

# SOFTWARE REQUIREMENTS SPECIFICATION

for

# HOTEL CHAIN MANAGEMENT SYSTEM

Prepared

by

**Erkin DEVECİ**  
**Ece BİTİREN**

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**Project: Lemon Tree Hotels partners with Tata Communications for its strategic growth initiatives**

## 1. PROJECT MANAGEMENT

### Scope Definition & Problem Analysis Phases

#### Problem Statement

Lemon Tree Hotels hosted applications individually. For each hotel used localized applications which has own databases.

Lemon Tree Hotels wants to;

- Up for 7\*24\*365
- Secured
- Reliable
- Scalable
- Consolidate reports and analysis

managing system that Lemon Tree Hotel chain can access it from everywhere.

#### Opportunities

Lemon Tree Hotels searched a company which can met their requirements. They found TATA communications which was able to met their requirements about centralized network systems.

- Tata communications provides data center and storage.
- TATA communications offered them a common multi-tiered platform.
- To constitute them , they offered , to build-out Centralized Robust Network Architecture Solution.
- CRNA supports reliability, uptime , security , quality service.

#### Directives

Tata communications helped Lemon Tree for scale up quickly, grow up and handle requirements in these topics;

- in house IT staff (home office working).  
Home office can reduce the expanses.
- to increase security level using MSOC (Marine Security Operation Centers) solution.

#### Constraints

- This system will build in over 2 years.
- Initially they start 10 hotels at the MSOC facility in Chennai
- Reducing operational expenditures using home office IT staff.

#### Initial Vision

Ajai Kumar, states "We consider Tata Communications to be a strategic partner who can support our growth initiatives by delivering a set of high-end, scalable services that accommodate our plans for expansion." Hotel chain needs outsourcing in IT services such as instant messaging and video conferencing.

#### Outcomes

- MPLS NETWORK For 10 Hotels (can add 11 hotels )
- MPLS SCALABLE VPN for secure, reliable service
- MANAGED HOSTING SERVICES
- MANAGED SECURITY SERVICES
- CRNA (Centralized Robust Network Architecture)
- IT Elements to a storage Area Network (SAN)
- Network back-bon build by Tata Communications
- Hotel Automation Application




## Solutions

Lemon Tree Hotels wants a scalable, optimized, unproblematic, remote access, centralized management systems which is MPLS VPN(Multi Protocol Label Switching with Virtual Private Network) powered by TATA communications and securing by MSOC (Marine Security Operation Centers) to manage 11 hotels over two years.

## Scope

- Multi-tier property application for reservation and billing system available 24x7x365, with minimal disruptions.
- Centralized, remotely hosted server and storage system, including data consolidation for reporting and analysis. Additionally integrated MPLS VPN service and data center provision for strategic expansion plan.
- IT Infrastructure including all IT hostage, storage, security and internet connectivity.

## Expectations Management Matrix

| PRIORITIES →         | Max or Min  | Constrain  | Accept  |
|----------------------|---|--|---|
| ↓MEASURES OF SUCCESS |   |  |   |
| Cost                 |   |  |  |
| Schedule             |   |  |   |
| Scope and/or Quality |  |  |   |

**Explanation of the figure above:** The priorities are listing for the measures of success Scope and/or Quality, Schedule and Cost accordingly as Max or Min, Constrain and Accept. That means, the Scope and Quality are the most important measures of success for this project, because a lot of developments by means of IT infrastructure are strictly required in this project. The Schedule has the priority with middle importance, because if the Scope and/or Quality and the Schedule will compete, Scope and/or Quality will be the one beating, but the time interval is of course necessary. The Cost is not as important as other measures of success because it is a big project by means of handling with all requirement for development, so it is certain that there will be a compromise about the Cost.

## Tasks Identification and Estimation of Task Durations

### Identification of tasks

Hotel Chain Management

### Task Duration(real-optimistic-pessimistic)

|   | R | O | P |
|---|---|---|---|
| 1 Initiating                              | 1 | 1 | 1 |
| 1.1 Select project manager                |   |   |   |
| 1.2 Form project team                     |   |   |   |
| 1.3 Complete initiating                   |   |   |   |
| 2 Scope Definition & Problem Analysis     | 4 | 3 | 5 |
| 2.1 Problem statement                     |   |   |   |
| 2.2 Constraint                            |   |   |   |
| 2.3 Statement of work                     |   |   |   |
| 2.3.1 Define vision and scope             |   |   |   |
| 2.3.2 Draw expectations management matrix |   |   |   |

