey, Boston, Miami, Atlantic city, Pittsburg, Philadelphia, Baltimore, Atlanta). The hotel makes a big portion of their earnings from travelling businessmen. Records show that 73% of these customers check in rooms for at least 2 days. They are out and around in the city dealing with work during the major part of the day. The use of the hotel amenities and room service has seen a drastic decline from guests. The survey reports predict that these numbers will not improve soon.

In order to make the business more rewarding for customers, we have decided to come up with Enterprise Architecture, which has new features for the hotel. The management has decided to introduce the virtual key technology for check-in and checkout from the hotel rooms. The customers can book a room using the website or mobile app and receive the key on their smartphone. They can then check-in to their room by tapping their smartphone with the virtual key on the door card reader and gain access. Similarly they can check out using the website or their smart phone app. They would be charged only for the duration of their stay.

In addition to this the management has decided to tie up with the local businesses, which are involved in providing services like laundry, food and beverages etc. This architecture would allow the hotel to provide options to their guests to customize their package for stay according to the services they need for their short trips (restaurants, laundry, gym, car rental, movies, car service centers). This would allow the hotels to reduce tariff and introduce a basic package, popular packages, premium packages and customizable packages for the same room.

Enterprise Architecture Approach

The purpose of this document is to establish the Enterprise Architecture by aligning the following key areas of the enterprise -

- **Business** : processes, strategies, organization charts and functions
- **Information** : conceptual, logical and physical data models to show what information is needed and how it relates to other information
- **Application** : portfolios, interfaces, and services
- **Infrastructure** : network concept diagrams, technology reference models

To achieve alignment, we model each key area from its own perspective, and then link the models from each perspective. For example, model business processes from a business perspective. Then, link the business processes to the applications that support them, which helps achieve alignment. We do this to ensure that every decision is based on a business need; therefore, an application is not dictating the way a business process is designed.

The purpose of enterprise architecture is to optimize across the enterprise the often fragmented legacy of processes (both manual and automated) into an integrated environment that is responsive to change and supportive of the delivery of the business strategy. Good enterprise architecture enables the organization to achieve the right balance between IT efficiency and business innovation. It allows individual business units to innovate safely in their pursuit of competitive advantage. At the same time, it ensures the needs of the organization for an integrated IT strategy are met, permitting the closest possible synergy across the extended enterprise.

To propose a new architecture for this enterprise, we first looked over the possible frameworks to use that would best suit the business. After reading through outlines and descriptions of other framework documentations, we decided to use a variation of the TOGAF and Zachman framework by selecting topics that are relevant to this organization. While we work on this document, we also have to keep in mind the time restriction of one semester and the team member's commitment to other courses.

TOGAF is an architecture framework that provides the methods and tools for assisting in the acceptance, production, use, and maintenance of enterprise architecture. It is based on an iterative process model supported by best practices and a re-usable set of existing architecture assets.

Architectural Development Method (ADM)

The TOGAF ADM will be a result of continuous contributions from all the members of the team members. It describes a method for developing and managing the life cycle of enterprise architecture and forms the core of TOGAF. It integrates elements of TOGAF and other available architectural assets, to meet the business and IT needs of an organization. Throughout the ADM cycle, there needs to be frequent validation of results against the original expectations, both those for the whole ADM cycle, and those for the particular phase of the process.

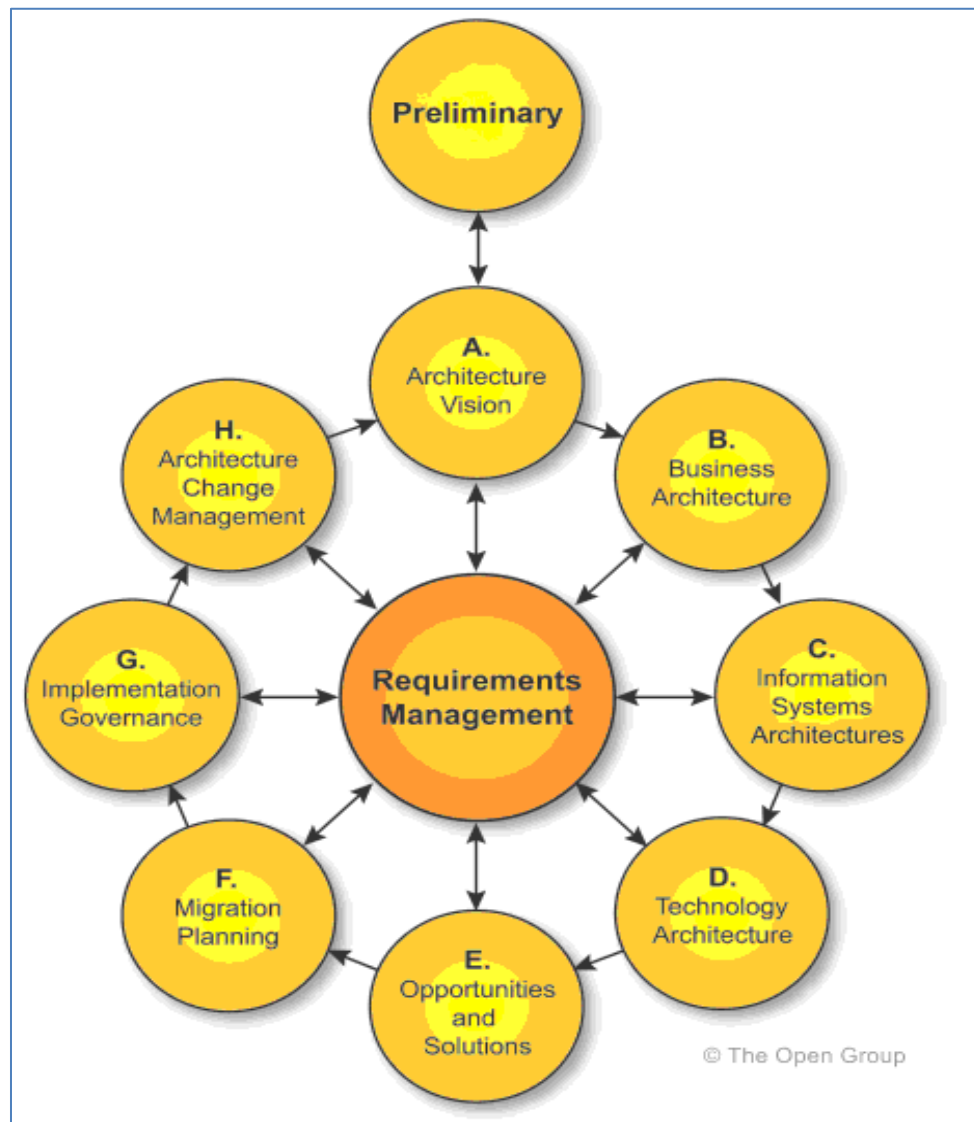


Figure 1 - Basic structure of ADM [\[source\]](#)

There are four architecture domains that are commonly accepted as subsets of overall enterprise architecture, all of which TOGAF is designed to support:

- The **Business Architecture** defines the business strategy, governance, organization, and key business processes.
- The **Data Architecture** describes the structure of an organization's logical and physical data assets and data management resources.
- The **Application Architecture** provides a blueprint for the individual applications to be deployed, their interactions, and their relationships to the core business processes of the organization.
- The **Technology Architecture** describes the logical software and hardware capabilities that are required to support the deployment of business, data, and application services. This includes IT infrastructure, middleware, networks, communications, processing, standards, etc.

Architecture Integration

Architectures that are created to address a subset of issues within an enterprise require a consistent frame of reference so that they can be considered as a group as well as point deliverables. The dimensions that are used to define the scope boundary of a single architecture are typically the same dimensions that must be addressed when considering the integration of much architecture. The following figure illustrates how different types of architecture need to co-exist.

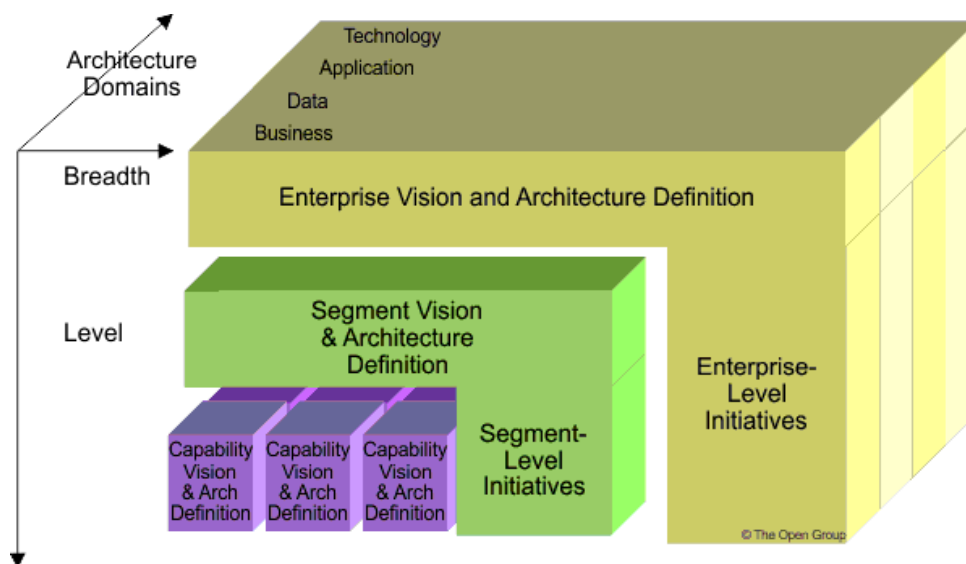


Figure 2 - Integration of Architecture Artifact

Phase A. Architectural Vision

Scope

The hotel currently has the following business processes:

➤ **Guest Services:**

The Guest services team is responsible to provide the guest with a good overall experience while the guests use the hotel services. The Guest services team analyses the feedback from the customers and come up with ideas to improve the guest service.

➤ **IT Support:**

The IT Support team serves as a central point of contact for the hotel community requesting IT Support or information. Some of the basic tasks of the IT Support team would be setting up Wi-Fi services, intercom in each room and the reception (for communication within the hotel), developing and maintaining the hotel website so that it is easy for the customers to book rooms online. The mission of the IT Support team is to provide professional and friendly service in support of excellence.

➤ **Sales and Marketing:**

Sales and Marketing team is responsible to create a marketing and sales plan and assist in the plans implementation. The main function of this team is to market the hotel intelligently so that customers find it attractive. Another function of this team is to come up with special marketing offers at regular time intervals or during festive seasons to improve the sale of the hotel. The team further monitor's the implementations and help midcourse adjustments where needed.

➤ **Human Resources:**

The Human Resources teams focus is on attraction, selection, training, assessment and rewarding of employees while also overseeing organizational leadership and culture and ensuring compliance with employment and labor laws. They are developing systems and processes within the organization that address the strategic needs of the business

➤ **Security:**

Along with proving best customer service a good secure environment for our customer is also one of the foremost agenda of the Sunshine Inn Hotels. We have a good team of security personnel's who is not only in charge of security and safety of the customers but are also concerned about the safety for the staff and employees who work there so as there is no untoward incident happening with anyone. We have a security check post at the entrance, which keeps an

eye on every entry and exits made in the hotel premises. Each room is equipped with alarm system, which sends a signal to the check post just in case of emergency. There are CCTV cameras installed wherever required and are continuously monitored by a security member. The entire security team is well organized with good source of communication system between each other.

➤ **Finance:**

The back end finance team is kind of backbone of the hotel services. The team keeps a tab and records all the financial transactions happening in system. The expertise of the members helps to predict a rough summary for the every month based on past records thus helping the management in making right decisions. The finance team maintains a record of all its branches located in various parts. This helps management in analyzing all their financial track record of its hotels. The team regularly holds meetings and generates reports on a monthly and annual basis, which are further assessed by the management. The general manager work is closely associated with the financial team.

➤ **Concierge:**

A small but well updated concierge is located with every hotel branch, which assists the guests with various tasks. Right from making reservation at various venues like restaurants, spa's, theaters' etc. to book travel tickets for airplane, trains, etc. all these and many other tasks are well performed by this small team. The concierge is well equipped with updated maps, brochures listing tourist attraction spots, pamphlets of various restaurants to hand out to the guests in case of inquiry. Small tours along with guides are also provided as and when needed. It's like a one single stop for all the various facilities available and the information you need of that particular city.

➤ **Housekeeping:**

The housekeeping team works continuously to keep the hotel and premises clean giving a pleasant staying experience to all the guests. The team is internally subdivided into teams each concerned with different tasks like one for room service, once concerned with outdoor activities like gardening. They are the one who keeps the rooms clean, the toiletries all well stacked. Disposal of trash collected, cleaning of the corridors and other areas in the hotel premises also comes under housekeeping. The team is also well mannered and organized giving no chance of any complaints from the customers.

The project's main focus would be to automate the check-in process at the hotel by implementing a new technology known as the virtual key technology. Two teams will take full ownership of implementing this new technology. They would be the IT Support and Concierge teams. The development of this new technology would be based on an Agile methodology where in the teams would meet every two weeks and set the tasks to accomplish.

At the end of the sprint the Scrum master would verify and approve the work completed. There would be meetings with the concerned stakeholders on the progress of the project.

Business Processes in Scope	Business Processes out of Scope
<ul style="list-style-type: none"> ➤ Human Resources ➤ Finance ➤ IT Support ➤ Guest Services ➤ Concierge 	<ul style="list-style-type: none"> ➤ Sales and Marketing ➤ Housekeeping ➤ Security

Table 1 - Business Processes in-scope

Stakeholder Map Matrix

Stakeholder	Involvement	Class
General Manager	Interested in high level goals and objectives of organization and how these translate into an effective process and IT architecture to advance the business	Keep Satisfied
Assistant General Manager	Interested in high level goals and objectives, communicates and executes management decisions to employees	Keep Satisfied
IT Manager	Interested in management decisions to introduce new technologies to the enterprise, oversees smooth governance of technical aspects in the enterprise	Keep Satisfied
Finance Controller	The Financial Controller oversees the day to day activities of the finance team and ensures the enterprise finance function is organised and efficient and produces accurate financial and management accounts.	Keep Informed

HR Manager	Develops policy and directs and coordinates human resources activities such as employment, compensation, labor relations, benefits, training, and employee services.	Keep Satisfied
Inventory Manager	The inventory manager is mainly responsible for ensuring that the organization has the right amount of stock to meet customer's needs and also to avoid overstocking certain items, which ties up cash and storage resources.	Keep Informed
Security Manager	Responsible for managing a team of security personnel to ensure the protection of property, assets, and people. Patrols building perimeter, sets up secure point of entry, and investigates suspicious activity.	Keep Satisfied
Guest Service Manager	A guest services manager oversees all facets of the client experience in a hotel. The manager coordinates the check-in process, resolves issues that guests may have and develops programs for special services.	Keep Satisfied
Hotel Customer		Keep Satisfied

