

# Chapter 6

## Conclusion

### 6.1 Study Summary

The objective of the study is to create a strategic-oriented business simulation game. In the process of studying, Object-Oriented Analysis and Design(OOAD) approach is used to tackle the prototype business, CRC International Company Ltd., problem domain into small classes. Unified Modelling Language (UML) was brought in as a visualisation tool in order to depict all abstract classes. It also shown the relationships among each objects in the system. After then, the game is implemented using a new age object-oriented programming language, JAVA from Sun Microsystem Inc.,. The advantage of the language is that the programme promotes a “Write Once Run Anywhere” concept. That means the programme can run on any computer platform and operating system that support Java Runtime Environment(JRE).

At the first state, a prototype is to be studied to define business characteristics, business environment, marketing strategy, and management strategy from company reports. Business models likes five-force model, marketing mix and value chains are used.

In a second state, there is a need to analyse a prototype business by using some kind of system analysis approaches. The study believes that OOAD would simplify the analysis process and shorten the time of the process. The OOAD steps used in the study are:

1. Define a problem domain: A problem domain in this study is a “Home Decoration Retail Store” that competes in a domestic retailing market.
2. Tackle a whole domain into classes or types.
3. Define relationships among each classes.
4. Identified the properties and activities of each class.
5. Do a class refinement for more correctness.

From the above steps, the out come are business logic classes that serve each part of a system. However, there is a need to add more abstract class to handle data object persistence. There fore, a database logic classes are added to a system. Their responsibility is to interact with a database back-end.

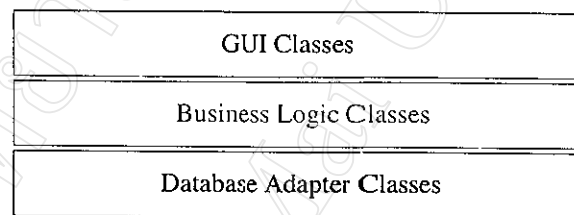


Figure 6.1: Class Layers

Since each class in each layer was clearly identified. The study starts to implement all logic into a working programme. The services and properties are strictly base on the design. This implies that if a problem domain was well identified, a programme process would be easy to do.

According to an OOAD paradigm, an object-oriented programming language is to be used consequently. In this case, Java is chosen because of its ability to run across different computer platforms and operating system. So, the programme can be distributed through any systems available.

## 6.2 Discussions

The study can accommodate the basic ideas off business-level strategy. It lets a player implement the chosen strategy from the generic strategies: cost leadership,

product differentiation, and niche market. A player has choices to do various kind of R&D, training and development, or promotions. Although, there are many activities available for a player, they should do only some of those activities that match their strategies.

The game does support multi-player, however up to 5 players simultaneously. Players must play at the same time while a facilitator monitors each player activities and gives them suggestions at the end of each game session.

### 6.3 Problems Found

**Data Gathering Limitations:** The study mainly gets information from business reports and numbers of consultants of the prototype business. Although, many significant information is gathered, there are still many variable that left unidentified ie., customer demands, market share, promotion effectiveness, and training effectiveness. Therefore, there is a need to estimate these figures to complete a game process. However, these figures are based on an attempt to balance a business profit, costs, and efficiency.

**Game Design:** There would be a hard time understanding OOAD concept for people who used to classic analysis approaches. An OOAD reflects a real world object directly without a need to match conceptual model with a logical model. However, an analyst need to know how to design classes into different layers. Not only design classes from the real world, they also need to create some abstract classes which use more imaginations. This can create some problems if those abstract classes are not properly defined.

**Game Implementation:** CRC is a trading business which acquires *core* and *jam* products to build a set of concept before sell it to customers. Each concept is comprise of uncertain number of different items. This creates a trivial problem in an implementation process since the item can not be fully identified. Therefore, there is a need take this business character off the game which decrease the reality of the game. This game also a cut down version of a real business since it cannot accommodate all situations that really happen. There

might be lack of realistic in some parts of the game. In order to have well designed and functionality game, there should be a team of strategic management experts and programmers to analyse and design this game.

**System Architecture:** The study uses n-tier client-server computer architecture which comprises of J2EE compliance application server and SQL database back-end. The technology is quite new and rarely used by individual or small organisation where the study is done. Therefore, there is a need to study the technology thoroughly before an implementation.

## 6.4 Suggestions and Future Study

Even the study is trying to simulate a real business, there is still far to complete. The game still lack of realistic and there are many thing to be added. Those features are suggested as follows:

**Multi-level Strategy Support:** The study focuses on only business-level strategy. To make the game more complete and is for everyone, the game could be developed to encourage a player to learn multi-level strategy: corporate level, business level, and functional level.

**Customer Demand:** In this study, total customer demand is estimated to accommodate 5 players. To make it more realistic, there should be a researched data that shows more accurate customer demand. The study also divided customer into 9 groups and randomly create a demand for each group according an order quantity percentage. There can be other way to segment customers to make the game more challenging.

**Employee Training:** The study offers only two types of training and their effective rates are estimated. To make the game more challenge, more training courses should be added. The results of trailings should be from the real world business. However, this is hard to measure if there is no pre-defined indicators.

**Promotion:** The study offers four types of promotion which are normally implemented by the prototype business. There can be other kinds of promotions

available for a player, or if it possible, a player should be able to create their own promotion schemes.

**Financial Source:** The study forces a player to stick with cash and no other financial sources are available. In fact, there are many sources of fund a business can get from ie., a bank loan, securities, and stocks. The game should provide such feature as well.

**Company Expansion:** The study limits a player to have only one store. This also limits a chance of a player who tries to diverse their business. Therefore, a player should be able to create more than one branches.

**Product:** The nature of this of business requires an effort to acquire different products to fit into a designed concept. There should be a hundred of items from various suppliers to be selected from. This also completes a supply chain model.

**Custom Case:** The study does not implement a custom case. This means a facilitator should be able to launch some kind of situation or external environment factors to affect a player decision during a game session. This would make the game more realistic.

**Multiple Game Sessions:** Currently, the game can run only one session. There is a possibility that a game can run multiple sessions. This concept is to make one game server runs multiple sets of players, facilitators and markets.

**Game Testing Phase:** The game is yet tested by strategic students because of there is no strategic management course available at the time of study. It should be an opportunity that the game can be brought to test in a real strategic management course or other related course such as seminar in management in the near future.

The study can accommodate basic elements of a business and industry. However, this is very far from complete, in just a first step of creating a robust strategic-oriented business simulation game. In order to make the game more realistic, more prototype business research should be done and many features should be needed.

This requires a lot of efforts and a team of strategic management experts and programmers.

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