|           |  |            |            |            |
|-----------|--|------------|------------|------------|
| 2.3.3     | Identify tasks                               |            |            |            |
| 2.3.4     | Estimate task durations                      |            |            |            |
| 2.3.4.1   | Classic technique                            |            |            |            |
| 2.3.4.2   | COCOMO I                                     |            |            |            |
| 2.3.5     | Assign Resources                             |            |            |            |
| 2.3.6     | Draw   |            |            |            |
| 2.3.6.1   | PERT chart                                   |            |            |            |
| 2.3.6.2   | GANTT chart                                  |            |            |            |
| 2.3.6.3   | Critical Path                                |            |            |            |
| 2.4       | Complete scope definition & problem analysis |            |            |            |
| <b>3</b>  | <b>Requirements Analysis</b>                 | <b>8</b>   | <b>4</b>   | <b>9</b>   |
| 3.1       | Business Reuirements Statement               |            |            |            |
| 3.1.1     | Define capability requirements               |            |            |            |
| 3.1.2     | Define data/database requirements            |            |            |            |
| 3.1.3     | Define performance level requirements        |            |            |            |
| 3.1.4     | Define priorities of various requirements    |            |            |            |
| 3.2       | Complete Requirements Analysis               |            |            |            |
| <b>4</b>  | <b>Logical Design</b>                        | <b>6</b>   | <b>4</b>   | <b>9</b>   |
| 4.1       | Logical System Models and Specifications     |            |            |            |
| 4.1.1     | Logical data models                          |            |            |            |
| 4.1.2     | Logical process models                       |            |            |            |
| 4.1.3     | Logical interface models                     |            |            |            |
| 4.2       | Complete Logical Design                      |            |            |            |
| <b>5</b>  | <b>Decision Analysis</b>                     | <b>4</b>   | <b>3</b>   | <b>5</b>   |
| 5.1       | System Proposal                              |            |            |            |
| 5.1.1     | Technical feasibility                        |            |            |            |
| 5.1.2     | Operational feasibility                      |            |            |            |
| 5.1.3     | Economic feasibility                         |            |            |            |
| 5.1.4     | Schedule feasibility                         |            |            |            |
| 5.1.5     | Risk feasibility                             |            |            |            |
| 5.2       | Proposal Approval                            |            |            |            |
| 5.3       | Complete Decision Analysis                   |            |            |            |
| <b>6</b>  | <b>Physical Design &amp; Integration</b>     | <b>5</b>   | <b>4</b>   | <b>10</b>  |
| 6.1       | Physical Design Moldels and Specifications   |            |            |            |
| 6.2       | Design Prototypes                            |            |            |            |
| 6.3       | Redesigned Business Processes                |            |            |            |
| 6.4       | Integrated Physical Design                   |            |            |            |
| 6.5       | Complete physical design & integration       |            |            |            |
| <b>7</b>  | <b>Construction &amp; Testing</b>            | <b>210</b> | <b>150</b> | <b>250</b> |
| 7.1       | Construction                                 |            |            |            |
| 7.1.1     | Software                                     |            |            |            |
| 7.1.1.1   | Purchased                                    |            |            |            |
| 7.1.1.1.1 | MANAGED HOSTING SERVICES                     |            |            |            |
| 7.1.1.1.2 | MANAGED SECURITY SERVICES                    |            |            |            |
| 7.1.1.2   | Custombuilt                                  |            |            |            |
| 7.1.1.2.1 | Hotel Automation Application                 |            |            |            |
| 7.1.2     | Databases                                    |            |            |            |
| 7.1.2.1   | Data Center(hosted by MSOC)                  |            |            |            |
| 7.1.3     | User and System interfaces                   |            |            |            |
| 7.1.4     | Networks                                     |            |            |            |
| 7.1.4.1   | MPLS NETWORK                                 |            |            |            |
| 7.1.4.2   | MPLS SCALABLE VPN                            |            |            |            |
| 7.1.4.3   | CRNA   |            |            |            |
| 7.1.4.4   | SAN  |            |            |            |
| 7.1.4.5   | Network back-bon                             |            |            |            |
| 7.2       | Testing                                      |            |            |            |
| 7.3       | Implementation Ready Functional System       |            |            |            |
| 7.4       | Complete Construction and Testing            |            |            |            |
| <b>8</b>  | <b>Installation &amp; Delivery</b>           | <b>30</b>  | <b>27</b>  | <b>45</b>  |
| 8.1       | Deliver System into Production               |            |            |            |
| 8.2       | Deliver User Training                        |            |            |            |

|     |                                  |            |            |            |
|-----|----------------------------------|------------|------------|------------|
| 8.3 | Deliver Completed Documentation  |            |            |            |
| 8.4 | Convert Existing Data            |            |            |            |
| 8.5 | Working System                   |            |            |            |
| 8.6 | Complete Installation & delivery |            |            |            |
| 9   | System Operation & Maintenance   | <b>730</b> | <b>700</b> | <b>750</b> |
| 9.1 | System Support                   |            |            |            |

[Estimation of Task Durations according to COCOMO I:](http://cost.isc.nasa.gov/COCOMO.html)  
(<http://cost.isc.nasa.gov/COCOMO.html>)

| Inputs   |          |
|--|----------|
| <b>Development</b>                               |          |
| Delivered Source Instructions (thousands) (KDSI) | 30       |
| Development Mode                                 | Embedded |
| Average Cost Rate (\$/PM)                        | 10.000   |
| <b>Maintenance</b>                               |          |
| KDSI added (annual)                              | 2        |
| KDSI modified (annual)                           | 5        |
| Average Cost Rate (\$/PM)                        | 5.000    |

| Results                   |           |   |
|---------------------------|-----------|---|
| Effort                    | 213       | person-months (PM)                      |
| Schedule                  | 14        | Months                                  |
| Development Cost          | 2.130.000 |   |
| Productivity              | 141       | instructions per person-month           |
| Average Staffing          | 15.2      | full-time-equivalent software personnel |
| Annual Maintenance Effort | 50        | person-months                           |
| Annual Maintenance Cost   | 250.000   |   |

| Phase Distribution       | Effort (PM) | Schedule (mo.) | Staff (avg.) | Cost      |
|--------------------------|-------------|----------------|--------------|-----------|
| Plans and requirements * | 17          | 4.5            | 3.8          | 170.000   |
| Product Design           | 38.3        | 4.8            | 8            | 383.000   |
| Programming              | 115         | 5.6            | 20.5         | 1.150.000 |
| Detailed Design          | 55.4        |                |              | 554.000   |
| Code and unit test       | 59.6        |                |              | 596.000   |
| Integration and test     | 59.6        | 3.6            | 16.6         | 596.000   |