Table 2 - Stakeholder Map Matrix

Organization Hierarchy

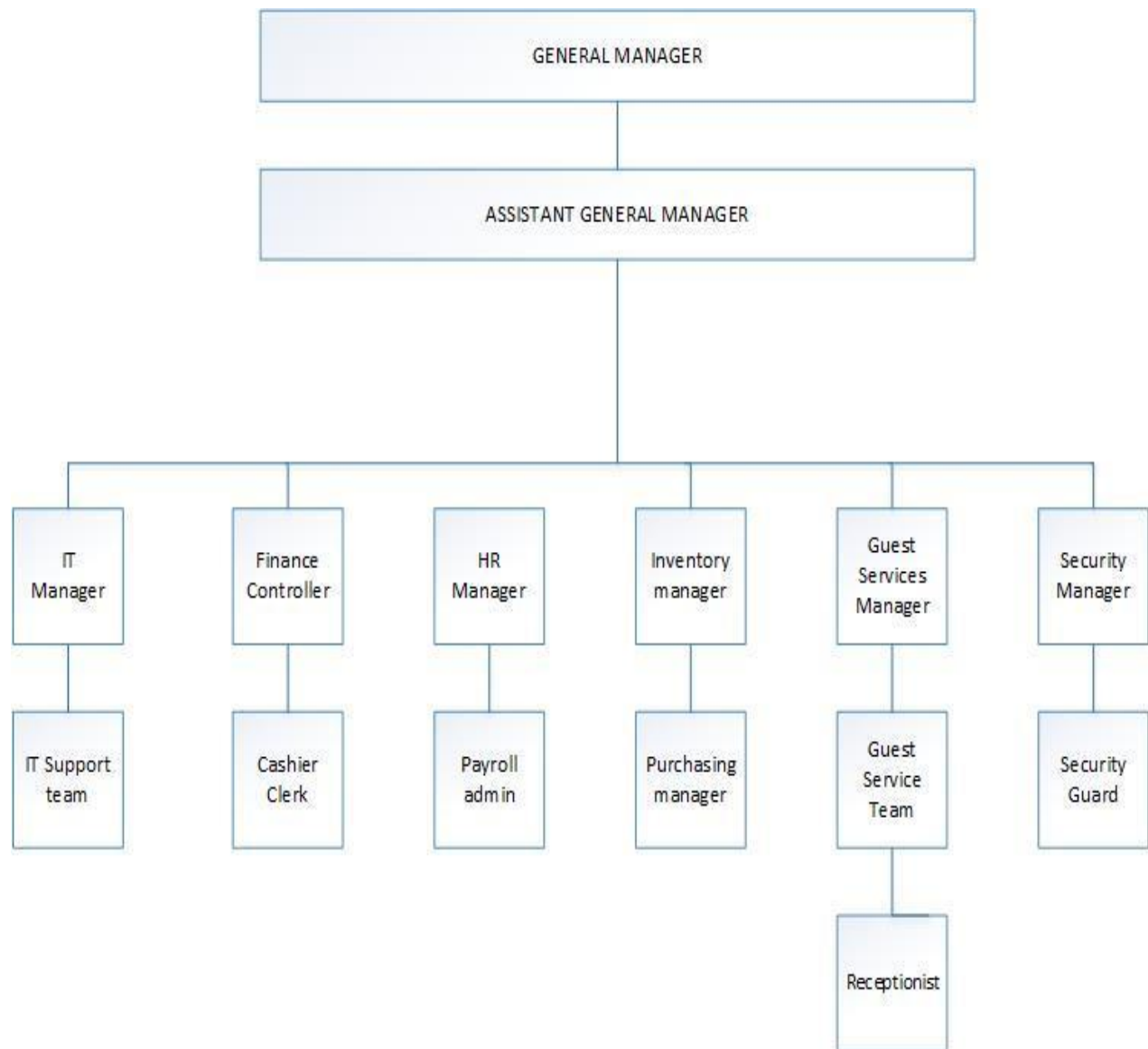


Figure 3 - Organization Hierarchy

Value Chain Diagram

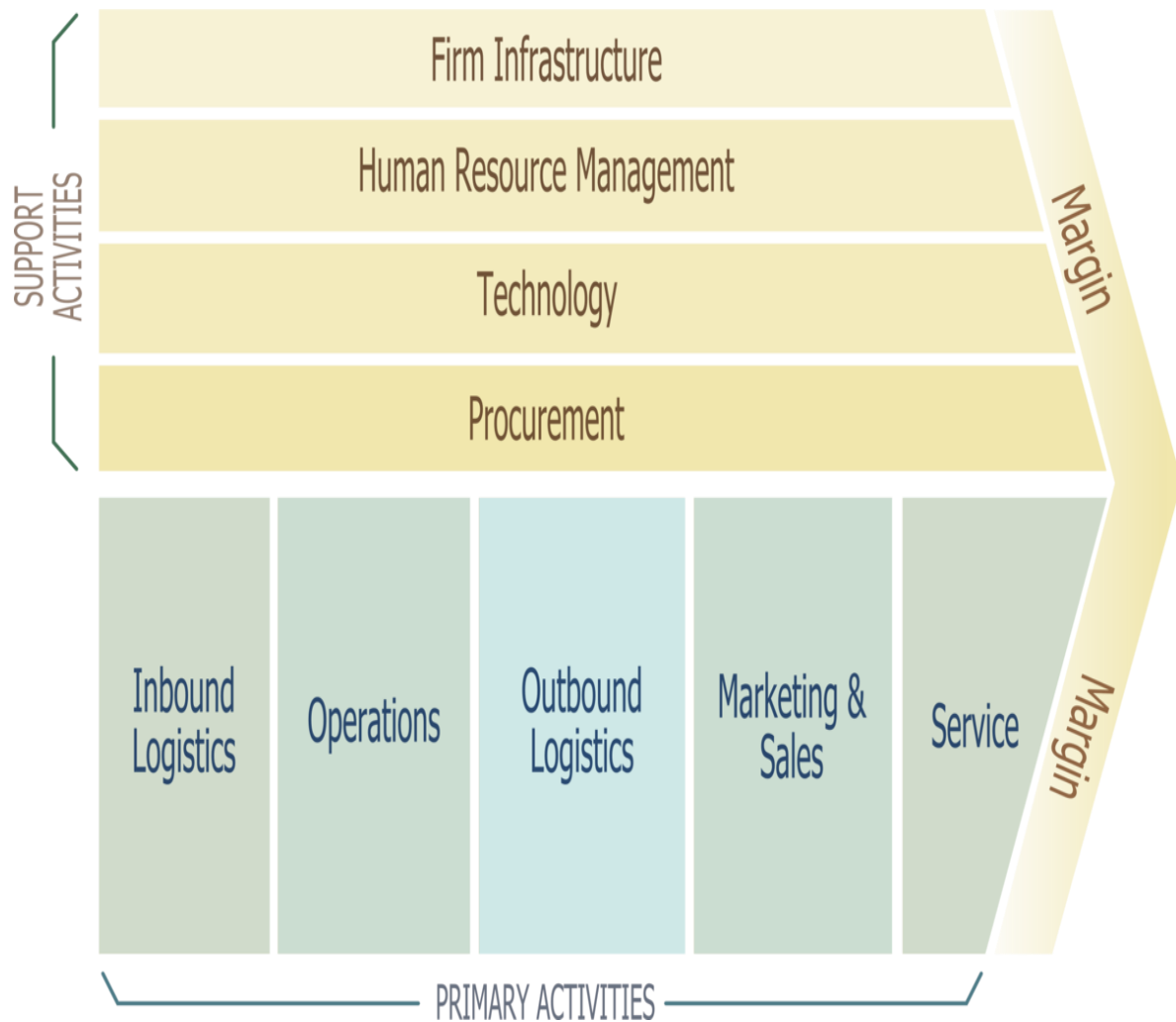


Figure 4 - Value Chain Diagram [\[http://en.wikipedia.org/wiki/Value_chain\]](http://en.wikipedia.org/wiki/Value_chain)

Phase B. Business Architecture

Baseline Architecture, Target Architecture (Business use case, process flow diagram),
Gap Analysis

Actor-Role matrix

	HR	Finance	Concierge	Guest Services	IT Support
HR	X				
Employee	X	X	X	X	X
Customer					
Union	X	X	X	X	X
Management					
Receptionist				X	
Payroll Admin		X			
Finance Controller		X			
Cashier Clerk		X			
Purchasing Manager		X			
IT Support Team					X
IT Manager					X
Customer Service	X			X	
Guest Service Center				X	
Guest Service Team				X	

Table 3 - Actor/Role Matrix

Functional Decomposition

HR	Finance	Concierge	Guest Services	IT Support
Establish Company Policy	Timesheets	Check Room Availability	Housekeeping	Log in
Manage Department Budget	Admin Payroll	Make Reservation	Assistance for Disabled	Check Complaints
Manage Organization & Position	Control Hotel Expenses and Revenues	Cancel Reservation	Provide Concierge	Fix Complaints and Update Records
Evaluate Candidate	Record Financial Data & Create Yearly Report	Receive Payment	IT Support	File Complaints
Hire Employee	Control Purchase of Goods	Make Reservation at Spa's	Provide Feedback	Maintenance
Manage Employee Separation	Collect Daily Receipts	Book Airline Tickets	Parking Facility	Update Software
Manage Payroll	Receive Cash Payments	Arrange Tour for Guests	Request food Service	Audit Reports
Administer Bonus/Rewards	Online Timesheets	Request Airline Tickets	Safety & Security	Virtual Key
Manage Employee Leaves		Check In Kiosk		
Manage Employee Performance				

Develop/Implement Employee Skills Program(s)				
Manage Employee Tasks				
Manage Grievances				
Manage Labor Relations				
Manage External Services				
Register Service with Hotel				

***denotes To-Be functionality**

Business Processes

HR Business Use Case

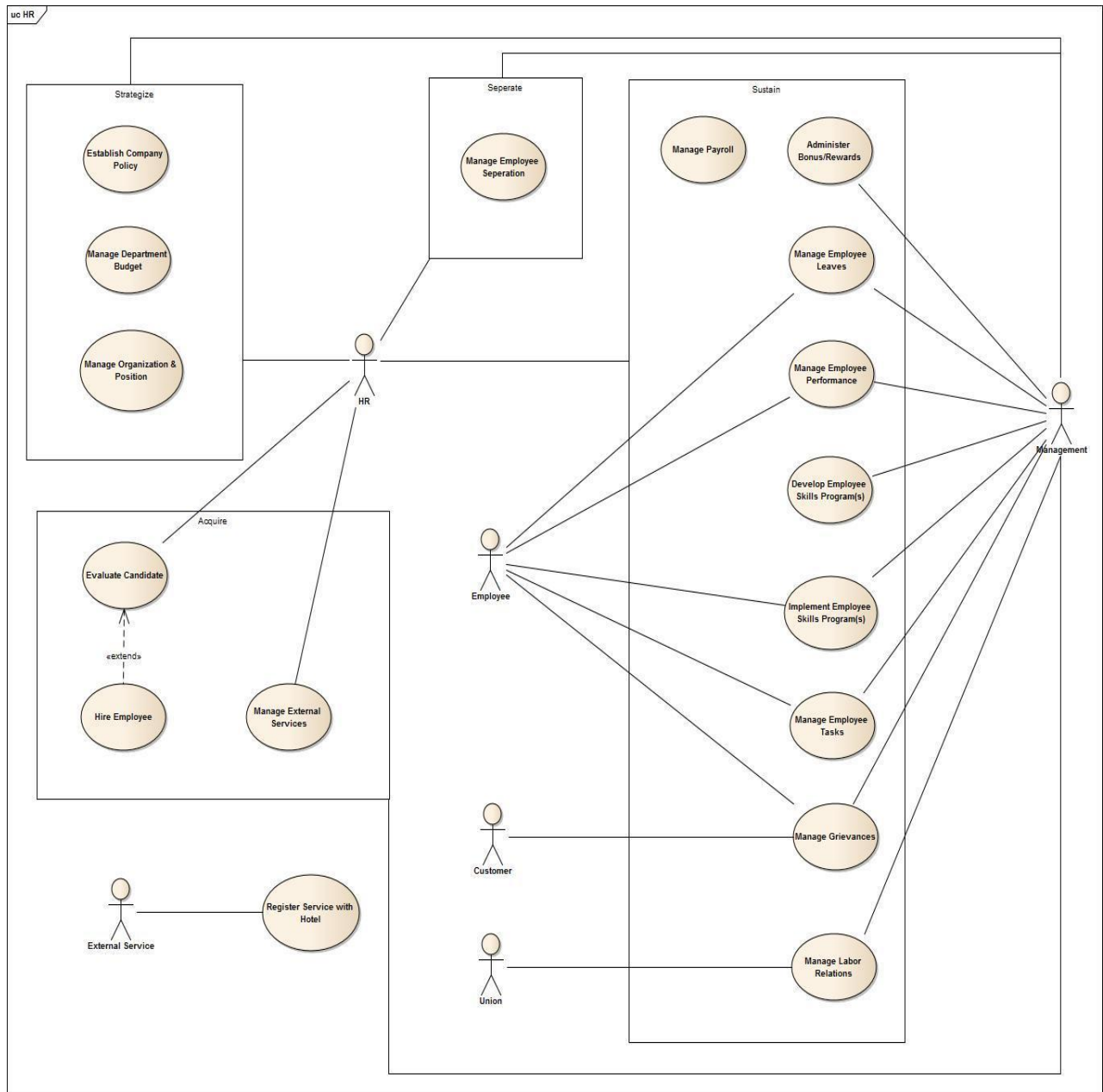


Figure 5 - HR Use Case

Actors

- **HR** - carries out the Human Resource management that benefits the employees, provide training and other necessary tasks essential to the enterprise.
- **Employee** - Personnel involved with running the day to day business activities of an enterprise
- **Management** - These stakeholders are decision makers of the enterprise and support the organizations to manage internally and adapt themselves to changes.
- **Customer** - The guest is responsible for making a reservation, cancelling a reservation, requesting flight tickets and many more things. He interacts with the receptionist at the concierge services of the hotel.
- **Union** - The employees of the enterprise can form a union group to negotiate employee rights and pay with the management

HR Business Process

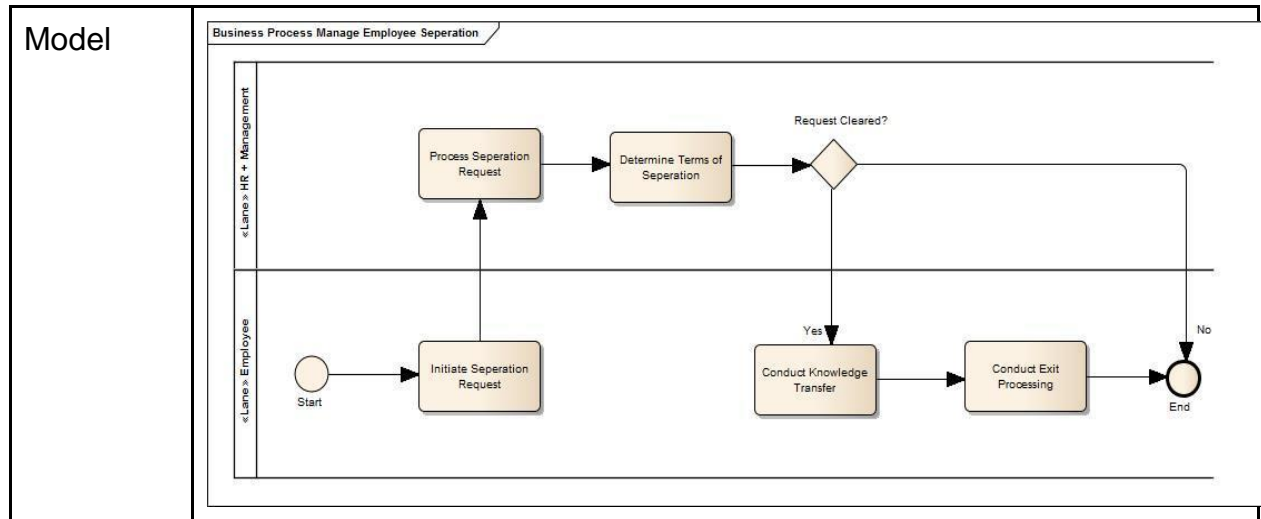
ID	BP001
Name	Establish Company Policy
Description	The HR and Management mutually set up and agree on the company policy to be implemented across the enterprise.
Actors	HR, Management
Model	<pre>graph LR; Start((Start)) --> FUMV[Formulate/Update Mission and Value]; FUMV --> DOS[Develop Objectives and Strategies]; DOS --> EGME[Establish Goals, Milestones and Evaluation Criteria]; EGME --> RPA[Review Policy for Approval]; RPA --> Approved{Approved?}; Approved -- No --> EGME; Approved -- Yes --> PIP[Plan Implementation Policy]; PIP --> AIP[Approve Implementation Policy]; AIP --> End(((End)))</pre>

