CAREER EPISODE 2

Information Systems Improvement for University Hotel Accommodation and Services at University of the Philippines, Diliman, Quezon City

INTRODUCTION

(CE 2.1)

This career episode detailed the activities that occurred for 5 months from June 2011 until October 2011. I and my team conducted an improvement project on the reservations department of University Hotel at University of the Philippines. The study was commenced to review and develop the processes of a local facility under the industry of hospitality.

BACKGROUND

(CE 2.2)

This project was completed as a requirement for our Information Systems course at the University of the Philippines. The group consisting of four members conducted a process improvement study to assess and improve the reservation process for University Hotel at University of the Philippines. The study aims to achieve the following objectives: (1) to document the current system of University Hotel by means of information system tools; (2) to create a computerized information system using structured analysis; (3) to evaluate and formulate design improvements that will benefit the end-users.

(CE 2.3)

The methodologies used by the group for this study were as follows: (1) Current System Documentation, (2) Structured Analysis Process, (3) Suggestion of Improvements, and (4) Information System Design. In this project, the group widely used different types of tables and flowcharts such as: (1) Data Flow Diagram (DFD), a graphic approach in describing the various data flow networks in the system, its active components, and the data interfaces between them; (2) Data Dictionary, a set of definitions of the data items declared in the data flow diagrams; (3) Transform Descriptions, a set of mini-specifications describing the processes or policies in the system at the functional primitive level.

(CE 2.4)

I and other members of the group were all part of the same team that conducted improvement studies for various course requirements. In this regard, the group decided to have me as the team leader for this study. As the team leader for the study project, I was responsible in: (1) distributing tasks evenly to all team members; (2) coordinating with University Hotel staff for interview and site visits; (3) documenting the hotel's systems and processes; (4) leading the team in system analysis; (5) guiding the team in suggesting for improvements; (6) helping in designing an information system; and (7) presenting the study to University Hotel.

PERSONAL ENGINEERING ACTIVITY

(CE 2.5)

The study covered reservation and front office services of University Hotel. Initially, the group encountered the problem on scheduling for interviews and site visits since the guest service agents in the front office are currently on their working shift. I managed to write a letter to the supervisor asking for his assistance on the project. By the next visit, he entertained us and committed that he will provide support for our improvement project. Having resolved this, I then made a Gantt chart for us to follow so we can check our progress on the activities that must be completed. To clearly understand the information and systems associated on this improvement project, the group decided to explain it concisely by creating a format to follow: (1) illustrating thru data flow diagrams; (2) explaining the data store dictionary; and (3) expounding the data transform descriptions. The data flow diagrams are visual representations of the flow of data showing which are inputs and output. The data store dictionary is a document describing a database or collection of databases. Meanwhile the transform descriptions explain a chronological series of steps for the flow of data.

(CE 2.6)

In the consequent site visits and interviews, all essential information was gathered for the study. The team was able to collect data about current logical system, work environment, and process documents. System definition was done by defining the elements of the system; elements of the environment and functions of the system. After a brief discussion with the team, we were able to create a basic process flowchart (using Microsoft Visio) that illustrates the process overview for standard room or function room reservation. The nature of creating data flow diagrams is to present in each level the degree of input (data elements) and output (data flows) for a specific process. It is desired to go on to the next level until each process cannot be broken down anymore. I initiated creating a context data flow diagram that shows the elements of the environment that are not part of the system but will greatly effect change in the system elements should these components of the environment change (see Figure 1). The elements of the environment are the ones in boxes while arrows in between them and the system (University Hotel) are data elements and data flows. The naming convention for data elements (input) and data flows (output) are to be decided by the group conducting the study. I created the diagram below which is also known as Zeroth level diagram.

