Information Management and Business Review
Vol. 6, No. 5, pp. 249-254, Oct 2014 (ISSN 2220-3796)

A Good Quality Filing System and its Documentation: The Right Information Determined the Right Knowledge for Decision-Making

[*]Kang Eng Thye[1], Kang Chye Mei[2]
[1]Universiti Utara Malaysia, Malaysia
[2]Universiti Tunku Abdul Rahman, Malaysia
[*]kang1178@uum.edu.my

Abstract: An excellent designed information files and its documentation is vitally an important element to assist the right information reaching the right top management for right decision making. Nevertheless, most functional managements do not realized a good quality files documentation design is actually theirs' responsibility. They are the experts in designing their respective business functional procedures and modeling. It is inappropriate to rely on IT profession alone when comes to designing of business functional procedures. Mini case studies were adopted to let students have a hands-on trial with the new files' normalization technique with only four rules as proposed to overcome the conventional entity-relationship diagram approach. Target samples were mainly non-IT students. The result shows this new technique offers few benefits that can speed up learning process, easy to understand, and ease of files' normalization design for non-IT profession. Without an effective data filing system and its documentation applied by each respective functional manager, certainly a quality and right knowledge cannot be generated to assist company in the right, timely, and economic decision-making.

Keywords: *Database, Entity Relationship Diagram, Filing System, Documentation, Normalization*

1. Introduction

Traditionally, files' normalization process is a mandatory subject to be learnt by Information Technology (IT) profession in higher learning institution especially dealing with the database design subject. This subject to some extent do not expose to the non-IT student in their business and management degree majoring. There exist in general a misunderstanding that data or information design is belongs to the IT profession, not the non-IT profession. This non-IT profession or students do not realize that any business data or information modeling or procedures are actually derived from their own business disciplinary. It is out of the IT-profession to determine the right data or information that need to be captured in their manual filing system or any effort prior to the computerized system's intention.

Purpose of this Article: The purpose of this article is hope to highlight some awareness for the non-IT professions or students that whether a good quality manual filing documentation is the job of each respective business functional top management prior to any computerized effort or not. A good competitive and survival organization can only be achieved through an excellent data business procedure and model designed for any decision making purpose. Secondly, a simplified files normalization technique is proposed for non-IT students especially in order to enable them design effective and efficient information filing system and documentation in an easier manner.

2. Material and Method

A new technique of normalization was created in overcoming the conventional technique of entity-relationship that is relatively more difficult to understand and apply especially by the non-IT students. The proposed technique was tested over 3 years (6 semesters) that consists of non-IT students (STID 1013 Computer in Application) and also partly IT-students for the subjects like Decision Support System and Knowledge Management. A hands-on experiment with mini case studies was tested with each class's students. The students' solution was analyzed immediately and discussed during the class. Students' responds and their answers during the class were accessed to determine their acceptance towards this new technique.

3. Literature Review

Normalization technique involves the entity relationship 1-1, 1-M, M-M is the common approach applied in any information technology database development. However, its concept and process in stratifying the information into entity-relationship process often a big challenge faces by non-IT students. The further process of determining M-M entity relationship is often difficult applied by non-IT students. Such difficulty is experience during the lecturing of the subject STID 1013 Computer in Application (2014) for non-IT students. There exists limitation especially in the Database Chapter to be mastered by non-IT students in a short period of time. Without fully understanding the files' normalization process in the first place, it would serve no value to assist students further mastering the Microsoft Access software. However, as mentioned earlier, the conventional technique of entity-relationship reveals some weaknesses. For instance, the M-M entity is the most difficult section that needs the further break down into 1-M as intermediate relationship entity. Unfortunately, the M-M entity-relationship is not further explained in the Database chapter. It hindrances students obtain the full understanding of the proper database's tables normalization process.