ID	BP002
Name	Manage Department Budget
Description	The HR and Management set up and agree on department budgets for every quarter to be implemented across the enterprise.
Actors	HR, Management
Model	<p>Business Process Manage Department Budget</p> <pre> graph LR subgraph Management_Lane [«Lane» Management] Start((Start)) --> Formulate[Formulate Department Budget] Formulate --> Submit[Submit Budget] end subgraph HR_Lane [«Lane» HR] Execute[Execute Against Approved Budget] --> Report[Report Against Approved Budget] Report --> End((End)) end Submit --> Execute </pre>

ID	BP003
Name	Manage Organization & Position
Description	The HR and Management set up and agree on positions for employees to delegate responsibilities for proper functioning across the enterprise.
Actors	HR, Management
Model	<p>Business Process Manage Organization and Positions</p> <pre> graph LR subgraph Management Start((Start)) --> Determine[Determine Organization Structure] Determine --> Administer[Administer Position Management] end subgraph HR Administer --> Establish[Establish Job Requirements] Establish --> Analyze[Analyze Job Requirements] Analyze --> Publish[Publish Job] Publish --> End(((End))) end </pre>
ID	BP004
Name	Evaluate Candidate
Description	The HR requires to keep hiring suitable candidates to supply the need for qualified personnel in the enterprise for its proper functioning.
Actors	Prospective Employee, HR
Model	<p>Business Process Evaluate Candidate</p> <pre> graph LR subgraph HR Start((Start)) --> Establish[Establish Applicant Sources] Establish --> Announce[Announce Jobs] Announce --> Redeive[Redeive Applicant Information] Redeive --> Determine[Determine Qualified Candidates] Determine --> Asses[Asses Candidates to be Selected] Asses --> Seled[Seled Candidate] Seled -- "«flow»" --> HireEmployee[«BusinessProcess Hire Employee»] end subgraph ProspectiveEmployee Apply[Apply for Job] --> Redeive end </pre>

ID	BP005
Name	Hire Employee
Description	The HR requires keeping hiring suitable candidates to supply the need for qualified personnel in the enterprise for its proper functioning. This process completes the hiring process
Actors	Prospective Employee, HR
Model	<pre> graph LR subgraph "Business Process Hire Employee" subgraph "«Lane» HR" DTO[Determine Terms of Offer] --> ETO[Extend Tentative Offer] ETO --> CC[Certify Compliance with Requirements] CC --> BEO[Bring Employee On-Site] BEO --> CAF[Close Application File] CAF --> End((End)) end subgraph "«Lane» Prospective Employee" RO[Response to Offer] end ETO --> RO RO --> CC end </pre>

ID	BP006
Name	Manage Employee Separation
Description	When the employee wants to leave the enterprise, the HR and Management review the terms of separation and the HR helps the employee successfully complete the process and move on.
Actors	Employee, HR, Management



ID	BP007
Name	Manage Payroll
Description	The HR processes the payroll for all employees of the enterprise in time as per the individual contracts signed by them.
Actors	HR
Model	<div> <div>Business Process Manage Payroll</div> <pre> graph LR subgraph "Business Process Manage Payroll" direction TB subgraph "HR Lane" Start((Start)) --> MEPD[Manage Employee Payroll Data] MEPD --> PP[Process Payroll] PP --> DT[Distribute Tips] DT --> PD[Process Disbursements] PD --> PR[Perform Reporting] PR --> End((End)) end end </pre> </div>

ID	BP008
Name	Administer Bonus/Rewards
Description	Management decides employee bonus and incentives and the HR processes it for the selected employees of the enterprise.
Actors	HR, Management
Model	<pre> graph LR subgraph "Business Process Administer Bonus Rewards" direction TB subgraph "Management" Start((Start)) --> Identify[Identify Bonus and Awards Payout Strategies] Identify --> Determine[Determine Eligibility for Bonus or Awards] Determine --> Set[Set Bonus or Award] end subgraph "HR" Deliver[Deliver Bonus or Award] --> End((End)) end Set --> Deliver end </pre>

ID	BP009
Name	Manage Employee Leaves
Description	The employee can request for leaves through the system that will be approved by management and processed by the HR.
Actors	HR, Management, Employee
Model	<pre> graph LR subgraph "Business Process Manage Employee Leaves" direction TB subgraph "Employee" Start((Start)) --> Request[Request Leave] end subgraph "HR" Process[Process Request for Leave] --> Approved{Approved?} Approved -- Yes --> LeaveApproved[Leave Approved] Approved -- No --> Notify[Notify About Decision] LeaveApproved --> End((End)) Notify --> End end subgraph "Management" Communicate[Communicate Leave Information] end Request --> Process Process --> Communicate Communicate --> Approved end </pre>

ID	BP010
Name	Manage Employee Performance
Description	The actors decide on a performance metric to keep track of their career progress in the enterprise.
Actors	Management, HR, Employee
Model	<p>Business Process Manage Employee Performance</p> <pre> graph LR Start((Start)) --> Task1[Establish Individual Performance Requirements] Task1 --> Task2[Conduct Feedback] Task2 --> Task3[Complete Review] Task3 --> Task4[Set Future Goals] Task4 --> End(((End))) </pre>

ID	BP011
Name	Develop/Implement Employee Skills Program(s)
Description	The Management identifies the need to have skill development programs for employees and forwards the development and implementation to HR
Actors	Management, HR
Model	<p>Business Process Develop Employee Skills Program(s)</p> <pre> graph LR subgraph Pool [Business Process Develop Employee Skills Program(s)] direction TB subgraph ManagementLane [Management] Start((Start)) --> Task1[Adopt/Start Employee Skills Program] end subgraph HRLane [HR] Task2[Establish Benefits and Eligibility Rules] --> Task3[Select Program Provider] Task3 --> Task4[Coordinate Implementation with Partners/Providers] Task4 --> Task5[Create Approach and Content] Task5 --> Task6[Pilot Program for Approval] Task6 --> Task7[Announce Event Information and Registration Details] Task7 --> End(((End))) end Task1 --> Task2 end </pre>

ID	BP012
Name	Manage Employee Tasks
Description	The Management determines schedule for employees by delegating timely tasks and the HR resolves any conflicts with Employees and finalize the duties.
Actors	Management, HR, Employee
Model	<p>Business Process Manage Employee Tasks</p> <pre> graph TD subgraph Management_Lane [« Lane » Management] Start((Start)) --> Determine[Determine Schedule for Employees] Commit[Commit Task Schedule for Employees] --> End((End)) end subgraph HR_Lane [« Lane » HR] Modify[Modify Employees Schedule] Verify[Verify Schedule and Resolve Conflicts] end subgraph Employee_Lane [« Lane » Employee] Approve[Approve Personal Schedule] Approved{Approved?} end Determine --> Modify Modify --> Approve Approve --> Approved Approved -- No --> Modify Approved -- Yes --> Verify Verify --> Commit </pre>

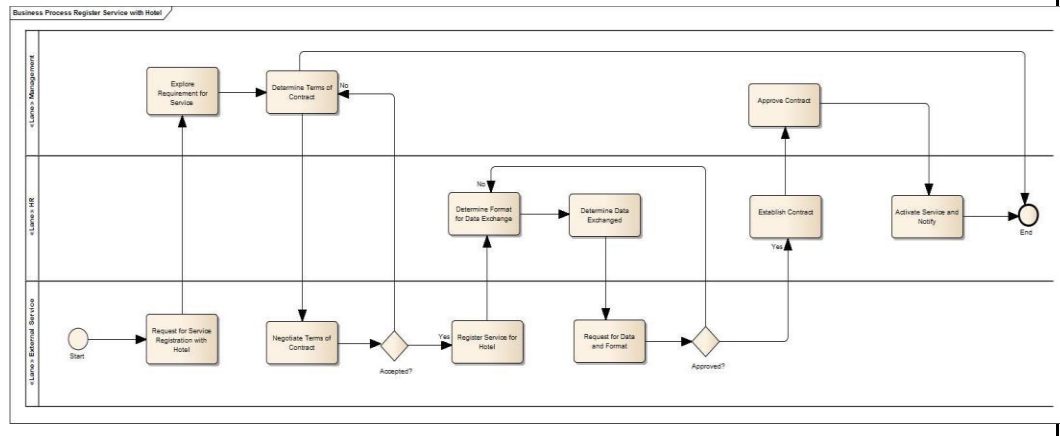
ID	BP013
Name	Manage Grievances
Description	The employee can file any grievance that will be processed by the HR and resolved by the Management
Actors	Management, Employee, HR
Model	<p>Business Process Manage Grievances</p> <pre> graph LR subgraph "Employee/ Customer" Start((Start)) --> FileGrievance[File Grievance] end subgraph "HR + Management" IdentifyIssue[Identify Issue] --> AdviseResolution[Advise Resolution] AdviseResolution --> Accepted{Accepted?} Accepted -- Yes --> ProcessGrievance[Process Grievance] ProcessGrievance --> AnnounceDecision[Announce Decision] AnnounceDecision --> End((End)) Accepted -- No --> EngageAlternatives[Engage in Alternatives to Resolution] EngageAlternatives --> Accepted end FileGrievance --> IdentifyIssue </pre>

ID	BP014
Name	Manage Labor Relations
Description	The employee can address their concerns via their Unions to the Management
Actors	Management, Union
Model	<p>Business Process Manage Labor Relations</p> <pre> graph LR Start((Start)) --> UnionRecognition[Union Recognition] UnionRecognition --> ClarifyBargaining[Clarify Bargaining Units] ClarifyBargaining --> EstablishProtocol[Establish Communication Protocol] EstablishProtocol --> InitiateBargaining[Initiate Bargaining Process] InitiateBargaining --> ConductNegotiation[Conduct Negotiation] ConductNegotiation --> ProvideReview[Provide Department Review and Administer Agreements] ProvideReview --> InformUnion[Inform Union] InformUnion --> End((End)) </pre>

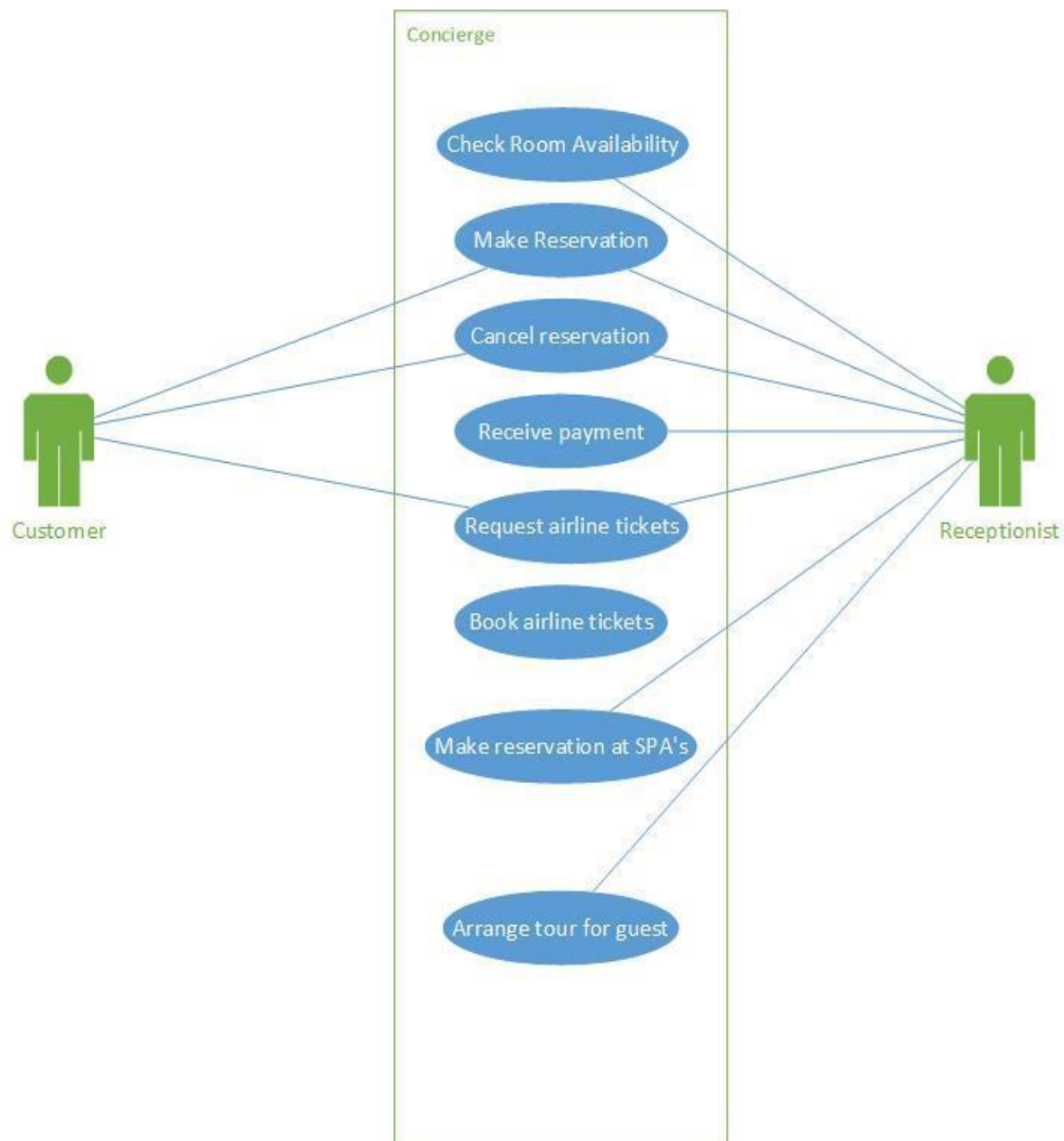
ID	BP015
Name	Manage External Services
Description	New feature in the target system which allows the Management to realize the need for new services for customers of the hotel and let the HR analyze and study the possibility and an External Business to officially interact with the Hotel ER to exchange information about services they may offer to the Hotel customers.
Actors	HR, External Service, Management
Model	<pre> graph TD subgraph Management Start((Start)) --> Identify[Identify Service for Hotel] Identify --> Explore[Explore Requirement for Service] Explore --> DetermineTerms[Determine Terms of Contract] DetermineTerms --> Negotiate[Negotiate Terms of Contract] Negotiate --> Approved1{Approved?} Approved1 -- Yes --> Register[Register Service for Hotel] Register --> DetermineFormal[Determine Formal for Data Exchange] DetermineFormal --> DetermineData[Determine Data Exchanged] DetermineData --> RequestFormal[Request for Data and Formal] RequestFormal --> Approved2{Approved?} Approved2 -- Yes --> Establish[Establish Contract] Establish --> Approve[Approve Contract] Approve --> Activate[Activate Service and Notify] Activate --> End((End)) end subgraph HR DetermineTerms --> DetermineFormal DetermineFormal --> DetermineData DetermineData --> RequestFormal RequestFormal --> Approved2 end subgraph ExternalService DetermineTerms --> Negotiate Negotiate --> Approved1 Approved1 -- No --> DetermineTerms end </pre> <p>The diagram illustrates the 'Business Process Manage External Services' across three swimlanes: Management, HR, and External Service. The process begins in Management with 'Start', leading to 'Identify Service for Hotel', 'Explore Requirement for Service', and 'Determine Terms of Contract'. It then moves to External Service for 'Negotiate Terms of Contract', which leads to a decision 'Approved?'. If 'No', it loops back to 'Determine Terms of Contract'. If 'Yes', it goes to 'Register Service for Hotel' in HR, followed by 'Determine Formal for Data Exchange', 'Determine Data Exchanged', and 'Request for Data and Formal'. Another decision 'Approved?' follows; if 'No', it loops back to 'Determine Formal for Data Exchange'. If 'Yes', it proceeds to 'Establish Contract' in Management, then 'Approve Contract', and finally 'Activate Service and Notify' before reaching 'End'.</p>