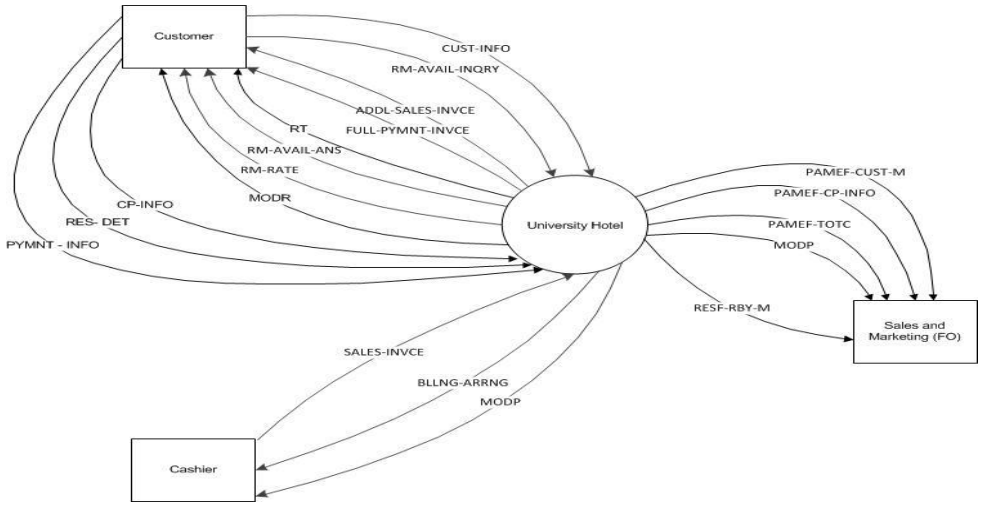

Figure 1. Zeroth Level DFD.

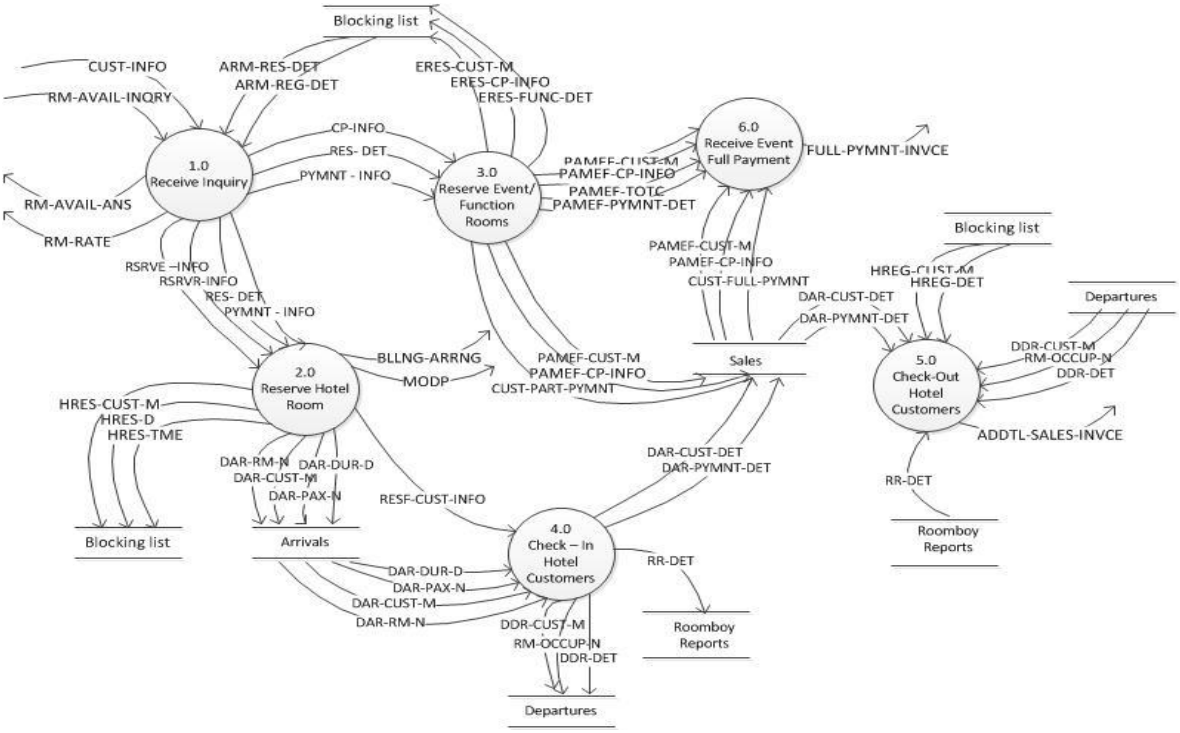

Figure 2. First Level DFD.