\* The plans and requirements phase is calculated in addition to the nominal COCOMO estimate for effort and schedule.

| Activity Distribution (Staff) by Phase |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |

|                             | Phase                  |                |             |                      |                    |
|-----------------------------|------------------------|----------------|-------------|----------------------|--------------------|
| Activity                    | Plans and Requirements | Product Design | Programming | Integration and Test | Maintenance        |
| Requirements Analysis       | 1.7                    | 0.8            | 0.6         | 0.3                  | 0.3                |
| Product Design              | 0.5                    | 3.4            | 1.2         | 0.7                  | 0.5                |
| Programming                 | 0.2                    | 1              | 11.3        | 6.6                  | 1.6                |
| Test Planning               | 0.2                    | 0.5            | 1.2         | 0.7                  | *.2                |
| Verification and Validation | 0.3                    | 0.6            | 2.1         | 4.1                  | 0.6                |
| Project Office              | 0.5                    | 0.9            | 1.4         | 1.3                  | 0.3                |
| CM/QA                       | 0.2                    | 0.2            | 1.4         | 1.5                  | 0.3                |
| Manuals                     | 0.2                    | 0.6            | 1.2         | 1.3                  | 0.5                |
| <b>TOTAL</b>                | 3.8000000000000007     | 8              | 20.4        | 16.5                 | 4.3000000000000001 |

Estimation of Task Durations according to Classic Technique:

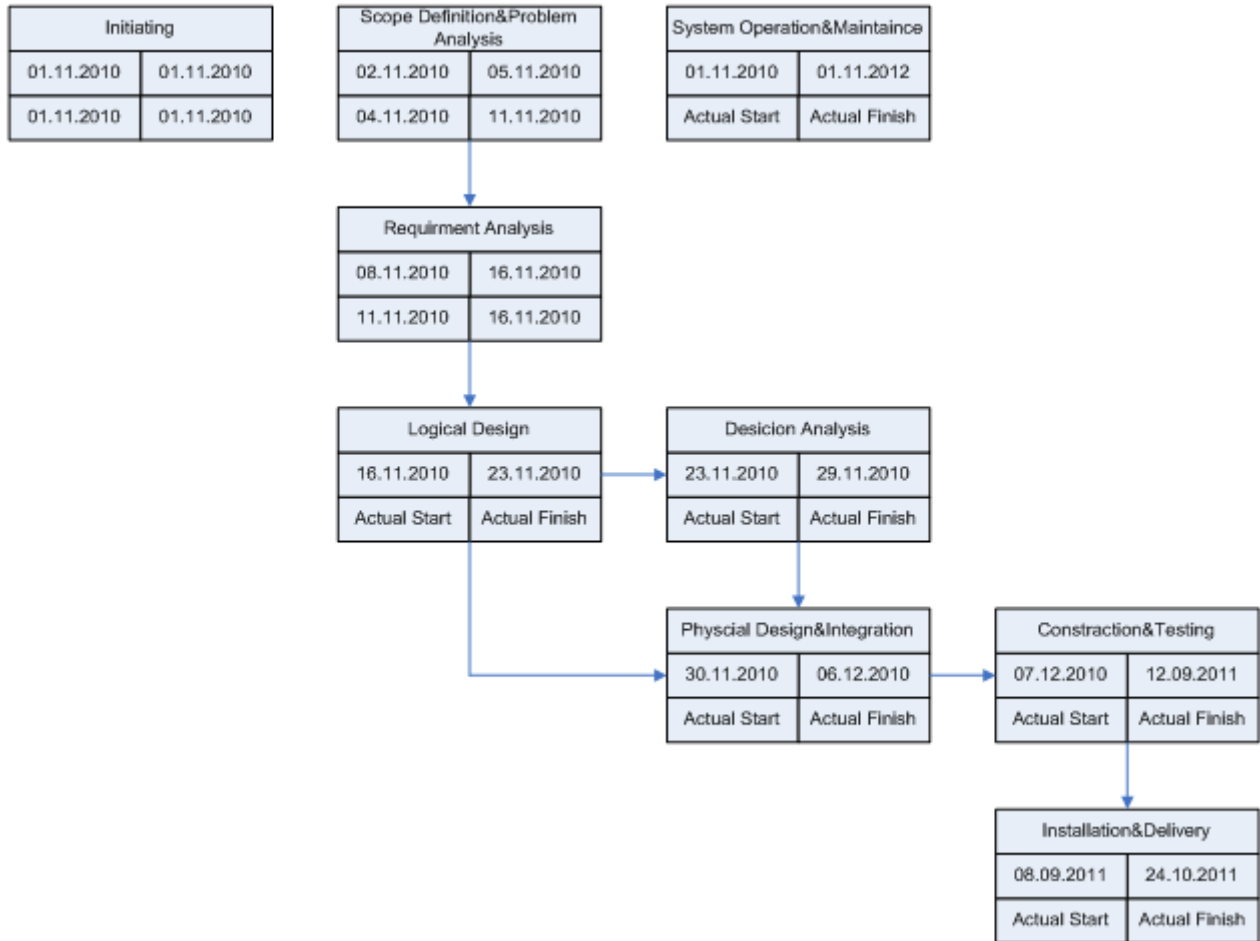
| Activities | Task Duration Estimation – Classical (et= (o+4r+p)/6 ...et: expected time) | Expected Time |
|------------|--|---------------|
| 1          | $(1+4*1+1)/6 = 1$  | 1             |
| 2          | $(3+4*4+5)/6 = 4$  | 4             |
| 3          | $(4+4*8+9)/6 = 7,5$  | 7,5           |
| 4          | $(4+4*6+9)/6 = 6,167$  | 6,2           |
| 5          | $(3+4*4+5)/6 = 4$  | 4             |
| 6          | $(4+4*5+10)/6 = 5,667$   | 5,7           |
| 7          | $(150+4*210+250)/6 = 206,667$  | 206,7         |
| 8          | $(27+4*30+45)/6 = 32$  | 32            |
| 9          | $(700+4*730+750)/6 = 728,333$  | 728           |

Intertask Dependencies:

| Activity | Preceding Activity |
|----------|--------------------|
| 1        | -                  |
| 2        | -                  |
| 3        | 2                  |
| 4        | 3                  |
| 5        | 4                  |
| 6        | 4,5                |
| 7        | 6                  |
| 8        | 7                  |
| 9        | -                  |

GANTT Chart : See APPENDIX A.