ID	BP016
Name	Register Service with Hotel
Description	New feature in the target system which allows a vendor to register its services with the hotel. The Management analyzes the need for the service being offered and decides to approve or deny registration with the hotel.
Actors	HR, External Service, Management

Model



Concierge Business Use Case

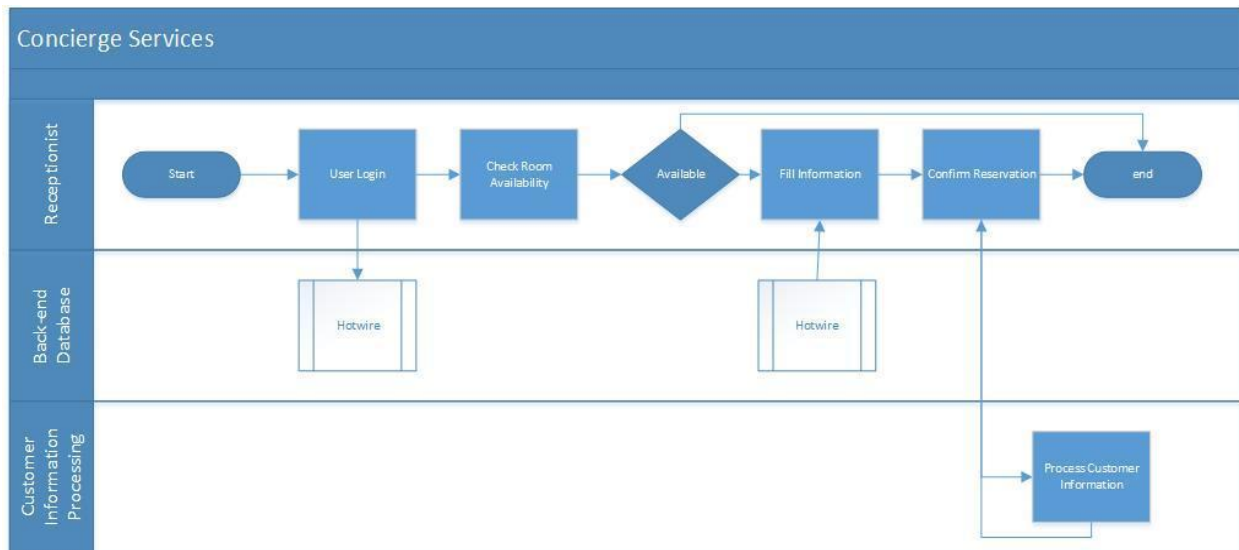


There are two actors for this use case. They are listed below.

1. **Receptionist:** The receptionist is fundamental in assisting the guests with making reservations, checking room availability, receiving payment, booking airline tickets, arranging local tours for the guests and many more such services to the guests.

2. **Customer:** The guest is responsible for making a reservation, cancelling a reservation, requesting flight tickets and many more things. He interacts with the receptionist at the concierge services of the hotel.

Concierge Business Processes



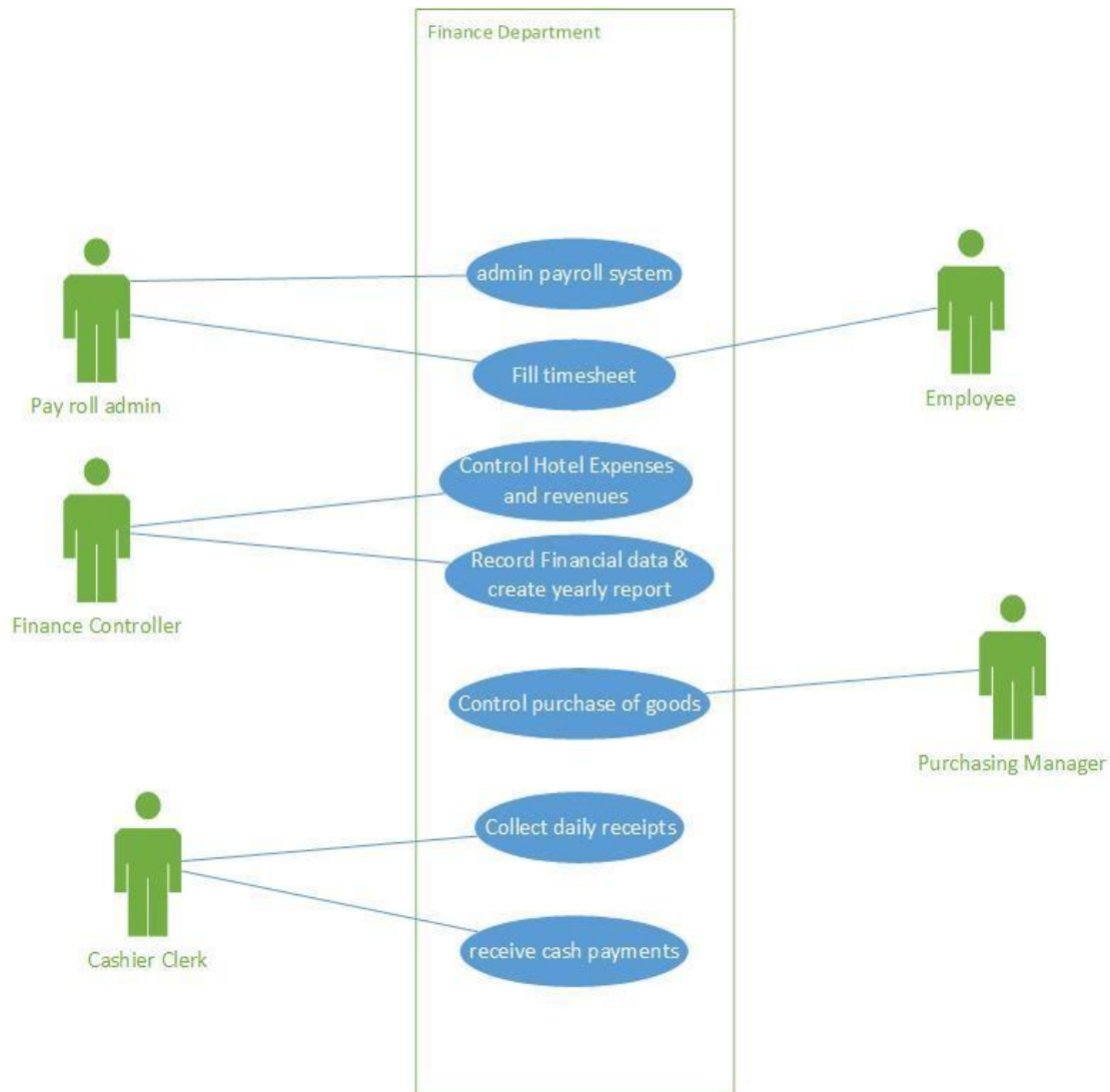
This diagram shows how the different target systems work while the concierge provides the services to its customers/guests. As the current systems is transformed from a desktop application into a web based application. The receptionist as a user logs into the system after which he tries to make a room reservation for the guest. He then checks the room availability. This process checks the hotwire database, which is at the backend.

It then sends the availability status to the receptionist. If the room is available the user proceeds with room reservation and takes the information from the guest and fills out the form. The details are then updated in the hotwire database and the reservation is made available to the guest. In case there are no rooms available the receptionist logs out of the system by telling the guest about the unavailability of the room. The guest information processing system is used to store the guest details.

1. **Check Room Availability:** the receptionist uses this process for checking the room availability.
2. **Make Reservation:** This process is used to make reservations for the guests.
3. **Cancel Reservation:** This process is used to cancel reservations for the guests.

-
4. **Receive Payment:** This process is used by the receptionist to receive payments from the guests.
 5. **Make Reservation at Spa's:** Guests can use this process to make reservation at Spa's, nearby restaurants etc.
 6. **Book Airline Tickets:** This process is used to book airline tickets for the guests.
 7. **Arrange Tours for Guests:** This process is used by the receptionist to arrange tours to nearby places for the guests.
 8. **Request Airline Tickets:** The guests use this process to request for airline tickets.

Finance Business Use Case



The actors for this use case. They are listed below.

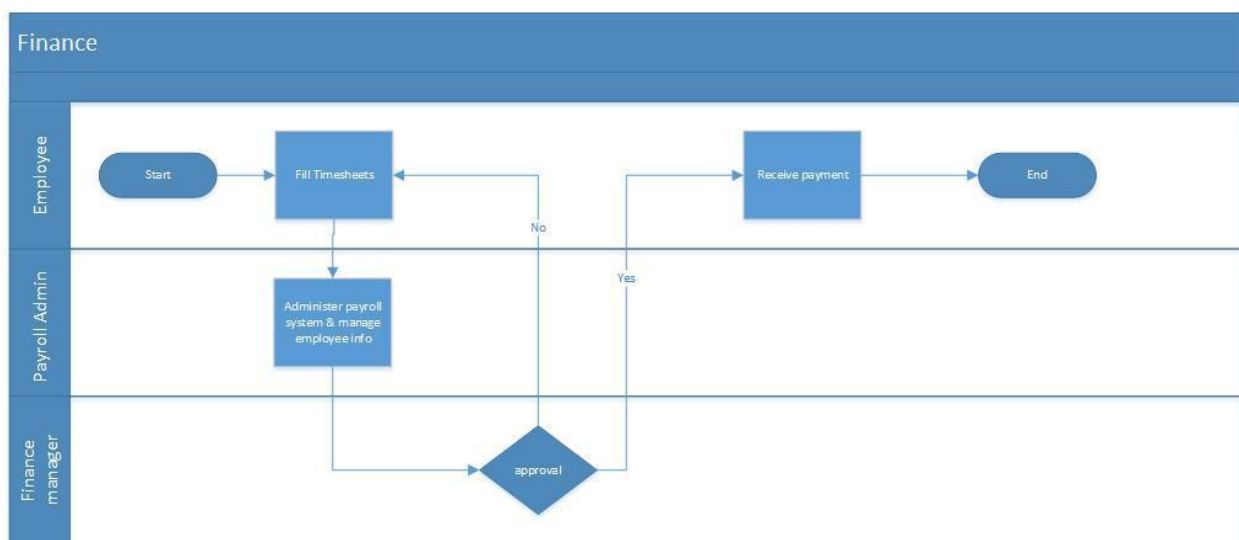
1. **Payroll Admin:** Administers the payroll system and sends reminders to the employees about their timesheets
2. **Financial Controller:** Manage the Financial Function of the hotel to ensure the accuracy, integrity, legality and timeliness of financial reports in accordance to regulations and Hotel's standards so can to support operation and achieve financial goals.

3. **Cashier Clerk:** Responsible for adequate money supply in the hotel, collecting of all daily receipts and to do daily banking, Responsible also for cash payment and reimbursement

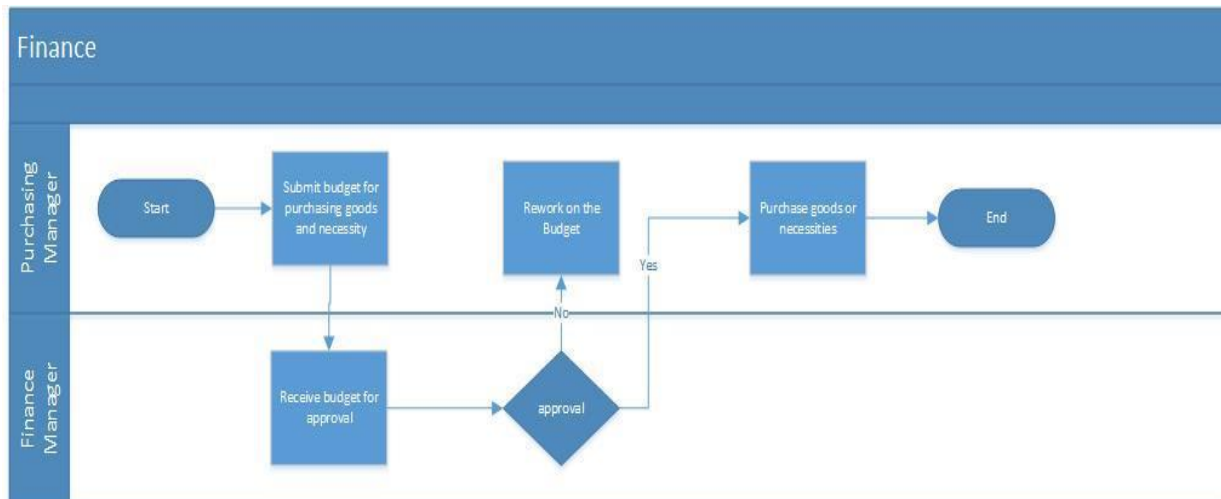
4. **Employee:** An employee is an actor that works for the enterprise and gets paid on the basis of hours that he has worked

5. **Purchasing Manager:** Monitors and controls the purchases of goods and services at the correct prices, in economics quantities and with acceptable quality

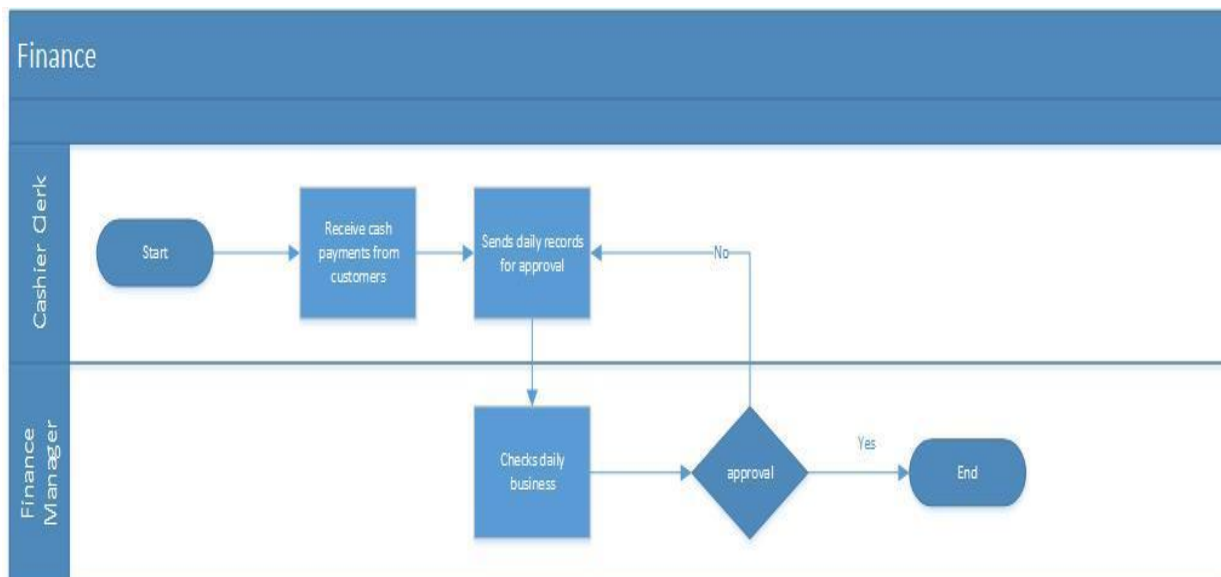
Finance Business Processes



The diagram explains the payroll system where the employees fill in their respective time sheets. This system is administered by the payroll admin who keep the employee information. The finance manager approves the timesheets and based on this approval the employee receives their salaries.