(CE 2.7)

Looking in to the University Hotel system, I created the First Level Data Flow Diagram (see Figure 2). It is noted that the current logical system has six connected processes: (1) Receive Customer Inquiry, (2) Reserve Hotel Room, (3) Reserve Event or Function Room, (4) Check-In Customers, (5) Check-Out Customers, (6) Receive Payment. I went on constructing the Second Level DFD by focusing on each process alone. The system also has five data stores: (1) Blocking list, (2) Sales, (3) Room boy Reports, (4) Arrivals, (5) Departures. After creation of DFDs, the group then detailed the data stores by creating a dictionary. Here, the group explained it briefly and provided all data elements that went in and all data flows that came out of each data store (see Figure 3).

	DATA STORE
NAME	ARRIVALS
DESCRIPTION	A data store containing all daily arrival reports.

ARRIVALS

- DAR-D
- DAR-RM-N
- DAR-OCC
- DAR-CUST-M
- DAR-STAT
- DAR-RATE-A
- DAR-DPT-A
- DAR-TME
- DAR-DUR
- DAR-DCLRK
- DAR-FOSCS-C

Figure 3. Sample Data Store Dictionary.

(CE 2. 8)

For each process that a Second Level DFD is known, a transform description must be provided. Since I created the DFDs, I guided the team in creating these descriptions. It is just a simple syntax explaining the activities to be done for each process. An example of transform description under the major process of Reserve Event/Function Rooms is given below.

3.1 Receive Filled-Up Preliminary Agreement for Major Event Reservation Form Receive CP-INFO, RES-DET, PYMENT –INFO from CUSTOMER

If CP-INFO and PYMENT-INFO is complete
{
Proceed 3.2
}
Else
{
Ask CP-INFO and PYMENT-INFO
Until
CP-INFO and PYMENT-INFO is complete
}
End If

(CE 2. 9)

The information for the current logical system that the team had gathered is sufficient enough to put forward a new logical system. The entire system of University Hotel consisting of reservation, registration and checking-in and checking-out of customers will be the Charter of Change for the project through: (1) Computerization, and (2) Normalization. Computerization of certain processes will enable better access and flow of information within the system. To achieve these, the team suggested: (1) have a computerized reservation forms and (2) creation of a database. Data normalization is a process in which data attributes for a specific data model are organized to increase the interrelation of entity types with goals of reducing and even eliminating data redundancy. I normalized the data stores from First Normal Form, Second Normal Form, until the Third Normal Form.

(CE 2.10)

Having the new logical system in mind, new set of data flow diagrams should be created. The Zeroth Level DFD is now simplified wherein only two elements of the environment were needed to interact with the University Hotel System and they were: the customer and cashier. I then created the First Level DFD (see Figure 4) where it can be clearly seen that processes are now more centralized on the proposed University Hotel computerized system. It still contains the essential process under study: (1) Receive Customer Inquiry, (2) Reserve Hotel Room, (3) Reserve Event or Function Room, (4) Check-In Customers, (5) Check-Out Customers, (6) Receive Payment and an additional process of (7) Run University Hotel Computerized System.