**Pert Chart**



**Resources:**

|  |   |
|--|---|
| <b>Initiating</b>                              | Owners , Manager , Users , Analysts                               |
| <b>Scope Definition &amp; Problem Analysis</b> | Owners , Managers, Analysts                                       |
| <b>Requirements Analysis</b>                   | Owners , Managers , Analysts , Users                              |
| <b>Logical Design</b>                          | Managers , Analysts , Users                                       |
| <b>Decision Analysis</b>                       | Owners , Managers , Analysts , Users , Designers                  |
| <b>Physical Design and Integration</b>         | Designers, Analysts, Users (screen designs, work flow)            |
| <b>Construction &amp; Testing</b>              | Builders , Analysts , Users , Managers , Designers (design specs) |
| <b>Installation &amp; Delivery</b>             | Builders , Analysts , Users , Managers                            |
| <b>System Operation &amp; Maintenance</b>      | Builders , Users  |

## 2. SYSTEM REQUIREMENTS AND ANALYSIS

### System Requirements

**Inputs:** System improvement objectives.

- Secure and fast networking
- Controlled budget for IT
- Expandable and sustainable smart Business Systems

#### What capabilities should the new system provide for its users?

**Instant and asynchronous data storage:** Allows all clients to access same data at anytime, anywhere.

**Connect 7\*24\*365:** Our online solutions such as reservation and billing systems, reduces your labor and work hours. Percent of task completed per unit time, time spent in errors and time to complete a task operations will get smarter by the computers.

**Whenever Use What You Need:** Flexible and sustainable information management system that meet the possible future needs of customer. Expandable business solutions will support your requirements as you grow.

**Global Reporting via Network:** Our reliable data management system allows your users to reach the instant data changes and their unique reports which is specially organized for each of client, even for your freelancers.

**Long Term Driven, Functional and Predictable Cost Management:** It offers you to manage your budget for all of your IT expenses.

**Secure Networking:** MPLS VPN architecture and firewall solutions deal with the background such as; security, speed, encryption and privacy of business.

#### What data must be captured and stored?

**Reservation and Billing System:** A well-planned network system has to deal with thousands of data movement, data processing and data storage operations in every minute. Developing Smart Business Solutions oriented software policy will collect the data instead of you. Frequency of help and documentation use will be increased.

What performance level is expected?

**Well-organized network architecture:** MPLS VPN's best advantage is making process performance better in terms of data movement, data mining and security. This provides organizations to save time for work and controls number of times user loses control of the system, average number of users need to work around a problem.

#### What are the priorities of the various requirements?

**Hardware:** In order to achieve high technology smart network solutions; required devices should perform continuously and safely which causes 7x24 controlled work cycle. Also these devices may be the biggest part of required budget.

**Training:** All stakeholders should be well educated about the system and their role at hierarchy. By this way number of good and bad features recalled by users and number of runs of successes and of failures can be controlled.

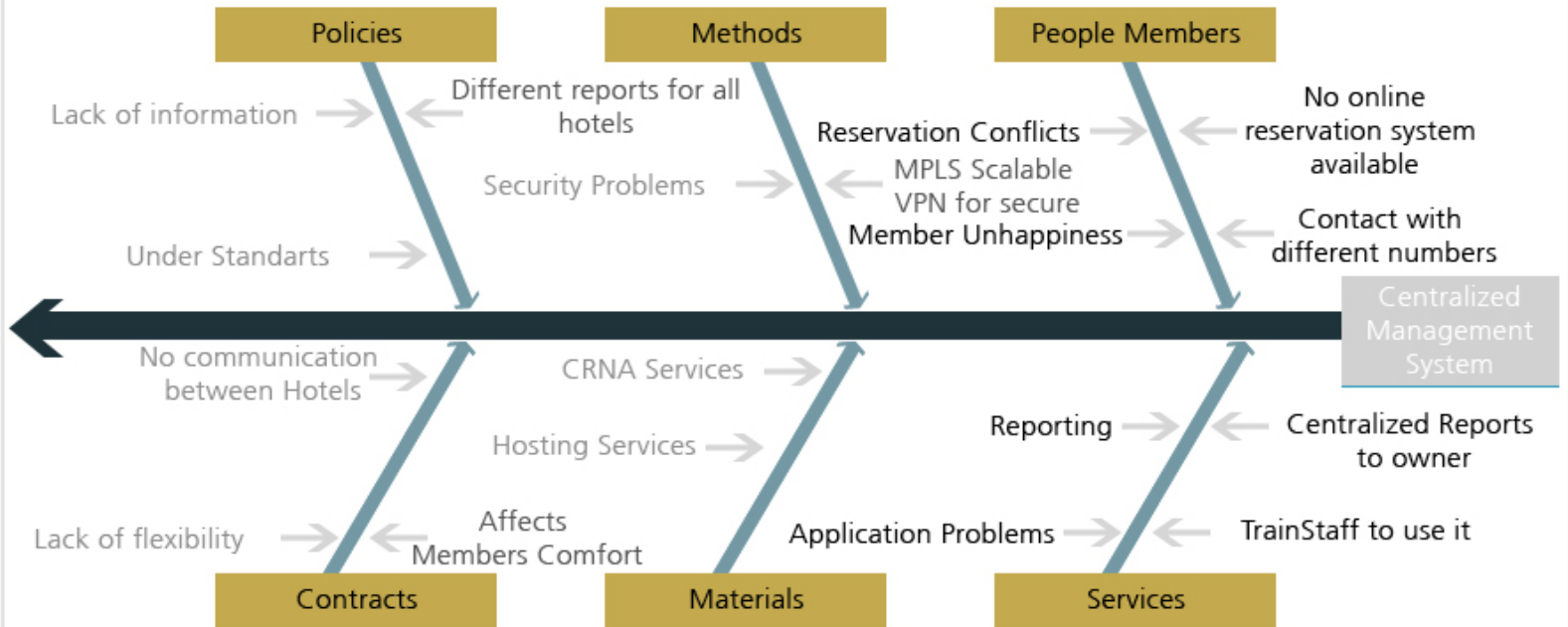
**Outputs:** business requirements statement.