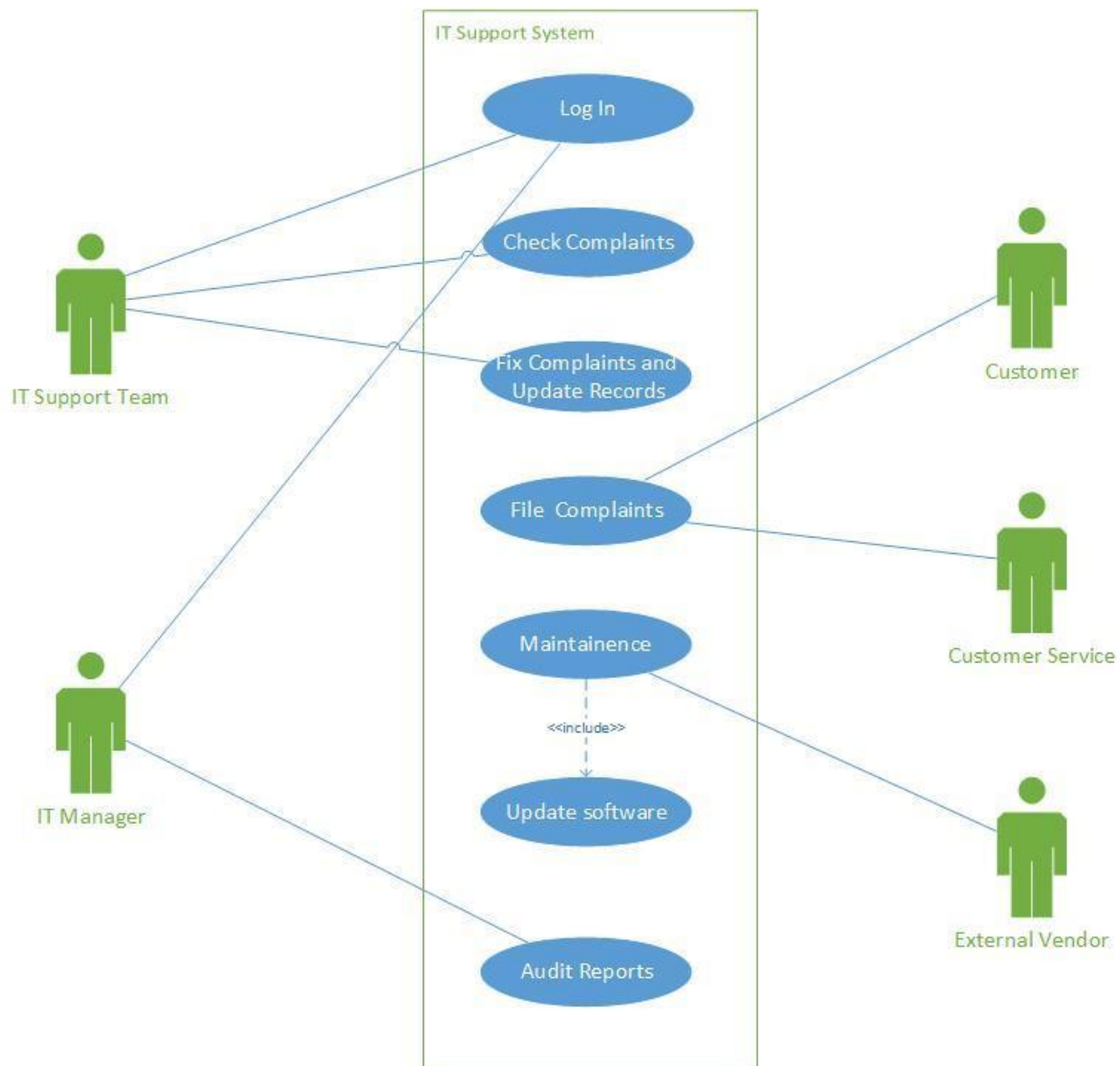


The diagram has 2 actors, the purchasing manager and the finance manager. The purchasing manager prepares the budget and submits it for approval from the finance manager. If the Finance manager approves the budget, the purchase manager purchases the necessary material else the purchasing manager has to redo the budget.



This diagram involves the cashier clerk and the finance manager. The cashier clerk receives payments from the customers and sends daily reports to the finance manager. The finance manager checks daily records and approves the daily sum.

IT Support Business Use Case



The actors for this use case. They are listed below.

1. **File Complaints:** The customer in case faces any problem related to the Wi-Fi or the virtual key system; they either contact the customer service desk or the IT support. The IT support person files in a complaint for the customer or the customer can file the complaint online on the hotel website.
2. **Log In:** The IT support team and IT manager have to log In to the system with their credentials (username and password) before they can check their attendance and

check complaints. This is a security feature so that no unauthorized person can get access to information.

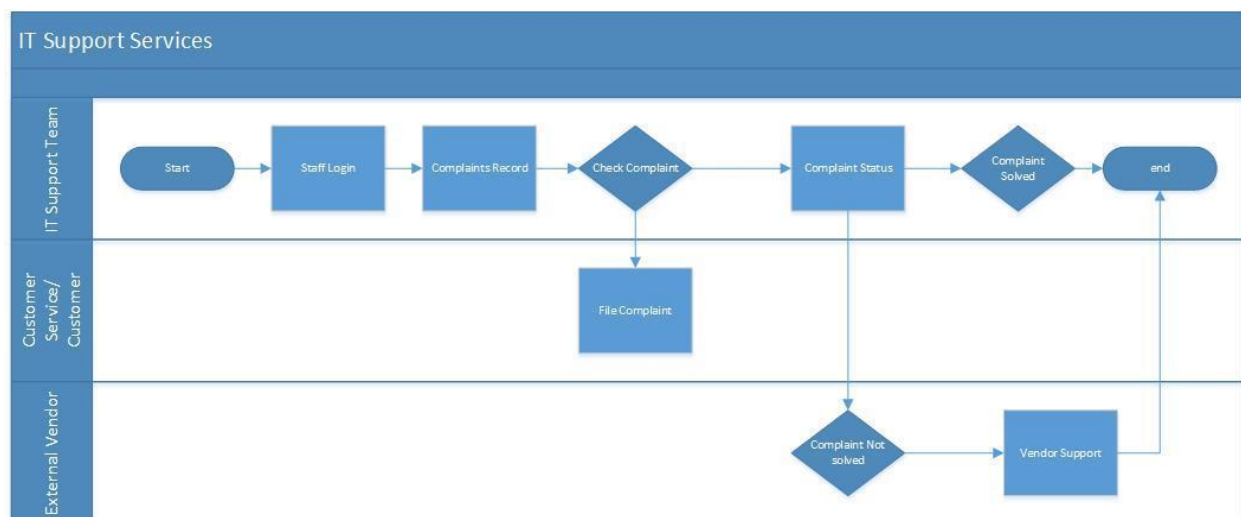
3. **Check Complaints:** Once the IT support member have logged in to the system, they need to check if there is any complaint and if there is they need to contact the required person and take necessary action towards getting it fixed.

4. **Fix complaint and update records:** Once the necessary action has been taken it necessary to keep track of the progress and weather it has been taken care of or not and if it has been fixed then the records of the system need to be updated.

5. **Maintenance:** The maintenance and upgradation of the software is taken care by the external vendor from whom the software was bought.

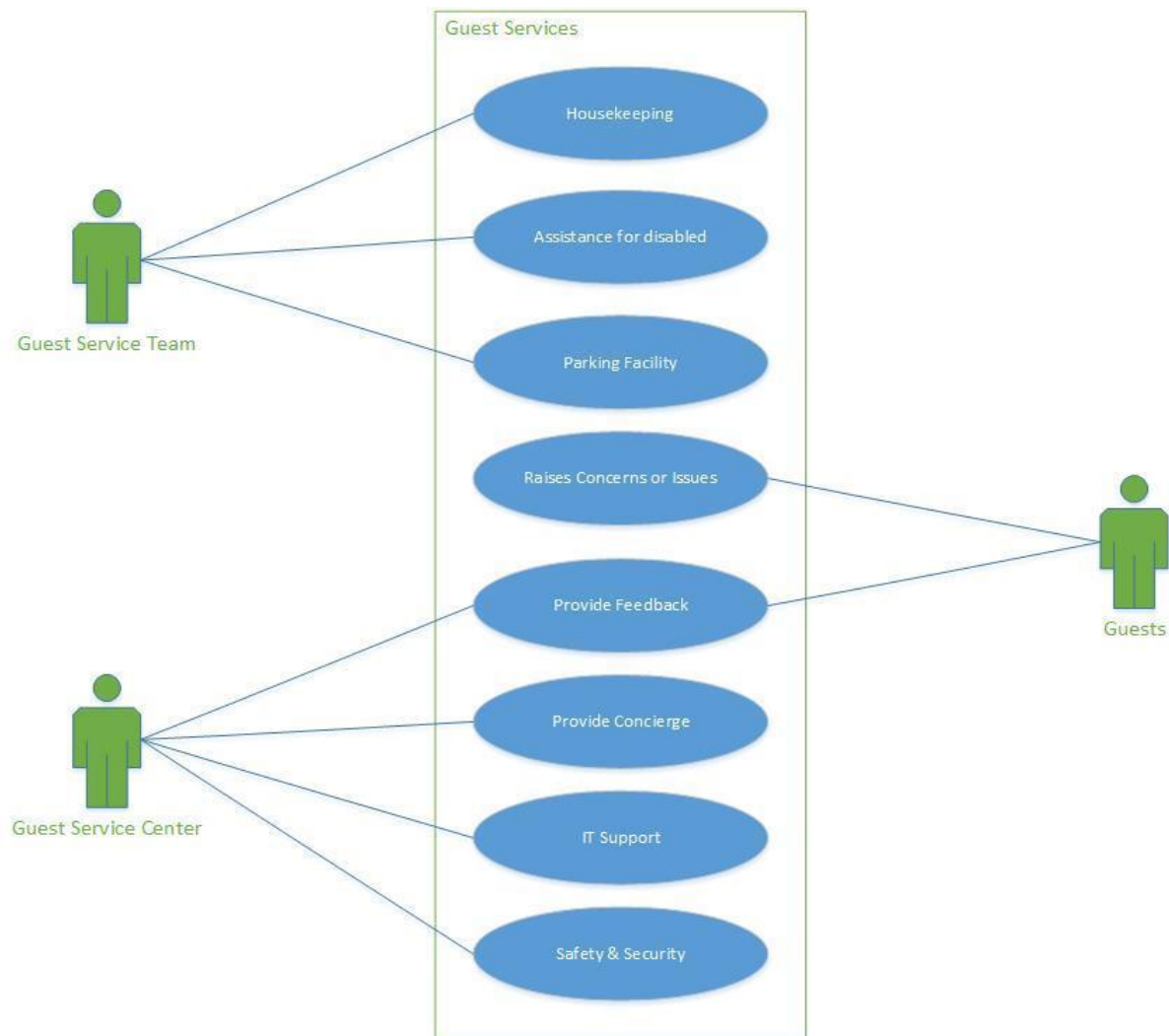
6. **Audit Reports:** It is the duty of the IT manager to audit all the reports and make sure all the complaints have been taken care of.

IT Support Business Processes



This diagram explains the process in where the IT supports team first logs in with their credentials in to the system to check for any complaints filed in by the customer or customer services. They then try to solve the issue, in case they are not able to solve the problem, they contact the external vendor from whom they bought the software. They will help them to solve the problem.

Guest Services Business Use Case

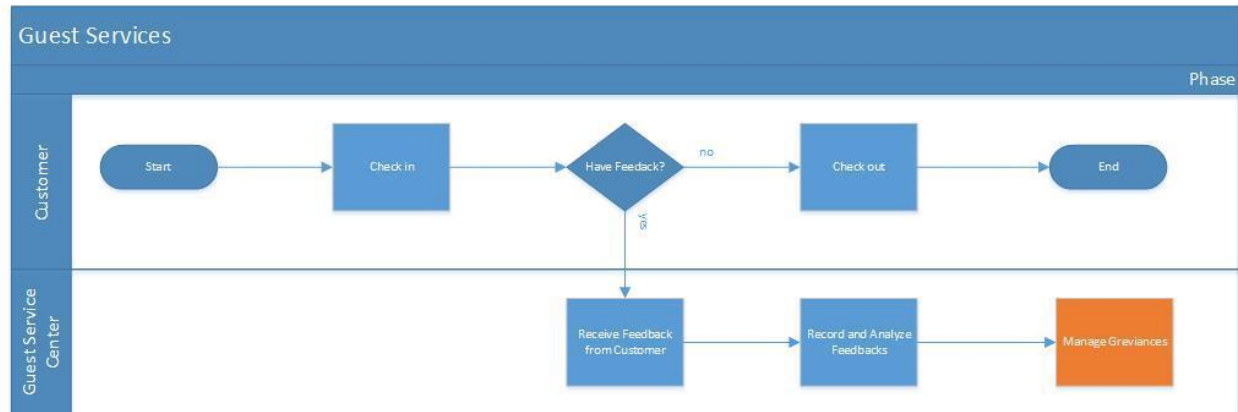


There are three actors involved for this use case. They are listed below.

1. **Guest Service Team:** This is actual team of hotel staff members which assist the guest with various facilities like attending housekeeping concerns, providing parking facilities, assisting the disable guest so that to make their stay pleasant.
2. **Guest Service Center:** The guest service center is responsible for coordinating between the guests and the service team. It is designed to provide information to guests with any questions or concerns. It takes care all the facilities like concierge, Internet are available to the guests. Also it records and analyzes the feedbacks given by the customer.

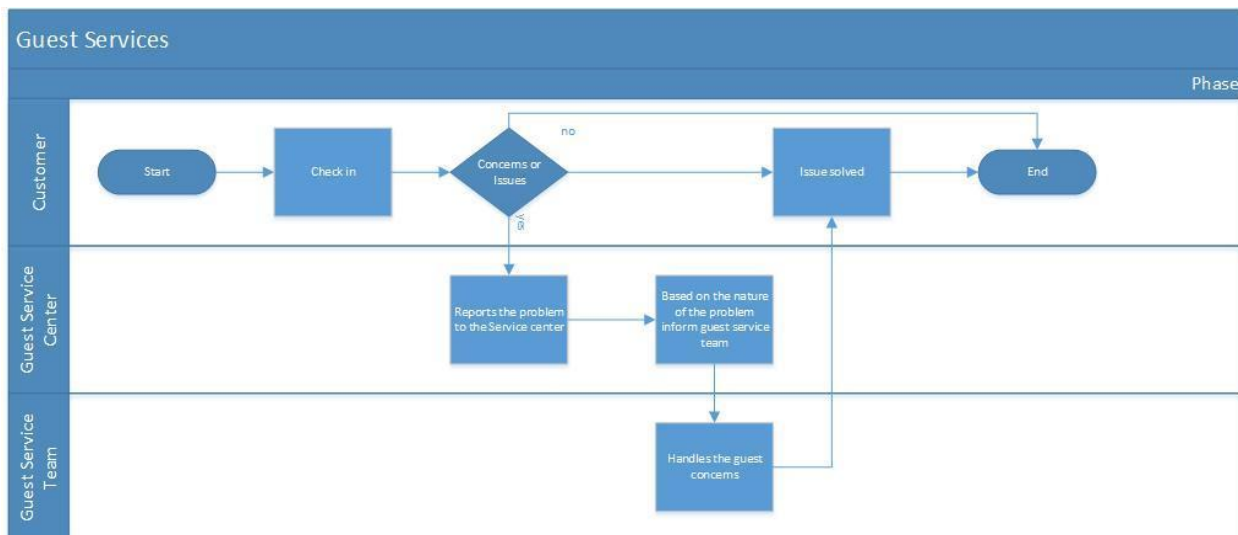
3. **Guests:** They are the receiver of all the services provided. They make use of the various facilities like the concierge provided by the hotel management. They report their concerns and issues to the guest service center. Also they provide valuable feedback which helps the management in improving the services.