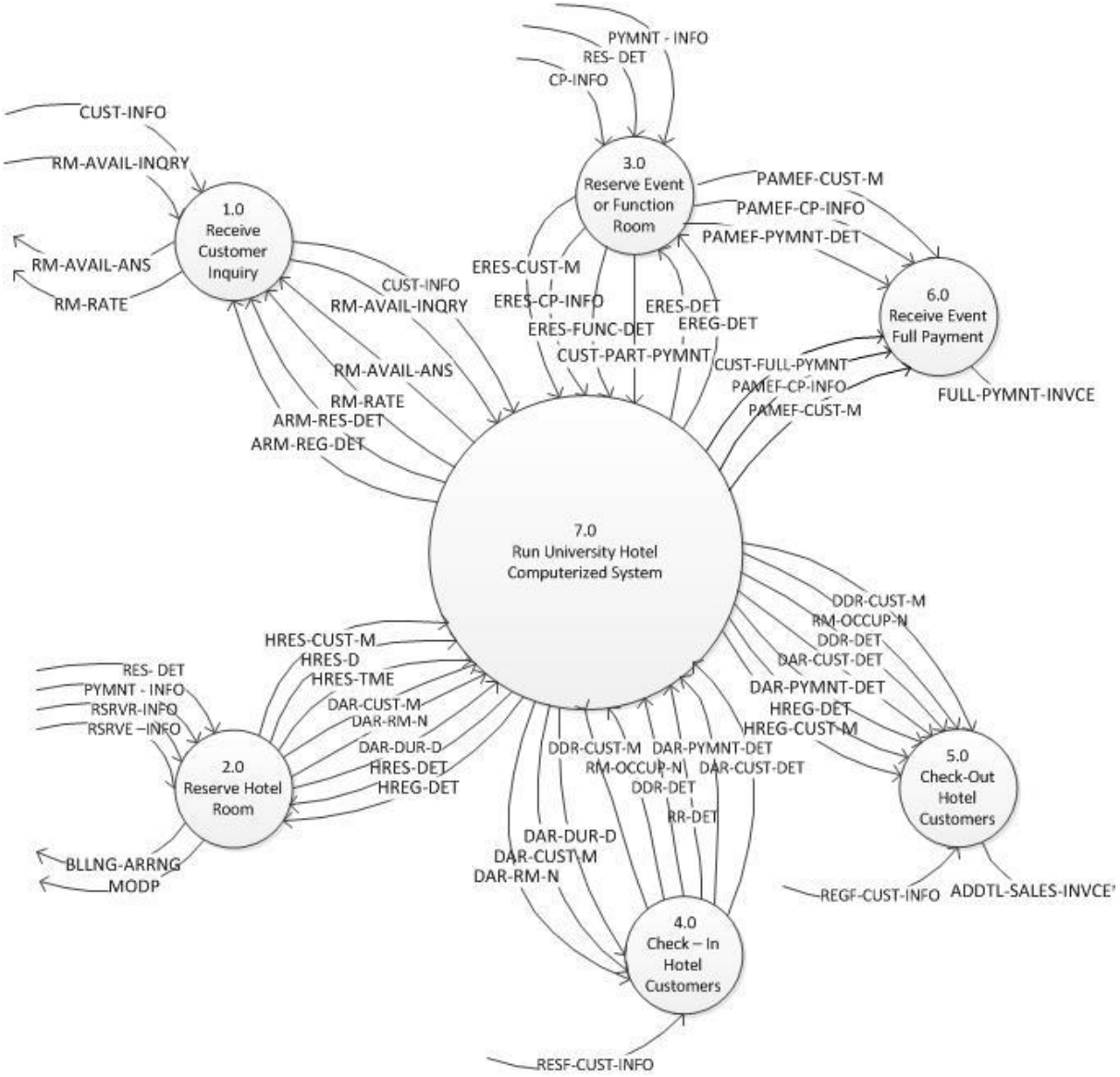

Figure 4. New logical system First Level DFD

(CE 2.11)

I guided the team members in constructing Second Level DFD by focusing on the six critical processes concerned. But I am the one who created the second level DFD for the seventh process of Run University Hotel Computerized System. One goal for the creation of the new logical system is to combine and simplify into an integrated computerized system the following data stores: (1) Blocking list, (2) Sales, (3) Room boy Reports, (4) Arrivals, (5) Departures. It can be seen on the next DFD (see Figure 5) that all data stores previously used on different processes were now integrated into this new computerized system. The processes here can still be broken down. I still managed to create a Third Level DFD for: (1) Update Records, (2) Prepare Reports, (3) Answer Queries. However the process of updating records can still be classified into: (1) Adding Record, (2) Update Record, (3) Delete Record. Thus, I went further on creating Fourth Level DFD for those classifications.