- Devices and technicians
  - MPLS VPN Solution Workstations
  - Cisco IP Manager
  - NetFlow Collector Device
  - PE and CE Router
  - Technicians and Engineers
- Being aware of work flow chart properties
  - Scheduling work
  - Data mining
  - Providing continuous help incase possible user errors
- Being open minded to user suggestions
  - Responsible for changing workflow
  - Giving suitable solutions for each process
  - User based developments



System Analysis  
ISHIKAWA Diagram

# ISHIKAWA DIAGRAM



Fact Finding Techniques

Questionnaire: See APPENDIX B.

Interview Guide: See APPENDIX C.

### 3. SYSTEM LOGICAL DESIGN

#### Logical Design

ER and UML Diagrams : See Appendix D.

Actors Glossary and Use Case Glossary : See Appendix E.

Use Case Narratives

Reservation System

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                |   |   |
|--------------------------------|---|---|
| Use-Case Name:                 | Makes Reservation   | Use-Case Type:<br>-Business Requirement<br>-<br>- |
| Use-Case ID:                   | RS-AUC.01   |   |
| Priority:                      | Middle  |   |
| Source:                        | Requirement   |   |
| Primary Business Actor:        | Customer  |   |
| Other Participating Actors:    | Front Office Manager                                      |   |
| Other Interested Stakeholders: | Sales and Marketing , System<br>Manager,In house IT Staff |   |
| Description:                   | Makes a reservation for customer.                         |   |

Reservation System

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                |                                |  |
|--------------------------------|--------------------------------|--|
| Use-Case Name:                 | Pay for services               | Use-Case Type:<br>- Business Requirement<br>-<br>- |
| Use-Case ID:                   | RS-AUC.02                      |  |
| Priority:                      | Middle                         |  |
| Source:                        | Requirement                    |  |
| Primary Business Actor:        | Customer                       |  |
| Other Participating Actors:    | Sales and Marketing Department |  |
| Other Interested Stakeholders: | System Manager                 |  |
| Description:                   | Customer pays for services.    |  |

**Reservation System**

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                |  |  |
|--------------------------------|--|--|
| Use-Case Name:                 | Get information                                    | Use-Case Type:<br>- Business Requirement<br>-<br>- |
| Use-Case ID:                   | RS-AUC.03  |  |
| Priority:                      | Middle   |  |
| Source:                        | Requirement  |  |
| Primary Business Actor:        | Customer   |  |
| Other Participating Actors:    | Front Office Manager                               |  |
| Other Interested Stakeholders: | Font Desk Manager                                  |  |
| Description:                   | Customer gets information from Front Desk Manager. |  |

**Maintenance System**

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                |  |  |
|--------------------------------|--|--|
| Use-Case Name:                 | Continous Working  | Use-Case Type:<br>- Business Requirement<br>-<br>- |
| Use-Case ID:                   | MS-AUC.01  |  |
| Priority:                      | High   |  |
| Source:                        | Requirement  |  |
| Primary Business Actor:        | Maintenance Department   |  |
| Other Participating Actors:    |  |  |
| Other Interested Stakeholders: | System Manager, Front Desk Manager   |  |
| Description:                   | A sustained and uninterrupted work activity,for example non-stop website services. |  |

**Maintenance System**

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | <b>Productivity Work</b>                  | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>MS-AUC.02</b>                          |   |
| <b>Priority:</b>                      | <b>High</b>                               |   |
| <b>Source:</b>                        | <b>Requirement</b>                        |   |
| <b>Primary Business Actor:</b>        | <b>Maintenance Department</b>             |   |
| <b>Other Participating Actors:</b>    | -   |   |
| <b>Other Interested Stakeholders:</b> | <b>System Manager, Front Desk Manager</b> |   |
| <b>Description:</b>                   | <b>Works on increase productivity.</b>    |   |

**Marketing System**

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                       |  |   |
|---------------------------------------|--|---|
| <b>Use-Case Name:</b>                 | <b>Banquet Sales</b>   | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>MS-BUC.01</b>   |   |
| <b>Priority:</b>                      | <b>High</b>  |   |
| <b>Source:</b>                        | <b>Requirement</b>   |   |
| <b>Primary Business Actor:</b>        | <b>Sales and Marketing Department</b>  |   |
| <b>Other Participating Actors:</b>    | <b>System Manager</b>  |   |
| <b>Other Interested Stakeholders:</b> | <b>Marketing and Sales</b>   |   |
| <b>Description:</b>                   | <b>Banquet Sales is the backbone of banquetting. The efficiency of banquet operations and guest satisfaction</b> |   |

|  |  |  |
|--|--|--|
|  | depends on banquet sales .The staff has to be perfect & the coordination of the office with the kitchen should be very professional. |  |
|--|--|--|