4. Results

A new proposed technique of files normalization was suggested to overcome the conventional 1-1, 1-M and M-M entity relationship concept. In short, four rules were suggested in forming a simple manual filing system or computerized database's tables design. The four mentioned rules areas below:

Rule 1: Identify relevant file grouping
Rule 2: Identify one time processing file and repeating processing file
Rule 3: Allocate ID / Code to each file
Rule 4: Complete the related data into respective file

Case Study 1: ABC Offshore Fishing Ltd
An imagination case study was suggested in applying the new normalization technique. It is an ABC Offshore Fishing Ltd that has the intention to computerize company's overall operations transactions. The basic data list was provided as below:
Member name
Member Telephone
Fishing utilities
Type of ship
Payment

Rule 1: Identify relevant file grouping
From the data list, four files is being identify, namely *member file*, *fishing utilities file*, *type of ship file* and *payment file*

Rule 2: Identify one time processing file and repeating processing file
From the four files as identified, one time processing file involve *member file*, fishing *utilities file* and *type of ship file*. Whereas, repeating processing file involved *payment file*.

Rule 3: Allocate ID / Code to each file
Assign an ID or code to each respective file. For instance,
Member File: Member ID
Fishing Utilities File: Fishing Utilities ID
Type of Ship File: Type of Ship ID
Payment File: Payment ID

Whereas, for payment file, besides its payment ID, we need to complete with the foreign/secondary code, such as Member ID, Fishing Utilities ID and Type of Ship.

Rule 4: Complete the related data into respective file
Member File: Member ID, Member Name, Member Telephone
Fishing Utilities File: Fishing Utilities ID, Fishing Utilities
Type of Ship File: Type of Ship ID, Type of Ship Desc
Payment File:PaymentID,MemberID, Fishing Utilities ID, Type of Ship ID, Payment Date

Case Study 2: RHH Jeep Automobile Ltd
Let's study another imagination case study, RHH Jeep Automobile Ltd. The basic data list was provided as below:
Customer Name
Customer Telephone
Supplier Name
Supplier Telephone
Car Description
Car Purchase Price
Supplier Payment
Car Selling Price
Customer Payment

Rule 1: Identify relevant file grouping
From the data list, five files are identified, namely *customer file*, *supplier file, car file*, *supplier payment file and customer payment file.*

Rule 2: Identify one time processing file and repeating processing file
From the five files as identified, one time processing file involves *customer file, supplier file* and *car file.* Whereas, repeating processing file involved *supplier payment file and customer payment file*.

Rule 3: Allocate ID / Code to each file
Assign an ID or code to each respective file. For instance,
Customer File: Customer ID
Supplier File: Supplier ID
Car File: Car ID
Supplier Payment File: Supplier Payment ID
Customer Payment File: Customer Payment ID,

In the case of one time processing file, only Car File is best allocated a foreign/secondary code, supplier ID. Such design allows the ease of tracing the Car ID belongs to which supplier as a source. At the same time, for the repeating processing file, namely Supplier Payment File and Customer Payment File, we need to assign related foreign/secondary code to each respective file, such as Customer ID and Supplier ID as shown below.

Car File: Car ID, Supplier ID
Supplier Payment File: Supplier Payment ID, Supplier ID
Customer Payment File: Customer Payment ID, Customer ID

Rule 4: Complete the related data into respective file
Customer File: Customer ID, Customer Telephone
Supplier File: Supplier ID, Supplier Telephone
Car File: Car ID, Supplier ID, Car Description, Car Purchase Price, Car Selling Price
Supplier Payment File: Supplier Payment ID, Supplier ID, Supplier Payment
Customer Payment File: Customer Payment ID, Customer ID, Car ID, Customer Payment

In short, both of the case studies imply few intentions. Firstly, it shows that prior to any effort of computerized, the principles in designing any business manual transactions filing system is exactly the same with the database's tables design. There exists no any differences between both of the manual transaction or IT's automation business transaction world. Secondly, it also proof that IT's database normalization subject

should also learnt by non-IT students, and it should not belong to the proprietary of IT profession only. The correctness of any business manual filing design is the fundamental ingredient prior to any effort in IT automation purpose. Thirdly, a simplified technique of files design based on the four rules as proposed is hope to assist the non-IT students avoiding any IT jargons technique that hindrance them from mastering any business manual filing design or IT's database design.

Discussion: The simplified files normalization method is tested by students for non-IT and IT students over the three years period. The result showed very positive respond that students in general learn faster, easy to understand and more importantly could design a desirable and appropriate files 'filing system as required. In general, this simple new technique overcomes the limitation of conventional 1-1, 1-M and M-M files' normalization process.