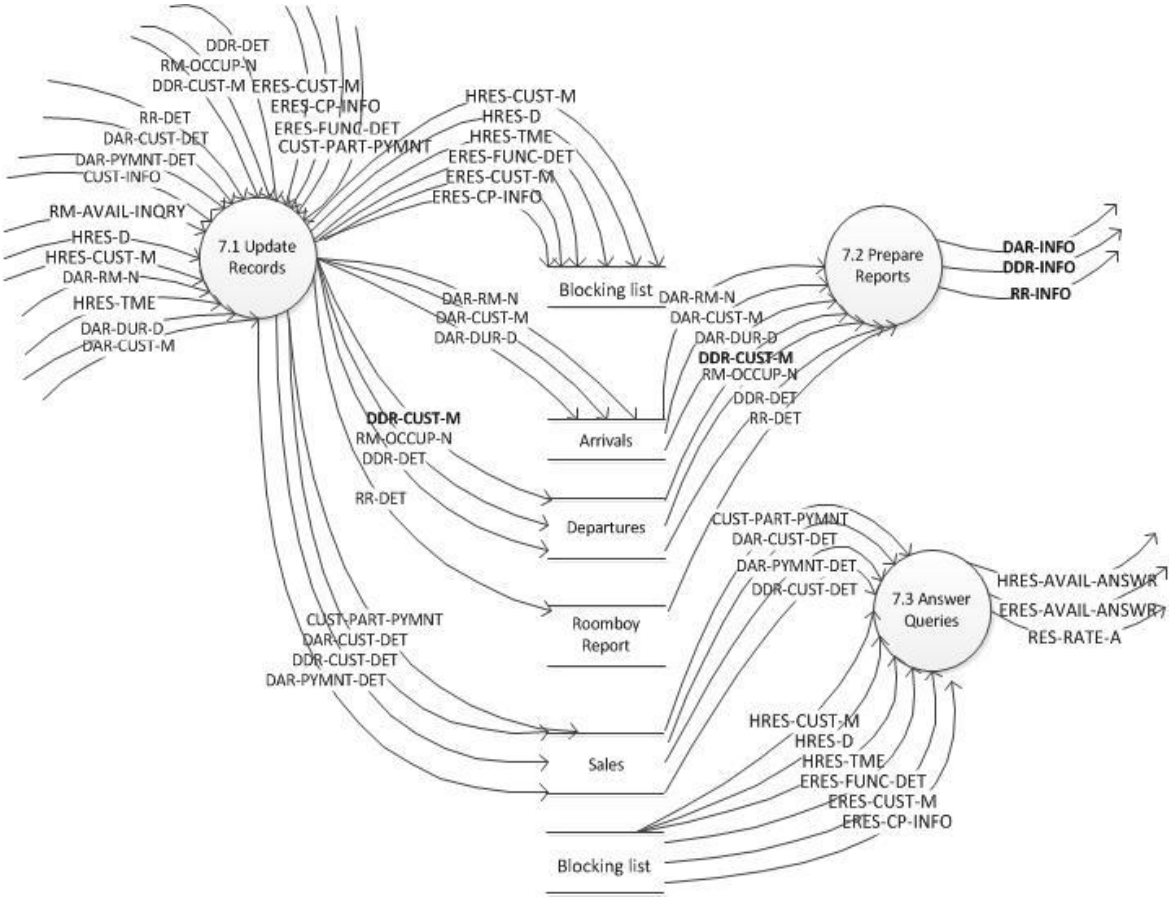

Figure 5. Second Level DFD for Run University Hotel Computerized System.

(CE 2.12)

The group then explained the new data used in the created DFDs for the new logical system. As there are a lot of things to explain, I divided across the group the creation of data dictionary. The group detailed data elements, data flows, data stores and even created a Keyword Glossary. I then presented Normalized data for the data stores until Third Normal Form. The team also presented the summary of changes from the current system into the new logical system by explaining the areas to be computerized and suggested further recommendations. For areas to be computerized, these include automation of reservation forms and creation of a reservation database. It is noted that both of them would pave the way for ease of access to necessary information and it will also automatically create lists of transactions for later use. For further recommendations, I suggested the use of Cost and Benefits Analysis if the University Hotel decides to implement this new logical computerized system.

SUMMARY:

(CE 2.13)

The information and systems improvement study had a number of revisions along the way and these can be accounted to the degree of accuracy of data elements and data flows that should be reflected in the corresponding data flow diagrams. The effect of the proposed logical systems can be measured after the implementation of the computerized system. After accomplishing the study, I and the team presented it to the University Hotel Front Office Supervisor. He was impressed and satisfied proving that the group had done an amazing work which exceeded his expectations, and even promised the group that he will discuss this study with the management team of the University Hotel.

(CE 2.14)

My significant contributions in creating process flowcharts and data flow diagrams, critical thinking in data elements and data flows naming convention, added by my tactical innovations and team management skills all contributed in for the attainment of an information and systems improvement study for University of the Philippines University Hotel.