Guest Services Business Processes



Provide Feedback

This diagram explains the process where user provides a feedback if they have any. The feedback from the user is received by the Guest service center the feedbacks are recorded and analyzed and passes on to the Manage Grievances. This is another process where the feedbacks are reported to the HR. The management works upon the feedbacks they received so as to improve if they are lagging anywhere or keep up the good work in case of positive feedbacks from the guests.



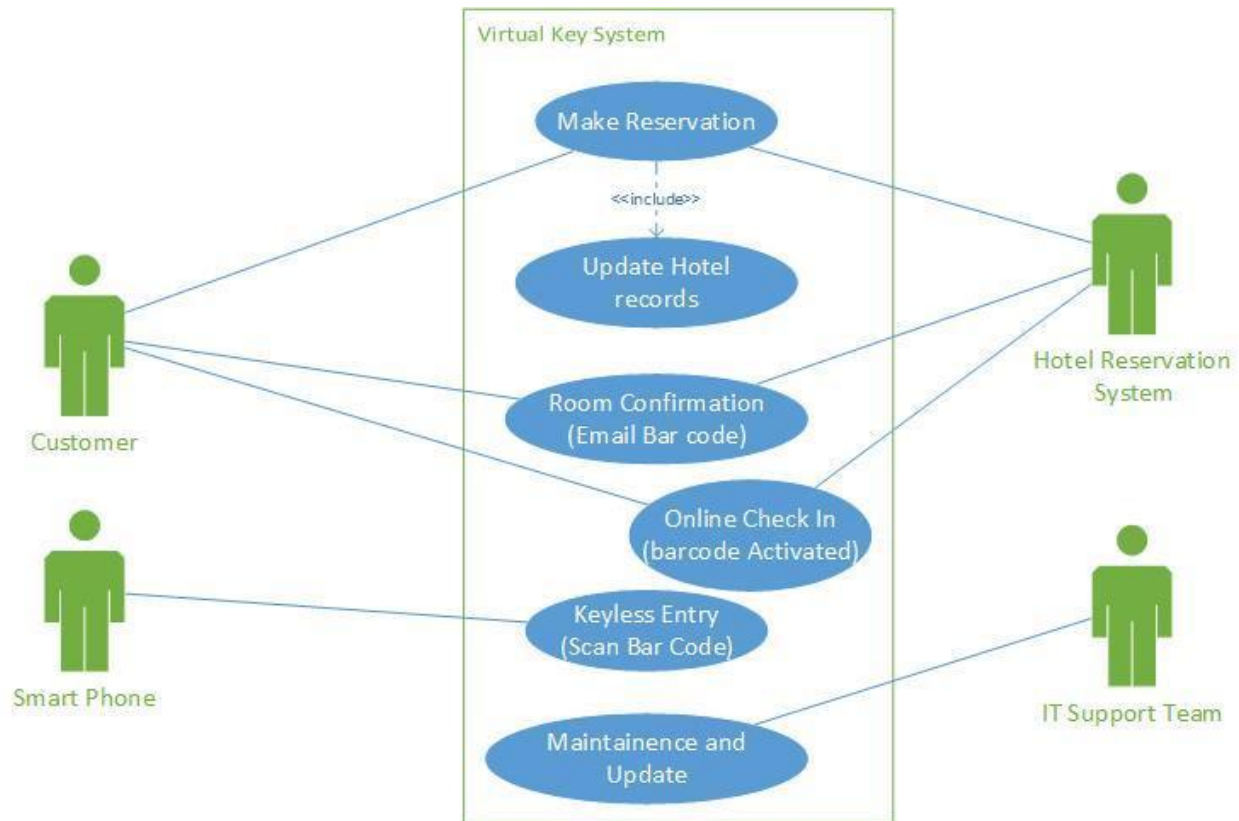
Concerns & Issues

This diagram explains the process here the guest raises concerns if they have during their stay. These concerns/issues are reported to the Service center further based on the exact nature of the problem the service center informs the concerned service team which looks into the matter and try to solve the issue.

The various processes involved are -

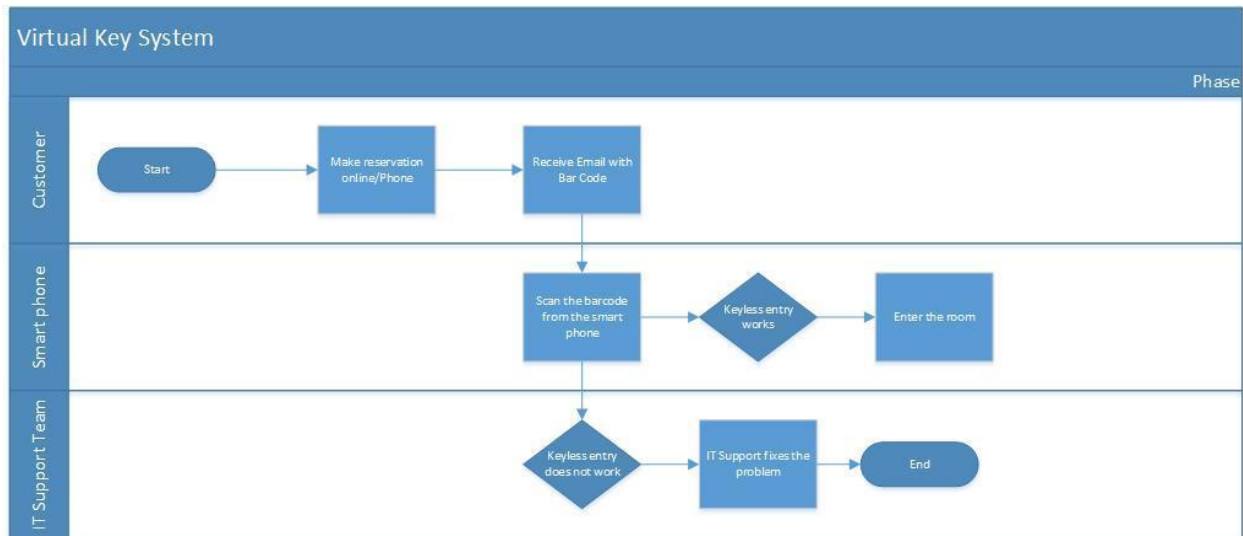
1. **Housekeeping:** This process is mainly concern with attending issues related to keeping the rooms and hotel premises clean
2. **Assistance for Disable:** This process offers services to the guests with special needs.
3. **Parking Facility:** This process helps with providing safe and secure parking facility for the guests at all the time. Also it helps the guests with loading and unloading of goods.
4. **Raises concerns or issues-** This process is responsible for the concerns or issues which the users have these concerns are handle by the guest service center and depending on the nature of the issue the center handles the issue by informing the concerning service team.
5. **Feedback:** This process takes valuable feedbacks from the customer and help the service center make a note of it so that it helps the management.
6. The **other three process** concierge, IT support and security all co-ordinates with the guest services team to provide the best of their own facilities to all the guests so as to have an overall pleasant experience.

Virtual Key System Business Use Case



1. **Make Reservation:** The customer books a room online on the hotel website or via phone to the receptionist or via virtual keep app and the same information is updated in the hotel reservation system.
2. **Room Confirmation:** The room is confirmed once the payment is done and the customer receives an email with a barcode in it.
3. **Keyless entry:** Once the customer is in the hotel he does not need to go to the receptionist and wait in line for his keys, he can directly go to his room and scan the barcode on the keyless system and get into his room.
4. **Maintenance and update:** The support team takes care of any issues the system has and updates the system time to time.

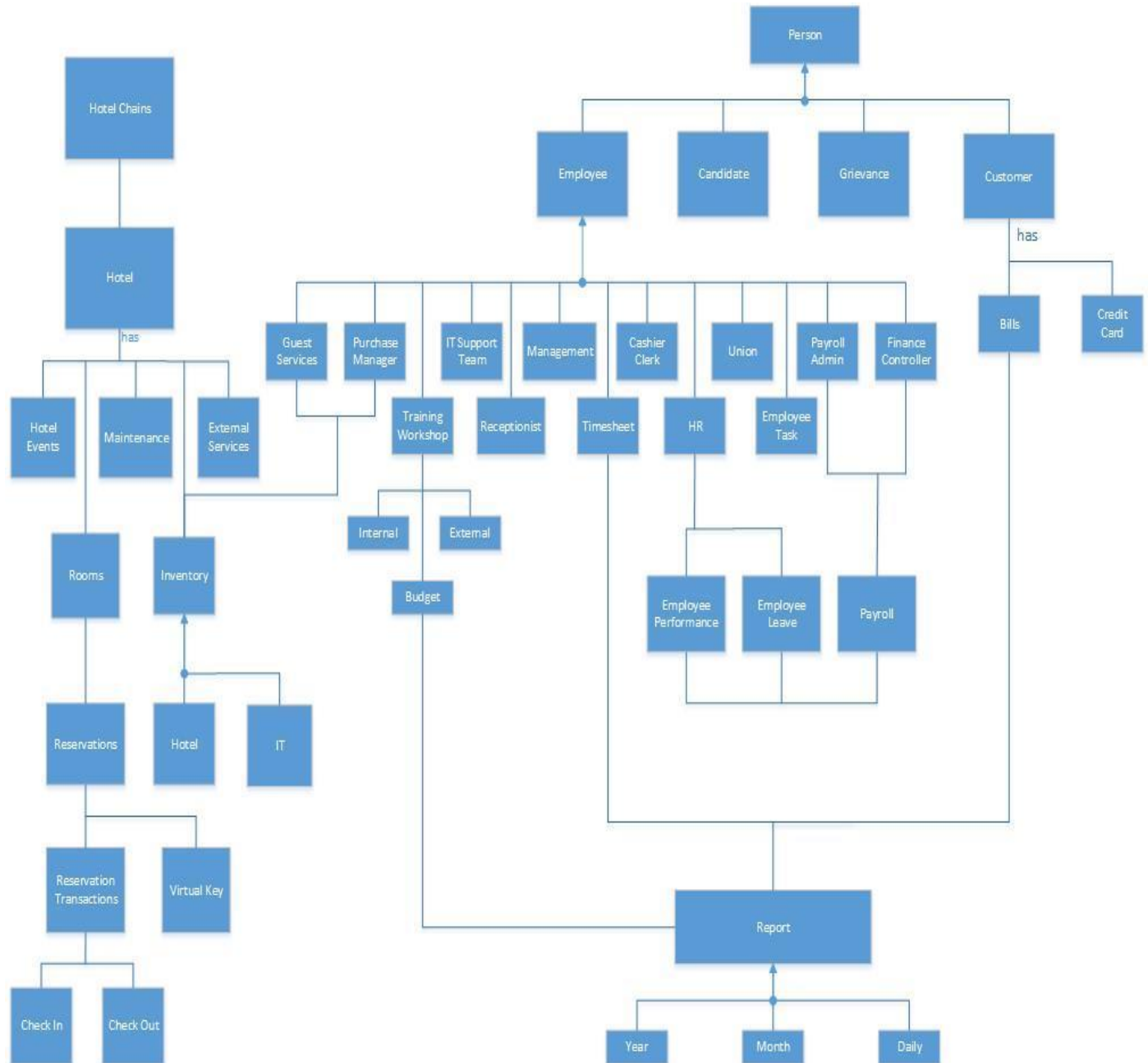
Virtual Key System Business Processes



This diagram explains the process in which the customer starts the process by making a reservation, once the reservation is confirmed the customer receives a barcode in his email. The customer on reaching the hotel bypasses the receptionist and goes directly to his room, scans the barcode from his smart phone on the keyless system and enters in to the room. In case he has any issues, he can contact the IT support in the hotel that is available 24/7.

Phase C. Information Systems Architecture - Data Architecture

ER Diagram



Data Entity - Business Process Matrix

CRUD Matrix

Data Entity to Organization Divisions Mapping

	Administer Bonu s/Reward s	Man age Payr oll	Man age Empl oyee Sepa ratio n	Man age Empl oyee	Hire Empl oyee	Eval uate Cand idate	Man age Orga nizati on & Positi on	Man age Depa rtme nt Budg et	Esta blish Com pany Polic y	
R	R	R	CR	CRUD	CRUD	CR		RU	R	Emp
										Customer
										Union
	RU	CRUD	UD	CRUD	CRUD	RUD	CRUD	CRUD	CRUD	Management
R										Hotel chain
										Hotel
										Room
										Report
										Reservation
										Calendar
										Credit Card
										Reservation Chk
RU				RU				CRUD		Budget
				R		R				Candidate
		CRUD	RU							Payroll
	CRUD					R				Emp Leaves
						R				Emp Performance
										Training
										Grievances
										External Services
RU										Emp timesheet
										Inventory
										Bills
										Hotel Events
										Housekeeping
										Parking
										Airline Reservation
										Spa Reservation
										Food Services
										Security Services
										Maintenance
										Virtual Key

[illegible]

Phase C. Information Systems Architecture - Application Architecture

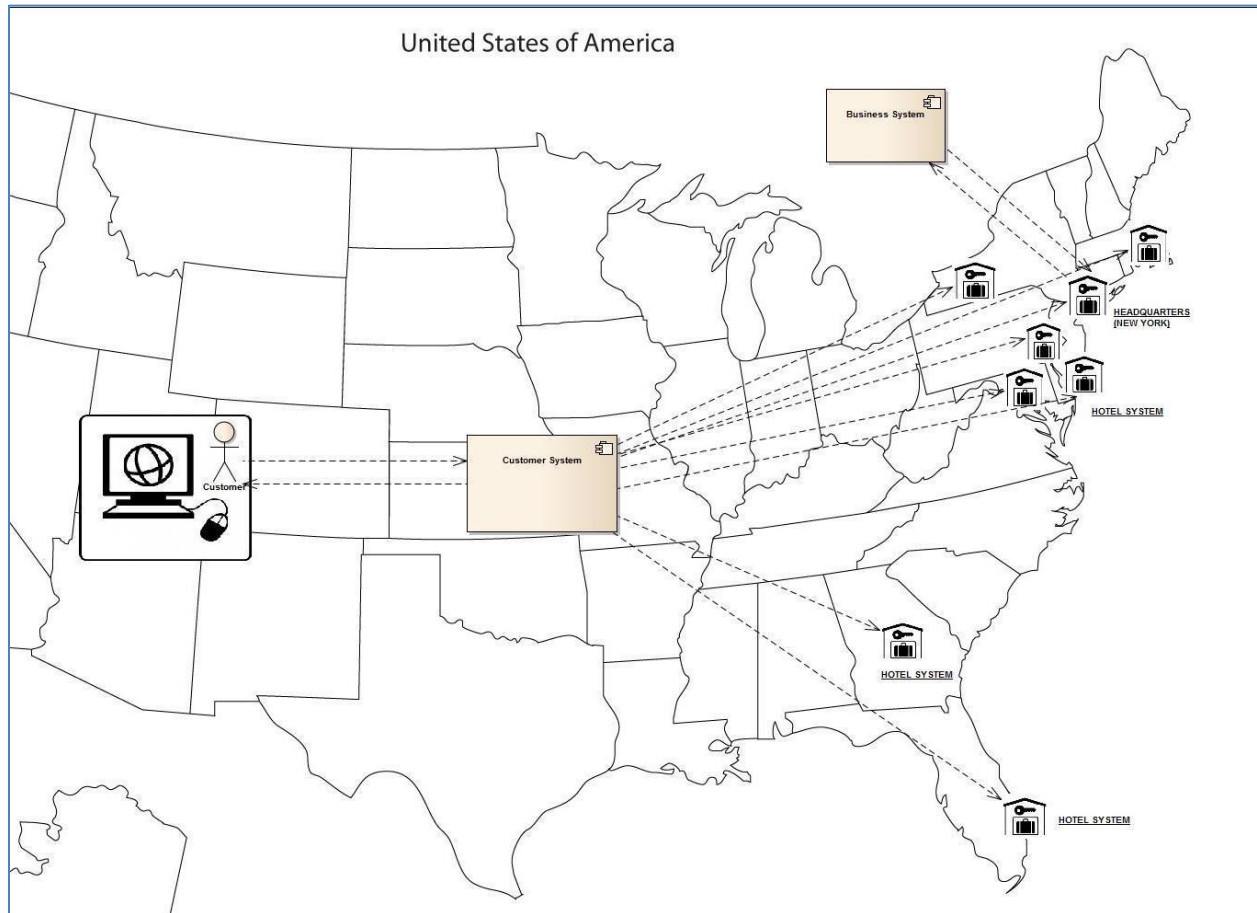
List of Application Systems

Application	Owner	User Group	Sub-applications
Email System	IT Support	HR, Finance, Concierge, Guest Services, Sales and Marketing, Security, House Keeping, Customer	none
Reporting System	IT Support	HR, Management, Sales and Marketing	none
IT Management System	IT Support	none	Software Support, Hardware Support
Hotel Reservation System	IT Support	Customer, Concierge, Guest Services	Check-in, Check-out, Billing, Kiosk Check-in
Accounting System	Finance	HR	Accounts Payable, Accounts Receivable, Reporting, Budgeting, Payroll Processing
Sales and Marketing System	Sales and Marketing	HR, Customer	Business Development, Customer Relationship Management, Forecasting, Marketing Campaign