- "Rule 2: Identify one time processing file and repeating processing file "to replace the M-M entity relationship that is relatively difficult to understand

The PowerPoint slides in Database Chapter prepared by author only managed to show until the 1-M relationship. It still fails to show the M-M relationship in this case study. In other words, the students would not be able to design a complete and perfect files design based on their lecture note as shown. As we know, without fully understand the normalization process, the process in learning the Microsoft Access would serve no value if the students do not expose to the right files design at the first place. Besides, Rule number 2: identify one time processing file and repeating processing file seems to be able to assist students understand faster which data list is belong to repeating or only one time processing information. Such approach is better to be understood compared to M-M relationship.

- The real meaning of "code" concept to the manual transaction world or computerized transaction world

Lets study the manual transaction world examples for instance, customer's pay-slip receipt number, home postal address, vehicle's plat number, telephone's number, cover letter reference's, payment's account traceability, citizens' identity card and student's matric number. In the IT world domain, IP address for servers and computers in the networking environment, telephone's number, code assigned in every files' database design for instance also applying the similar code concept. The ancient china's and today modern criminal cases investigation also applied the human's finger track to identify responsible person. Animal world, each leopard for instance also has its unique skin spot pattern without any similarity to each other. In others word, the principle of using code concept is similar to all natural world, business manual transactions and IT operations world. Without the code concept, any transaction would result a big chaos, transaction's information miss flow and not traceable. The extend of IT role in computerized the manual transactions is merely a supplement assistance to "speed" up the business information aggregate/categories analysis based on real time or batch processing requirement.

- The importance of files' normalization learned by non-IT students

An effective and good design of each disciplinary model for instance economic model, finance model, forecasting model, sales model fall into the responsibility and obligation of each respective disciplinary experts, not the job function of IT profession. The detail of data or information captured into the filing system in producing any business modeling and procedures is the business profession's obligation. Given an example, an effective of marketing strategic model and detail of data or information to capture for analyzing is the marketing manager's responsibility. IT profession only assist in capturing all related data into IT's hardware and software domain. In orders words, if the marketing manager proposed the unrealistic data in forming any marketing modeling and procedures, any subsequence effort done by IT professions only produce a Garbage In and Garbage out (GIGO)'s result. Due to the above reasons, a good knowledge design of files, filing system and its documentation administration is an important subject that should be learnt across any disciplinary students, and not just only the IT's students. However, this subject almost absent in any university's business degree curriculum. Without the proper knowledge of filing system design, ineffective data capturing and tedious transaction, missing information, costly staffing for ineffective documentation administration for instance would be the consequence and implication that finally effected the company survival.

- An effective filing documentation determined a company's sustainability

Students were tested to design a AIESEC society's membership form design and manual filing system based on two minimum mandatory criteria, namely, membership need to be renewed every semester and annual fees is RM2 only.

Diagram 1: AIESEC Society Membership Form

Name: Telephone:
Matric No:
College Address:
Interest:

Semester:
Payment: RM2 Date of Payment
Signature:

The above Diagram 1 is the common designed membership form proposed by the non-IT and IT students. The above form design showed some weaknesses. For instance, the form can only be used for one time usage. New form and member's bio-data need to be reentered again in every semester. Such transaction is too tedious, time consuming, wasting papers, and redundancy of administrative work. Secondly, there is no member form tracking method in accessing the existing form from the cabinet storage. The secretary will face a big problem to trace the existing member about their membership's status. For instance, serial number in this case is best using the student's matric number. It is the best approach among few methods as suggested by students for instance using citizen's Identity card number or form classification based on student's program and semester.