**Marketing System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | Identify Feature Improvement  | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | MS-BUC.02   |   |
| <b>Priority:</b>                      | High  |   |
| <b>Source:</b>                        | Requirement   |   |
| <b>Primary Business Actor:</b>        | Sales and Marketing Department  |   |
| <b>Other Participating Actors:</b>    | System Manager  |   |
| <b>Other Interested Stakeholders:</b> | Personal Training Manager   |   |
| <b>Description:</b>                   | This improvement measured to improve working performance and improving income of hotel chain. |   |

**Marketing System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                    |                                  |   |
|------------------------------------|----------------------------------|---|
| <b>Use-Case Name:</b>              | Make Reporting                   | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                | MS-BUC.02                        |   |
| <b>Priority:</b>                   | High                             |   |
| <b>Source:</b>                     | Requirement                      |   |
| <b>Primary Business Actor:</b>     | Sales and Maintenance Department |   |
| <b>Other Participating Actors:</b> | System Manager                   |   |

|                                       |   |  |
|---------------------------------------|---|--|
| <b>Other Interested Stakeholders:</b> |   |  |
| <b>Description:</b>                   | Customer makes booking from internet or phone call. By using phone call front desk manager helps if there is available rooms. |  |

**Check System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                       |  |   |
|---------------------------------------|--|---|
| <b>Use-Case Name:</b>                 | Check whole system   | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | CS-AUC.01  |   |
| <b>Priority:</b>                      | High   |   |
| <b>Source:</b>                        | Requirement  |   |
| <b>Primary Business Actor:</b>        | System Manager   |   |
| <b>Other Participating Actors:</b>    | -  |   |
| <b>Other Interested Stakeholders:</b> | Owner  |   |
| <b>Description:</b>                   | System manager checks the system if there is any problem and organize reports to system owner. |   |

**Check System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                       |                 |   |
|-----------------------|-----------------|---|
| <b>Use-Case Name:</b> | Activity Report | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>   | CS-AUC.02       |   |
| <b>Priority:</b>      | High            |   |
| <b>Source:</b>        | Requirement     |   |

|                                       |  |  |
|---------------------------------------|--|--|
| <b>Primary Business Actor:</b>        | <b>System Manager</b>  |  |
| <b>Other Participating Actors:</b>    | <b>Owner</b>   |  |
| <b>Other Interested Stakeholders:</b> |  |  |
| <b>Description:</b>                   | <b>Sales &amp; Marketing creates an activity report and activity monitoring to system manager.</b> |  |

**Personnel Training System**

**Author(s): System Analyst**

**Date: 13.11.2010**

**Version: 1**

|                                       |  |   |
|---------------------------------------|--|---|
| <b>Use-Case Name:</b>                 | <b>Training Curriculum</b>   | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>PTS-AUC.01</b>  |   |
| <b>Priority:</b>                      | <b>High</b>  |   |
| <b>Source:</b>                        | <b>Requirement</b>   |   |
| <b>Primary Business Actor:</b>        | <b>Personnel Training Manager</b>  |   |
| <b>Other Participating Actors:</b>    | <b>Trainer : - Front Desk Manager ()<br/>- Reservation Manager ()</b>  |   |
| <b>Other Interested Stakeholders:</b> | <b>Customer</b>  |   |
| <b>Description:</b>                   | <b>An established set of course topics for instruction in an approved training program for a particular discipline designed to provide specialized knowledge and skills to front desk manager.</b> |   |

**Personnel Training System**

**Author(s): System Analyst**

**Date: 13.11.2010**

**Version: 1**

|                       |                                     |   |
|-----------------------|-------------------------------------|---|
| <b>Use-Case Name:</b> | <b>Monitor Employee Performance</b> | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
|-----------------------|-------------------------------------|---|

|                                       |   |  |
|---------------------------------------|---|--|
| <b>Use-Case ID:</b>                   | PTS-AUC.01  |  |
| <b>Priority:</b>                      | High  |  |
| <b>Source:</b>                        | Requirement   |  |
| <b>Primary Business Actor:</b>        | Personnel Training Manager  |  |
| <b>Other Participating Actors:</b>    | System Manager ()   |  |
| <b>Other Interested Stakeholders:</b> | Owner   |  |
| <b>Description:</b>                   | Monitoring involves conducting periodic checks to determine an employee's level of performance in relation to established performance standards. Monitoring provides the data by which performance is ultimately evaluated. |  |

**Account System**

**Author(s):** System Analyst

**Date:** 13.11.2010  
**Version:** 1

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | Handle daily operations reports                           | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | AS-AUC.01   |   |
| <b>Priority:</b>                      | High  |   |
| <b>Source:</b>                        | Requirement   |   |
| <b>Primary Business Actor:</b>        | Account Department  |   |
| <b>Other Participating Actors:</b>    | Sales and Marketing Department                            |   |
| <b>Other Interested Stakeholders:</b> | Owner, System Manager                                     |   |
| <b>Description:</b>                   | Account department works on daily operations and reports. |   |