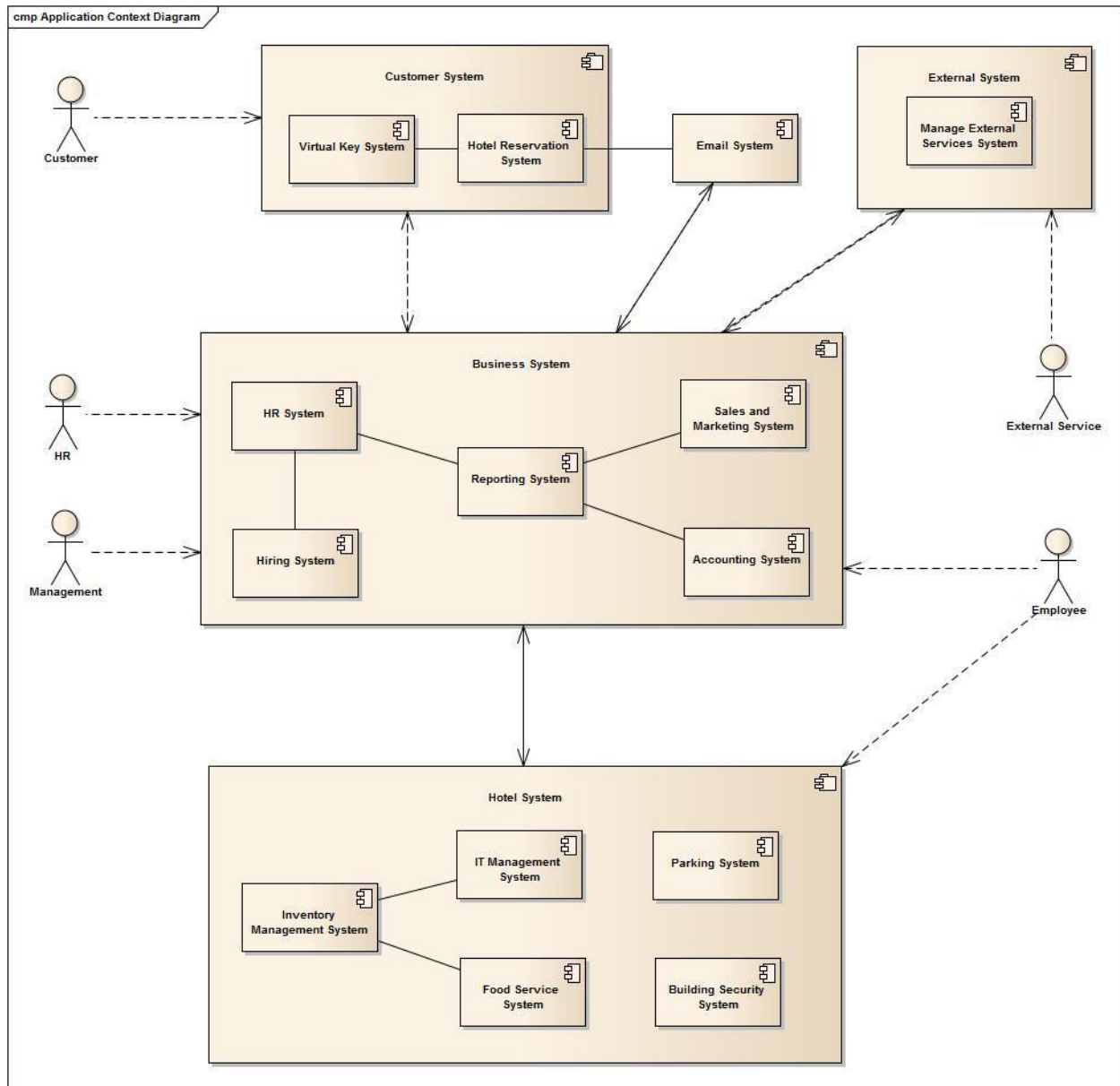
HR System	HR	All Employees	Scheduling Management, Training Programs, Employee Records
Hiring System	HR	Candidate	Employee Orientation, Placement Records, Progress Reports
Inventory Management System	House Keeping	Finance	none
Food Service System	Guest Services	Customers	none
Parking System	Guest Services	Customers, Employees	none
Building Security System	Security	none	none
Manage External Services System	Management	HR, External Services, Customers	Register Service, Update Service
Virtual Key System	IT Support	Customer, Concierge	Generate Virtual Key, Invalidate Key

New Systems

Application to User Location Diagram



Application Context Diagram



Application to Business Process Mapping

	Email System	Reporting System	IT Management System	Hotel Reservation System	Accounting System	HR System	Hiring System	Guest Services System	Manage External Services System	Virtual Key System
Establish Company Policy						X				
Manage Department Budget	X	X			X					
Manage Organization & Position		X				X				
Evaluate Candidate							X			
Hire Employee		X					X			
Manage Employee Separation		X					X			
Manage Payroll		X			X					
Administer Bonus/Rewards		X			X					
Manage Employee Leaves	X					X				
Manage Employee Performance							X			
Develop/Implement Employee Skills Program(s)						X				

Manage Employee Tasks	X	X				X				
Manage Grievances	X					X				
Manage Labor Relations						X				
Manage External Services	X	X							X	
Register Service with Hotel	X	X							X	
Timesheets		X			X					
Admin Payroll					X					
	Email System	Reporting System	IT Management System	Hotel Reservation System	Accounting System	HR System	Hiring System	Guest Services System	Manage External Services System	Virtual Key System
Control Hotel Expenses and Revenues		X								
Record Financial Data & Create Yearly Report		X								
Control Purchase of Goods					X					
Collect Daily Receipts		X			X					
Receive Cash Payments					X					
Online Timesheets		X			X	X				

Check Room Availability				X						
Make Reservation		X		X						
Cancel Reservation				X						
Receive Payment					X					
Make Reservation at Spa's				X						
Book Airline Tickets				X						
Arrange Tour for Guests				X						
Request Airline Tickets				X						
Check In Kiosk				X						
Housekeeping								X		
Assistance for Disabled								X		
Provide Concierge								X		
IT Support			X					X		
Provide Feedback						X		X		
Parking Facility								X		
Request food Service								X		
Safety & Security								X		

	Email System	Reporting System	IT Management System	Hotel Reservation System	Accounting System	HR System	Hiring System	Guest Services System	Manage External Services System	Virtual Key System
Log in			X							
Check Complaints			X							
Fix Complaints and Update Records			X							
File Complaints		X	X			X				
Maintenance			X							
Update Software			X							
Audit Reports		X	X		X	X				
Virtual Key	X							X		X

Application to Data Entities

	Email System	Reporting System	IT Management System	Hotel Reservation System	Accounting System	HR System	Hiring System	Guest Services System	Manage External Services System	Virtual Key System
Employee	R	R			R	RU	CRUD			
Customer	R	R		CRUD	R	RU		RU		
Union					R	CRUD				
Management		R			R	CRUD	RU			
Hotel Chain		R		R	R	CRUD		RU		R
Hotel		R		R	R	CRUD		RU		R
Room		R		R	R	CRUD		RU		R
Reservation		R		CRUD	R	R		CRUD		
Report		CRUD	R	RU	R	R	R	R		
Calendar				CRUD	R			CRUD		
Credit Card				CRUD	R					
Reservation Transaction	R	R		CRUD	R			CRUD		

Check-in and Check-out										
Budget		R			CR UD	RU				
Candidate		R				RU	CRU D			
Payroll		R			CR UD	R				
Employee Leaves		R				RU	CRU D			
Employee Performance		R				RU	CRU D			
Training Workshops					RU	CR UD				
Employee Tasks		R				CR UD				
Grievances		R						CR UD		
External Services		R				CR UD			CRU D	
	Email System	Reporting System	IT Management System	Hotel Reservation System	Accounting System	HR System	Hiring System	Guest Services System	Manage External Services System	Virtual Key System
Employee Timesheets		R			RU	CR UD				
Hotel Inventory		R			R	R		CR UD		
IT Inventory		R	CRU D		R					

Bills	R	R		CRU D	R					
Hotel Events	R	R				RU		CR UD	R	
House Keeping						R		CR UD		
Parking						R		CR UD		
Airline Reservations				R	R			CR UD	R	
Spa Reservations				R	R			CR UD	R	
Food Services				R	R			CR UD	R	
Security Services			CRU D	R	R			CR UD	R	
Maintenance		R	CRU D						R	
Virtual Key	R	R	RU	R						CRU D

Phase D. Technology Architecture

Inventory of hardware and software

Hardware

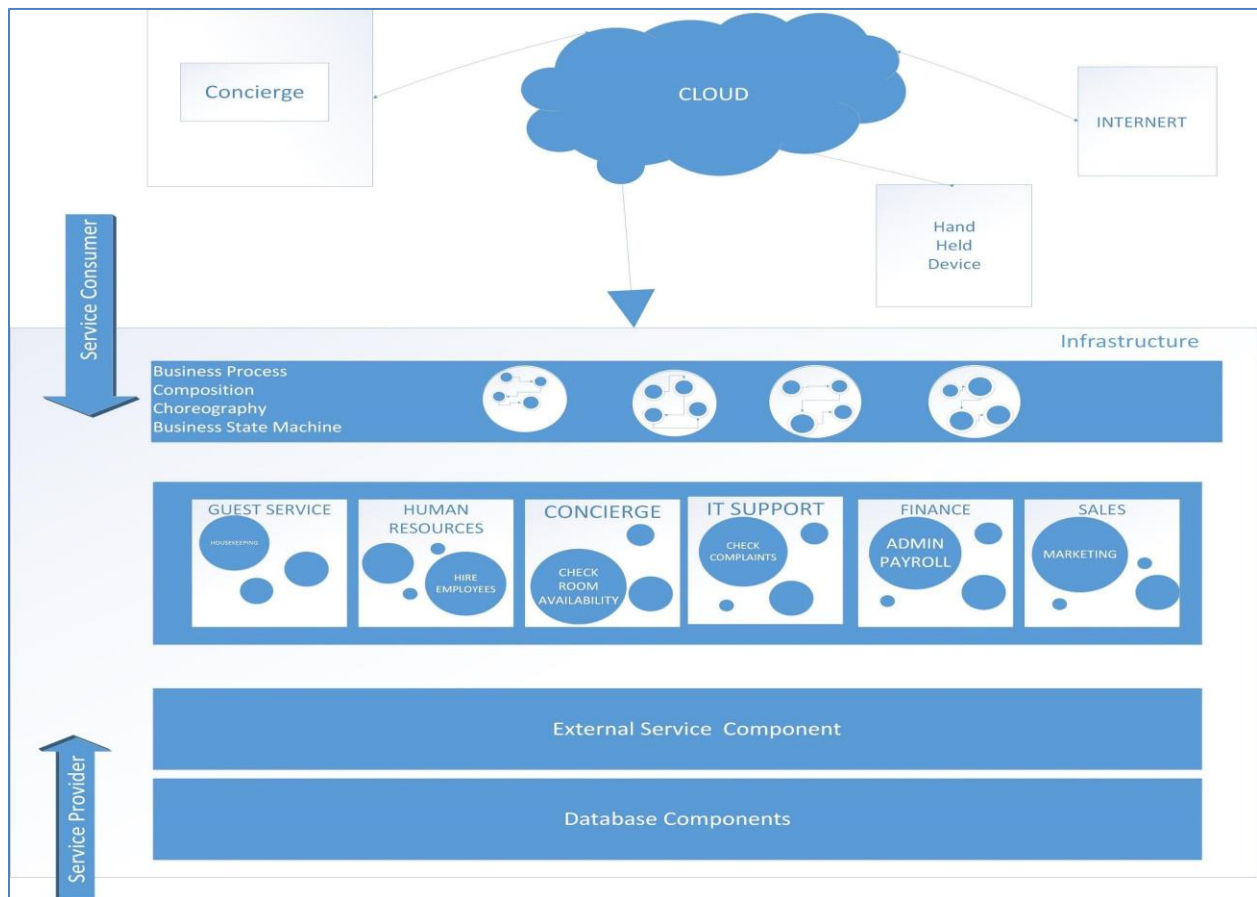
Name	Specifications	Quantity
HP Pro 3500	<ul style="list-style-type: none">• Micro tower• 1 x Core i5 3470 / 3.2 GHz• RAM 4 GB• HDD 500 GB• DVD SuperMulti• HD Graphics 2500• GigE• Windows 7 Pro 64-bit / 8 Pro downgrade• Pre-installed: Windows 7	50
HP xw4600 Workstation (RB430UT)	<ul style="list-style-type: none">• Intel® Core™ 2 Duo processor E6850, 3.00 GHz, 4 MB L2 cache, 1333 MHz Front Side Bus• Intel® X38 Express chipset• DDR-2 667 or 800 MHz ECC un-buffered• 4GB (4 x 1 GB) standard memory• 250 GB internal Hard disk drive• 7200 rpm HDD speed• SATA 3GB/s NCQ hard disk controller	4

HP EliteBook 8570w Mobile Workstation	<ul style="list-style-type: none"> • Intel Dual Core (6MB L2 cache) • 6GB RAM • 600GB Hard disk • UDMA Mode 5 transfer mode • 10 Mb/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) Ethernet speed • Intel 82579LM/82579V Ethernet network connection 	2
HP Pavilion 14-q010nr Chrome book Laptop	<ul style="list-style-type: none"> • Intel® Celeron® 2955U with Intel HD Graphics (1.4 GHz, 2 MB cache, 2 cores) • Intel HD Graphics • 4 GB 1600 MHz DDR3 (on-board) • 80 GB SATA SSD • 65W AC power adapter • 4-cell (51WHr) Li-ion battery 	25
Cisco 1800 Series Integrated Services Routers	<ul style="list-style-type: none"> • 10/100 Mbps built in routed ports • Eight 10/100 Mbps built in switch ports with optional • Power over Ethernet (PoE) for providing DC power to network devices such as IP phones 	5

Software

Name	Quantity
Genuine Microsoft Windows 8.1 64 bit	60
Red Hat Enterprise Linux Advanced Platform	4
Genuine Microsoft Windows 7 Enterprise 64bit	17
Microsoft Office 365	81
IBM DB2 9.1	2
Amazon DynamoDB	1
Amazon EC2	2
Amazon S3	1

Technology Architecture



Business Process to Software Mapping

Business Process	Genuine Microsoft Windows 8.1 64 bit	Red Hat Enterprise Linux Advanced Platform	Genuine Microsoft Windows 7 Enterprise 64bit	Microsoft Office365	IBM DB2 9.1	Amazon DynamoDB	Amazon EC2	Amazon S3
Human Resources	X	X		X			X	
Finance			X		X			X
IT Support	X	X	X	X	X	X	X	X
Guest Services	X			X			X	X
Concierge	X	X		X				X
Sales and Marketing		X	X		X	X		
Housekeeping	X			X		X	X	

Security		X	X	X	X			
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Phase E. Opportunities and Solutions

Not applicable.