Diagram 2: AIESEC Society Membership Form

Name: Matric No:
Telephone:
College Address:
Interest:

Semester	1	2	3	4	5	6	7	8
Fee RM								
Signature								

Diagram 2 is the improved version after some discussions with students concerning an effective and efficient membership form designed. The new designed form shows some improvements. For instance, this form can be used and reused by the existing member throughout the 4 years of his/her study at university. No paper wastage and time saving of transaction because existing member no need to spend time rewrite again their bio-data. Secondly, the filing of each membership form is kept in the cabinet based on the student's matric number as serial no for reference. Such benefit allows fast retrieval and restore of the member's form in the cabinet. The result of the both designed membership form showed the different implication if student were not trained in this filing design. Diagram 1 show a very costly administration staffing, time consuming transaction processing, poor member form filing system for retrieval or restore in the cabinet. Whereas, the improved design membership form in Diagram 2 shows the most effective and efficient in terms of less staffing, fast member form data transactions, and easily traceable, retrieving and storing member form in the cabinet. Apparently, for a company's sustainability per se, the Diagram 2 form design provides a better cost effective, timely transaction and more productivity manner. More importantly, any complicated financial modeling, sales forecasting model, economic model is derived from this fundamental data filing designed. Therefore, if the business functional experts are not well trained in designing a relevant data filing system,

the further action in forming any business modeling analysis would finally result a very expensive operations that affecting company's market sustainability.

- The limitation of buying a readymade packaging software from the market

Buying a ready-made business application from the market seems easier and short cut in automating a company's internal transaction operation. However, in today highly competitive and cost overhead cutting in all aspects, relying on the readymade application would not be sufficient to ensure a company operation's cost is more effective compared to their competitors. As one saying, the devil is in the detail. Hence, the relevant data, data workflow, work procedures, and filing system adopted will highly affecting a company's operations in a most economic and cheapest survival manner in all aspects. For example, a same size operation company A and his competitor, Company B shared the same local market. But, if the company B only occupied a 20% of the administration staff compared to Company an in handling all business transactions, definitely company B stayed a better survival rate due to their cheaper overhead operation costs. Therefore, it is a passive mindset and indeed a deadlock to company real improvement if relied only on ready-made software. All functional managers need constantly improving their respective department's operation overhead by focusing on any no value added data and unnecessary work flow transaction.

- Issue of ISO quality, environmental, safety and health documentation certification

In general, the quality guru, Deming (2000) and Crosby (1979, 1984), both shared the same view that merely a documentation job would not help much in ensuring a good quality product. As Crosby said, it just like giving everybody a bible and we expecting he or she can become a nice person. Deming (Latzko, Deming & Saunders, 1996) said wearing a successful person's clothing would not mean he could become a successful person as well. The purpose of documenting all reports, transaction processes and work flow would not bring any benefit if it is only merely a passive documentation work without any effort in improving the real organization's work processes. In short, the limitation of current ISO certifications based on paper documentation received negative comments from both of the quality gurus. Without the proper knowledge of filing system, the ISO quality certification would just bring in vain benefit.

5. Conclusion

All disciplinary information business modeling is derived from respectively relevant data to capture as determined by each respective disciplinary expert. In order to obtain effective information documentation, filing system and timely transaction processes, a good knowledge in designing a filing system and data normalization is essential to be learned across all disciplinary profession. It should not be a proprietary knowledge belongs to IT profession only. Moreover, the best person in determining the right data to capture and any business procedures and modeling is still best decided by the respectively business profession, not IT profession. A simplified version of files' normalization is proposed in order to assist non-IT profession to learn in a faster, easier and better way in understanding without any burden of IT jargons. In conclusion, a quality decision-making knowledge depends upon on the right business statistically modeling, and the right aggregated business modeling relies on the right fundamental data files as designed.

References

Crosby, P. B. (1979). Quality is Free: the Art of Making Quality Certain. New York: Mentor, pp: 270.

Crosby P. B. (1984). Quality without tears: the Art of Hassle Free Management. New York: McGrawHill. 1984, pp: 205.

Deming, W. E. (2000a). *Out of Crisis* (1st Ed.). The MIT Press, ISBN: 0262541157, pp: 507.

Deming, W. E. (2000b). *The New Economics for Industry, Government, Education* (2nd Ed.). The MIT Press, Cambridge, ISBN: 0262541165, pp: 266.

Latzko, W. J., Deming, W. E. & Saunders, D. M. (1996). *Four Days with Dr. Deming: A Strategy for Modern Methods of Management* (1st Ed.) Addison-Wesley Pub. Co., ISBN: 0201633663, pp: 228.

STID 1013 Computer in Application. 2014. Lecture Note. Universiti Utara Malaysia.