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**“Coursework 1: Disruptive Technologies”**

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# Introduction

An entrepreneur is someone who runs a small business and analyses all the risks and rewards of a given business idea. An entrepreneur is also seen as a business leader and also a person who comes up with new ideas, methods and products. For this coursework, I will be looking at a company named IBK Technology. IBK is an information Technology company that deals with things such as: web hosting, IT Maintenance, Software development and IT Consultancy.

# Context

As an entrepreneur in IBK technology, I am requested to analyze the organization and then identify gaps within the organization and then come up with possible solutions and a business model which may help the organization in filling up the gaps.

# Problem

IBK Technology is an organization that handles any technological activities and one of their activities is handling a movie database of which clients can easily search for movies, check details and also book tickets for a movie of their choice. But the current problem with the movie system is that clients have been complaining of slow response time.

Since the company makes use of relational database which is known to be a database designed to acknowledge relations between data stored and information. Looking at IBK Technology, due to the fact that clients are not able to have a quick response from the database, clients tend to avoid the company and prefer using other organizations with better systems. Because of this problem, the organization has lost profits and number of big and reliable customers.

IBK Technology is planning on adding many different types of movies in the database including all the latest movies; but they are unable to do so because the system is slow already and if they attempt to add more movies to the system, they risk to make the system much slower which is clearly bad for the organization.

# Literature Review

## Introduction

The main objective of a literature review is to create a framework for the research study and it provides an understanding of the problem in hand and helps compare it with the potential solution.

Looking at IBK technology, the potential solution is to implement a NoSQL System.

## Relational database vs NoSQL System

### Relational Database

This is abbreviated as RDB. It is based on relational model and it has been in use for some 30 years ago. It was created to help businesses with data processing and it has been then recommended to most businesses when it comes to storing data. (Askenas, 2009) Especially data that has to deal with financial data and personal data.

Looking at the fast growing of technology in our days, there is a very big difference in terms of Hardware and Software. Therefore, many organizations have changed from relational database to non-relational database which is also known as NoSQL System.

### NoSQL System

This is a term implemented by Carlo Stroui in 1998 and it is also known as a file database. NoSQL was developed for relational database that does not make use of SQL. But this system was only implemented in 2009 and has since then it has become a number one competitor of the relational database. (GUIDE, 2015)

NoSQL system makes use of four different fundamentals which can be abbreviated as ACID of which stands for Atomicity, Consistency, Isolation and Durability.

#### Atomicity

This is one of the NoSQL fundamentals that handles operations within the database by making sure that either all happens or nothing happens.

#### Consistency

This is one of the NoSQL systems fundamentals that makes sure that all data that is imported should be valid according to rules defined.

#### Isolation

This is one of the NoSQL Systems fundamentals that checks every transactions so as to ensure that every transaction is executed simultaneously one after the other.

#### Durability

This is one the NoSQL Systems fundamentals that makes sure that once the transaction is executed, data will automatically be stored regardless of power loss, crashes or errors. But with the relational database, after executing a query, they need to be stored permanently.

## Application of the technology

#### Value Creation and Proposition

This is the process of designing and offering a service or product that will give values to the customer, employees and give revenues to the organization. Looking at IBK Technology, the offered application will help the organization by improving their customers’ queries execution time and also sending a quick response to them. The system will provide value to the customer in a way that the customers will not have to wait for too long while waiting for the system to provide feedback for their executed queries. By doing so, it will improve their customers’ satisfaction and their will end up recommending the organization to other people; which will the organization will always keep their customers happy and also increase the organization benefits. The satisfaction of clients will be known when those customers that were complaining start returning to make use of the system and also spreading to news to other people around them. From this, the customers will also be confident that their complaints have been heard and also dealt with. This will also lead to customers freely tell the organization about their weaknesses and also some changes which may be made so as to improve the organization. This will lead to a better service and reputation from the organization. (Katz, 1996)

#### Value Delivery and Value capture

This the process of delivering products and services that gives good values to the customers and employees of the organization. Looking at IBK Technology, This process will help fix the customers dissatisfaction as soon as they are raised so as to ensure customer satisfaction. The NoSQL System will be used to manage the customers’ movie queries and give them quick feedback on the queried movies. This is to make sure that the customer is happy with the organization services. A happy customer will bring the repeat sale that count (Penney, 2016)

The organization will increase their benefit through their customers’ recommendations and mostly word of mouth advertisement. In our days, word of mouth is the fastest and cheapest way to advertise. So the better the service and product, the quicker the marketing process resulting to an increase in profits.

# Business model attribution

IBK technology is known to be a franchise company. Therefore, my business model would make use of the franchise model to run the organization. The NoSQL System will run as a customer care and also a marketing system to handle and improve the organization daily operations. Customers will have a quick response for their queries. (Beal, 2008) The response will be done in a matter of seconds therefore, the customer will be able to see the value of the system and also the positives side that comes with the new system. The NoSQL System will also have the mechanism to handle errors therefore if the customer gives a wrong input, they will be notified for their errors and they can fix it immediately without waiting for long.

# Business model innovation

My business model is innovative because it involves a system that have not been used in cinemas. This is mostly caused by the fact that most cinemas are not yet aware of it and also the system implementation requires highly skilled people to do so. My proposed NoSQL System can be used by most cinemas to handle queries and give quick response to customers. (EL-GHAREEB, 2009) By implementing a system that gives quick response to clients, IBK Technology will be able to increase their movie list by adding latest movies to the list and also improving their service which will lead to customer satisfactory. This model is innovative because it provides ways in which the organization can increase the organization benefits and revenues.

# Conclusion

My business model will enable the customers to have a quick response to their queries and this will result to an improved revenues and customer satisfaction. If IBK Technology implements the NoSQL system, then the organization will improve and grow resulting to an increase in their profits and also have a good reputation all around. Looking at most organizations in our days, their focus is most on getting the work done rather than keeping the customer happy. While in our days, Customer satisfaction is the most important aspect in any business. If the customer is happy, then the organization is definitely on the good side.

# Bibliography

Bill, B., 1989. *Software Risk Management.* CA: IEEE Computer Society Press.

Greeno, J. C. A. &. R. L., 1996. *Cognition and Learning.* New York: Simon & Schuster Macmillan..

Katz, M., 1996. Sources of and Responses to international conflit. *Collaps Empires,* pp. 25-37.

Royce, W., 2011. *Managing the development Of Large Software System.* s.l.:IEEE WESCON.

Schoeberlein, J., 1998. An Overview of Conflict Prevention and Peacebuilding Activities. *Bones of Contention: Conflicts over Resources,* pp. 88-90.

Slim, R., 1995. In Search for Better Technology. *The Ferghana Valley,* pp. 141-142.