**Account System**

**Author(s):** System Analyst

**Date:** 13.11.2010  
**Version:** 1

|                       |                             |  |
|-----------------------|-----------------------------|--|
| <b>Use-Case Name:</b> | Repair financial statements | <b>Use-Case Type:</b><br>- Business Requirement<br>- |
|-----------------------|-----------------------------|--|



|                                       |  |   |
|---------------------------------------|--|---|
|                                       |  | - |
| <b>Use-Case ID:</b>                   | <b>AS-AUC.02</b>   |   |
| <b>Priority:</b>                      | <b>High</b>  |   |
| <b>Source:</b>                        | <b>Requirement</b>   |   |
| <b>Primary Business Actor:</b>        | <b>Account Department</b>  |   |
| <b>Other Participating Actors:</b>    | <b>System Manager</b>  |   |
| <b>Other Interested Stakeholders:</b> | <b>Customer</b>  |   |
| <b>Description:</b>                   | <b>Repairs the formal record of the financial activities of a business, person, or other entity.</b> |   |

**Account System**

**Author(s): System Analyst**

**Date: 13.11.2010**  
**Version: 1**

|                                       |  |  |
|---------------------------------------|--|--|
| <b>Use-Case Name:</b>                 | <b>Keep track of business transactions</b>   | <b>Use-Case Type:</b><br><b>- Business Requirement</b><br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>AS-AUC.03</b>   |  |
| <b>Priority:</b>                      | <b>High</b>  |  |
| <b>Source:</b>                        | <b>Requirement</b>   |  |
| <b>Primary Business Actor:</b>        | <b>Account Department</b>  |  |
| <b>Other Participating Actors:</b>    |  |  |
| <b>Other Interested Stakeholders:</b> | <b>System Manager</b>  |  |
| <b>Description:</b>                   | <b>Keeps track of an economic event or activity that initiates the accounting process or recording it in the firm's accounting system.</b> |  |

**Get Information System**

**Author(s): System Analyst**

**Date: 13.11.2010**

Version: 1

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | <b>Check system</b>                                     | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>GI-AUC.01</b>  |   |
| <b>Priority:</b>                      | <b>High</b>   |   |
| <b>Source:</b>                        | <b>Requirement</b>                                      |   |
| <b>Primary Business Actor:</b>        | <b>Reservation Manager</b>                              |   |
| <b>Other Participating Actors:</b>    | <b>Front Deskt Manager</b>                              |   |
| <b>Other Interested Stakeholders:</b> | <b>System Manager</b>                                   |   |
| <b>Description:</b>                   | <b>Checks the system and gives a report to Manager.</b> |   |

**Get Information System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                       |  |   |
|---------------------------------------|--|---|
| <b>Use-Case Name:</b>                 | <b>Check reservations</b>  | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>GI-AUC.02</b>   |   |
| <b>Priority:</b>                      | <b>High</b>  |   |
| <b>Source:</b>                        | <b>Requirement</b>   |   |
| <b>Primary Business Actor:</b>        | <b>Reservation Manager</b>   |   |
| <b>Other Participating Actors:</b>    | <b>Customer</b>  |   |
| <b>Other Interested Stakeholders:</b> | <b>Front Office Department</b>   |   |
| <b>Description:</b>                   | <b>Checks the reservation system and give information about rooms.</b> |   |

**Security System**

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | <b>Manage security of the whole system</b>                          | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>UC-SS.01</b>   |   |
| <b>Priority:</b>                      | <b>High</b>   |   |
| <b>Source:</b>                        | <b>Requirement</b>  |   |
| <b>Primary Business Actor:</b>        | <b>Marine Security Center</b>                                       |   |
| <b>Other Participating Actors:</b>    | <b>IT Service Department</b>  |   |
| <b>Other Interested Stakeholders:</b> | <b>In house IT Staff</b>  |   |
| <b>Description:</b>                   | <b>MSOC protects the system against danger, loss and criminals.</b> |   |

**IT Service System**

Author(s): System Analyst

Date: 13.11.2010

Version: 1

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | <b>Handle Technical Issue</b>               | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>ITSS-AUC.01</b>                          |   |
| <b>Priority:</b>                      | <b>High</b>                                 |   |
| <b>Source:</b>                        | <b>Requirement</b>                          |   |
| <b>Primary Business Actor:</b>        | <b>IT Service Department</b>                |   |
| <b>Other Participating Actors:</b>    |   |   |
| <b>Other Interested Stakeholders:</b> | <b>In-house IT Staff</b>                    |   |
| <b>Description:</b>                   | <b>Handle Technical issues when occurs.</b> |   |

**IT Service System**

**Author(s): System Analyst**

**Date: 13.11.2010**

**Version: 1**

|                                       |   |  |
|---------------------------------------|---|--|
| <b>Use-Case Name:</b>                 | <b>Software consulting</b>  | <b>Use-Case Type:</b><br>- <b>Business Requirement</b><br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>ITSS-AUC.02</b>  |  |
| <b>Priority:</b>                      | <b>High</b>   |  |
| <b>Source:</b>                        | <b>Requirement</b>  |  |
| <b>Primary Business Actor:</b>        | <b>IT Service Department</b>  |  |
| <b>Other Participating Actors:</b>    | <b>Front Office Department</b>  |  |
| <b>Other Interested Stakeholders:</b> | <b>System Manager</b>   |  |
| <b>Description:</b>                   | <b>A software consultant is a professional that assesses a business or organization's processes and provides software solutions and other recommendations based on that assessment.</b> |  |