Phase F. Migration Planning

Transition Plan

1. Gap Analysis

Human Resources

a) Baseline/Target differences analysis:

This architecture focuses mainly on the Information technology aspects of the Human resources process of Sunshine Inn hotel. Some notable differences are found while analyzing the gap between the baseline and target architectures. They are listed below:

- i) Adding a new system that will be able to use the external services/businesses, which allows the Management to realize the need for new services for customers of the hotel.
- ii) New mechanisms to share the information with the external businesses in order to better serve the hotel customers.
- iii) New feature in the target system, which allows an external vendor to register its services with the hotel. The Management analyzes the need for the service being offered and decides to approve or deny registration with the hotel.

b) Legacy Systems:

Some of the old traditional methods like maintaining the data for new employees are manual. In the new system it will be replaced by an automated employee database where the data is stored online in databases and in a more secure form.

IT Support**a) Baseline/Target differences analysis:**

The main focus is on the Information technology aspects of the IT Support business process. The changes to this business process will be a challenging task since we are planning to implement a new feature that will boost the profits of the hotel.

The differences between the current and target system will be as follows:

i.) The target system will have a new technology, which is known as the virtual key technology for check-in and checkout from the hotel rooms. With this new system the customers can book a room using the website or mobile app and receive the key on their smartphone. They can then check-in to their room by tapping their smartphone with the virtual key on the door card reader and gain access. Similarly they can check out using the website or their smart phone app.

b) Legacy Systems:

The old way of check-in and checkout by the hotel customers will be slowly discontinued based on the response of the new system. At this point of time we would be using the old system with the new system.

Concierge

a) Baseline/Target differences analysis:

This architecture focuses mainly on the Information technology aspects of the Concierge business process of Sunshine Inn hotel.

The differences between the baseline and target architectures are given below.

- i.) The new system will have a check-in kiosk where in the hotel customer can come in and check-in to get his key if he forgets to get his virtual key. He can do this by either entering his confirmation number or the credit card used to book the room or just by entering.

2. Assessing Technology Maturity

Human Resources

In order to assess the maturity of the technology that would be used in the target system we have come up with the following analysis.

a) Required Technologies:

The new target system requires new technologies and software's. To make this possible we would require new external services from the external vendors. This would be achieved in the form of Web services and Service oriented architecture. This would facilitate the exchange of data between the hotel system and the external vendor.

b) Target System's Technology Maturity:

The technologies proposed to be used for the target systems are robust technologies. Since there is a communication between external vendors we are planning to use an extra layer of security between the two systems.

c) Technology Roadmap:

The current system doesn't have an application in place to interact with any external services/vendors. As a first step we will have to create a list of external vendors with which we will do business. The second step is to create an application, which is web based. This application would interact with the external services/vendors to exchange information. The data exchange format would be XML format.

d) Technology Selection:

Based on the extensive research for our project needs we came to a decision to use a service-oriented architecture with Web services to enable the communication between hotel systems and the external services/vendors.

IT Support**a) Required Technologies:**

In order to build a new target system several technologies are used based on the enterprise needs. Firstly we need a Smartphone technology like Android, iOS to enable to develop a smartphone app. The target system i.e. the virtual would enable the users to use their smartphones to check-in to their rooms in the hotel.

b) Target System's Technology Maturity:

The technologies that will be used for the target systems are robust, tried and tested. No external security is required since it is a proven technology.

c) Technology Roadmap:

The current system doesn't have an application to achieve this functionality. As a first step we will have to create an application that would enable the users to use their smartphones to check-in to their rooms in the hotel. As a second step we would require a relational database to store the reservation, customer information.

d) Technology Selection:

Based on the extensive research for our project needs we came to a decision to use a mobile-based architecture, which has support for multiple mobile-based platforms.

Concierge**a) Required Technologies:**

In order to build a new target system several technologies are used based on the user's needs. Firstly we would need a web-based system, which would enable the user to self-check-in at the kiosk. This facility is a new addition to our existing system, which allows the users to check-in and gets the key in case he forgot to bring the virtual key with him. He can get in an easy manner just by entering the confirmation number or the credit card he used while booking the hotel room.

b) Target System's Technology Maturity:

The technologies that will be used for the target systems are robust, tried and tested and secure. No external security is required since it is a proven technology.

c) Technology Roadmap:

The current system doesn't have an application, which would enable the users to check-in at a kiosk. As a first step we will have to create an application that would enable the users to enter their details in order to obtain the key at the kiosk. As a second step we would require a relational database to retrieve the reservation, customer information.

d) Technology Selection:

Based on the extensive research for our project needs we came to a decision to use an individual component for the Concierge business process.

IDENTIFYING DESIGN CONSTRAINTS:

In this part we will be discussing the various constraints which we faced while trying to achieve the functionalities of our targeted system. We will be talking about only those processes for which we faced most challenges. The following are the three processes where we came across plenty of design constraints.

a) Human Resources:

It focuses on wide range of activities like selection assessment of employees, overseeing organizational leadership, ensuring compliance with labor laws and so on. The other sub process involved in this particular business process is as follows

- Manage Department Budget Manage Grievances,
- Manage External Services, etc

Out of those the last two were mainly involved for our targeted system. These new features in the target system allows the Management to analyze and study the possibility of merging with External Business to officially interact with the Hotel ER to exchange information about services they may offer to the Hotel customers.

The other two business process where we faced high amount of constraints are

b) IT Support:

IT support is the nucleus of the organization when it comes to IT Support or information. They are involved with setting up intercom services throughout the hotel, developing and maintaining the hotel website so that it is easy for the customers to book rooms online, etc. The mission of the IT Support team is to provide professional and friendly service in support of excellence. The main sub process involved in this which will be reflected in our target system was the Virtual key.

c) Guest Services: The guest services also involved lot of sub process which was to be handled in the targeted system. The guest services was mainly concerned assisting the guest with various facilities like food services, providing parking facilities, assisting the disabled, etc. out of these Parking , food service and security was needed to be taken care in the targeted system.

We tried to divide constraints in the following four categories Time, performance, physical and size constraints.

➤ **Time constraints:**

Talking about the time constraint we had to complete the deployment process of our targeted system in the time period where the guest traffic is the least. This was very important to avoid any type of inconvenience to the guest when the frequency of guests arriving is high during vacations etc. Through the hotel records the time slot was decided when the number of guest recorded were low and phases of deployment were initialized. The hotel management carefully reviewed all the phases' in order to check the progress to achieve the targeted system.

➤ **Performance constraint:**

When we talk about performance any process we utilize its performance need to be very high. The evaluation of the performance is on the basis of robustness, availability of the system and its efficiency of working. The various processes can be evaluated on these basic criteria as well as some additional ones which are only needed for some particular process. The target system is aimed in such a way that the most important thing is availability to the user. Now in case of Virtual key the failure of its availability would directly affect the guests, any mistake or carelessness can cause delay in the further process of accommodation causing displeasure to the arrived guest

➤ **Size/Volume constraints:**

When it comes to the size constraints it all depends on the performance and the time constraints criteria. Though all the applications involved in our target system are mid-size but when you add the post development services of these application like maintenance the size considerably increases again in case of the virtual key application, it involves the service to be made available to the user online this involves lot of server and client side interaction at the same time this implementation needs to be delivered in the right time to any customer accessing this service.

➤ **Physical constraints:**

The process which involves Manage External Services Parking, food service and security need that particular service to be available physically. In our case we are using the external services to provide the food services and parking facility. Say at a particular instance if there is no availability of the service requested this might create a problem. So if we can arrange the system which always checks for the availabilities of these services irrespective of any request made it can prove beneficial to the organization.

TRANSITION MIGRATION OPPORTUNITIES:

a) Guest services:

When it comes to guest services there are various processes which will be taken care in a different ways when the target system will be ready. Services like parking facility, food services and safety and security will be outsourced to external vendors.

This decision was taken by the hotel management while migrating to a new system. This migration from in-house (i.e. the hotel management themselves will provide all these amenities to the guest) to outsourcing the services was taken based on the previous recorded data.

The main advantages of outsourcing these services are:

1. Many of the current issues with supporting the services will be solved.
2. Since the vendor from where a particular service will be taken will be having expertise in the service they offer, it will be less time consuming to manage and solve other important management issues.

b) Human Resources:

Some of the important processes which will come up in the targeted system are: Manage External services and Register service with hotel.

As some services will be out sourced in the new targeted system the external service system should be able to handle these service efficiently. The human resources will be in charge of looking after these outsourced services. A new system will be needed which can manage the various vendors from which the services will be used. This system needs to be customizable so as to allow any new or prospective vendor to be registered so as to consider their services. Based on the requirements and data analyzed the management will be able to make decisions of approving or denying the vendor.

This adoption of new system in the targeted system needs some factors to be addressed:

1. Training and workshops will be held for the employees and staff at different phases of implementation of new system. These workshops will help the staff to be able to use the new system efficiently.
2. The system will help evaluate the need and feedback of all the vendors all of these records will help management make a decision of extending the offer or deny it.

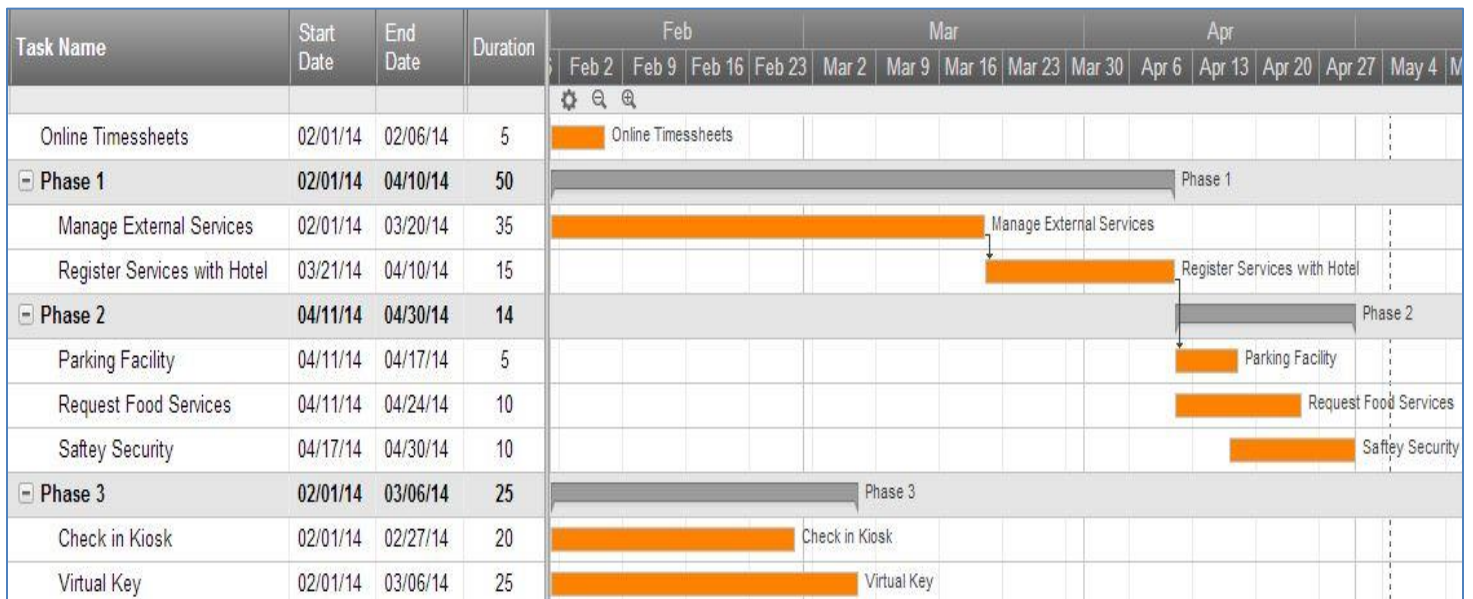
c) The virtual key access:

This new service is aimed to be available in our targeted system. The reservation done online by the customer will generate barcode once the payment for the room is done. This barcode can be used to gain entry in the room by scanning it on the keyless system installed outside the room. A new system will be installed which records and scan the barcode. Based on the details the reservation system is automatically updated.

Migrating to this new system will involve some of the vital requirements like:

1. The keyless system should be efficient performance wise.
2. It needs to be connected to the reservation system in order to update and interact with the reservation system.
3. Improved availability of the system so as only authorized guest will be allowed to enter after validating all the criteria used like the date of check in, the barcode, etc.
4. The new system should be able to generate reports whenever needed and will need to integrate with the reservation system database in order to interact accurately with the reservation system.
5. Also this virtual key will need to have 24x7 IT support to address any issues related to it. And also will update and analyze the report generated by the system.
6. Even though the new system will interact with reservation system it should be independent just in case if the virtual key system fails or the reservation system fails normal procedure of reserving a room by going to the reception and getting a key should be available for the guest. This will also support the hotel management in case of any crises. By this way there will be an option to continue work if some Unexpected situation occurs.
7. To make transition as smooth as it gets, there will be workshops for staff in each phase of implementation of the new system. By this way staff will be able to use the new system efficiently.

Gantt chart



1. The Gantt chart talks about various sub process in our targeted system and the tentative time duration each process will take
 - Manage External Services under phase 1 will be completed in 35 days.
2. There are dependencies in both phases as well as sub process.
 - As we can see from the Gantt chart there is dependency between the 2 process in phase 1 as well as dependency between 2 phase's pahse1 and phase 2.
3. The overall targeted system will be completed in around approximately 3 months of time.

Phase G. Implementation

The main goal is to implement the virtual key service by the end of 2014. This may be too tight of a time frame and if it cannot be accomplished in this period of time, then it will be implemented as it becomes available but another good transition date would be for the start of 2015. We plan to buy new servers and deploy the virtual key application on the new servers which would make it easier for the customers to check in.

The virtual key will be emailed to the customer as soon as the payment is made online, on the day of check in the customer hence does not have to wait at the reception to get the keys to his/her room. We plan to keep the virtual key barcode valid for 24 hours from the day of check in so that the customers can come according to their convenience. In addition to the virtual key we plan to implement the check in kiosk, parking facility for the customers and additional security for the customers.

The basic approach to implementation is development, quality assurance testing, building fixes and re-testing, and moving to production as testing and fixes are completed. Multiple servers are useful for this flow and a transport from one to the next is always a good way to proceed to bring features forward to production.

Governance

The EA and implementation process needs to be at the top level so departmental heads will be encouraged to participate in the process. It is better if we have the department heads on the Governance board to have the ability to influence the direction of the EA project and the eventual implementation of the virtual key. If all the department heads have a good knowledge about the implementation plans of the enterprises (not only the virtual key) then the EA implementation can be done simultaneously in all the departments.

Phase H. Architecture Change Management

Phase	Deliverable	Content	Version
A. Architecture Vision	Architecture Vision	Scope, Stakeholder Map Matrix, Organization Hierarchy, Value Chain Diagram	0.1
B. Business Architecture	Architecture Definition Document	Actor-Role matrix, Functional Decomposition, Business Processes	1.1
C. Information Systems Architecture	Architecture Definition Document	ER Diagram, Data Entity - Business Process Matrix, CRUD Matrix, List of Application Systems, Application to User Location Diagram, Application Context Diagram, Application to Business Process Mapping, Application to Data Entities	1.0
D. Technology Architecture	Architecture Definition Document	Inventory of hardware and software, Technology Architecture, Business Process to Software Mapping	1.0