**In House System**

**Author(s): System Analyst**

**Date: 13.11.2010**

**Version: 1**

|                                       |  |  |
|---------------------------------------|--|--|
| <b>Use-Case Name:</b>                 | <b>Working In-House</b>  | <b>Use-Case Type:</b><br>- <b>Business Requirement</b><br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>IHS-AUC.01</b>  |  |
| <b>Priority:</b>                      | <b>Middle</b>  |  |
| <b>Source:</b>                        | <b>Requirement</b>   |  |
| <b>Primary Business Actor:</b>        | <b>In House Staff</b>  |  |
| <b>Other Participating Actors:</b>    | <b>Personnel (Training ) Center</b>  |  |
| <b>Other Interested Stakeholders:</b> |  |  |
| <b>Description:</b>                   | <b>Working In-house is when a function or task is performed by the company</b> |  |

|  |   |  |
|--|---|--|
|  | itself, instead of using outside contractors. |  |
|--|---|--|

**Front Office System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| <b>Use-Case Name:</b>                 | Register customer                     | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | FOS-AUC.01                            |   |
| <b>Priority:</b>                      | Middle                                |   |
| <b>Source:</b>                        | Requirement                           |   |
| <b>Primary Business Actor:</b>        | Front Office Manager                  |   |
| <b>Other Participating Actors:</b>    | Customer                              |   |
| <b>Other Interested Stakeholders:</b> |                                       |   |
| <b>Description:</b>                   | Add customer profile to hotel system. |   |

**Front Office System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                    |                                   |   |
|------------------------------------|-----------------------------------|---|
| <b>Use-Case Name:</b>              | Handle customer through telephone | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                | FOS-AUC.02                        |   |
| <b>Priority:</b>                   | Middle                            |   |
| <b>Source:</b>                     | Requirement                       |   |
| <b>Primary Business Actor:</b>     | Front Office Manager              |   |
| <b>Other Participating Actors:</b> | Customer                          |   |

|                                       |  |  |
|---------------------------------------|--|--|
| <b>Other Interested Stakeholders:</b> |  |  |
| <b>Description:</b>                   | <b>Front Office manager answer phones and gives information.</b> |  |

**Front Office System**

**Author(s): System Analyst**

**Date: 13.11.2010**

**Version: 1**

|                                       |   |   |
|---------------------------------------|---|---|
| <b>Use-Case Name:</b>                 | <b>Inform customers</b>   | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | <b>FOS.AUC.03</b>   |   |
| <b>Priority:</b>                      | <b>High</b>   |   |
| <b>Source:</b>                        |   |   |
| <b>Primary Business Actor:</b>        | <b>Front Office Manager</b>   |   |
| <b>Other Participating Actors:</b>    | <b>Customer</b>   |   |
| <b>Other Interested Stakeholders:</b> |   |   |
| <b>Description:</b>                   | <b>Front Desk manager gives information about hotel cost, services and rooms.</b> |   |

**Database System**

**Author(s): System Analyst**

**Date: 13.11.2010**

**Version: 1**

|                       |                             |   |
|-----------------------|-----------------------------|---|
| <b>Use-Case Name:</b> | <b>Optimize performance</b> | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>   | <b>DBS-AUC.01</b>           |   |
| <b>Priority:</b>      | <b>High</b>                 |   |
| <b>Source:</b>        | <b>Requirement</b>          |   |

|                                       |   |  |
|---------------------------------------|---|--|
| <b>Primary Business Actor:</b>        | Data Warehouse  |  |
| <b>Other Participating Actors:</b>    |   |  |
| <b>Other Interested Stakeholders:</b> | In-house IT Staff   |  |
| <b>Description:</b>                   | MSOC protects the system against danger, loss and criminals. Optimizing performance is the process of modifying a software system to make some aspect of it work more efficiently or use fewer resources. |  |

**Database System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                                       |  |   |
|---------------------------------------|--|---|
| <b>Use-Case Name:</b>                 | Process and store data   | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>                   | DBS-AUC.02   |   |
| <b>Priority:</b>                      | High   |   |
| <b>Source:</b>                        | Requirement  |   |
| <b>Primary Business Actor:</b>        | Data Warehouse   |   |
| <b>Other Participating Actors:</b>    | Users Inheritance - Front Office Manager , Sales and Marketing |   |
| <b>Other Interested Stakeholders:</b> | System Manager   |   |
| <b>Description:</b>                   | Hotel system stores data by using database management system.  |   |

**Database System**

**Author(s):** System Analyst

**Date:** 13.11.2010

**Version:** 1

|                       |             |   |
|-----------------------|-------------|---|
| <b>Use-Case Name:</b> | Reduce cost | <b>Use-Case Type:</b><br>- Business Requirement<br>-<br>- |
| <b>Use-Case ID:</b>   | DBS-AUC.03  |   |
| <b>Priority:</b>      | High        |   |

|                                |  |  |
|--------------------------------|--|--|
| Source:                        | Requirement  |  |
| Primary Business Actor:        | User Inheritance – Data warehouse ,In house IT Staff                           |  |
| Other Participating Actors:    |  |  |
| Other Interested Stakeholders: | Sales and Marketing Department   |  |
| Description:                   | Reducing total spent for goods or services including money and time and labor. |  |

Context Diagram and Use Cases : See APPENDIX F.

Activity and System Sequence Diagrams: See APPENDIX G.

Data Flow Diagrams (DFDs) : See APPENDIX H.

#### 4. DECISION ANALYSIS

Candidate and Feasibility Matrix : See APPENDIX I.

##### System Proposal

**System’s analysts’ recommendations are as follows:** After calculations of all candidates, it is defined that the best solution is developing a java application using oracle database server through Tata communications centralized management system solution.It fulfills and gives fully support to hotels’ requirements. It takes 9 months to develop the system with the budget of approximately 450.000\$ which will pay back in 2.5 years.