CHAPTER 5

5. RECOMMENDATIONS AND CONCLUSION

After considering all the findings, observations and issues in RNZ EDMS, there are rooms for improvement opportunities which will be discussed in detail in the following paragraphs for the EDMS in RNZ.

The recommendations are structured in accordance to the three proposition taxonomies for easier presentation and alignment between research question, findings and these recommendations.

5.1 Strategic Recommendations

From the interviews, there are significant deficiency in using EDMS as a tool to become a leader in new technology and market leadership in this industry. In order to have this, the system need to impose big differentiation within its function in compared to other player in the industry. One of the missing functions in EDMS which can support its strategic benefit is decision support reporting mechanism. It is obvious that the current EDMS implemented in RNZ are lacking of reporting mechanism. Reporting mechanism which the study deem important are such as integrated real-time progress update, cost related to document development and reports regarding customer new requirement and

variations. Those reports are helpful for management to measure the project conditions thus help management to quickly decide on speedy decision.

5.1.1 Leader in New Technology

RNZ has always strived to be one of the leaders in new technology among the engineering design consultant in Oil and Gas industry. The implementation of EDMS was seen as one of the initiatives taken to achieve the objective. Nevertheless based on the interviews conducted with different levels of management i.e. strategic, tactical and operational, it was obvious that the following issues need to be taken serious attention in order for RNZ to move towards being one of the leaders in new technology. Issues on refusing to integrate forward and backward by external parties are vital to ensure RNZ meeting their objectives.

Focussing to EDMS alone as one of the platform, there are lofty needs to further improve EDMS in terms of its usability, and the functions that increase productivity require further attention.

By having EDMS available in cloud computing, decrease the capital investment on external parties to integrate with RNZ. Additionally, RNZ need to promote on benefits that their EDMS could substantially improve

communications especially in minimising delay in document transmittal and approval.

5.1.2 Accuracy of Decisions

RNZ cross functional teams continuously highlight that EDMS shall need to eliminate discrepancies due to document changes. EDMS seem to have the potential to embed intelligent modules which shall identify and alert users by using tacit or visual alerts to ensure other interrelated parties working on the same documents aware that action are needed and quick decision need to be established promptly.

Furthermore, as EDMS in RNZ stiffly attached to their project deliverables, there is a need to improve RNZ EDMS reporting and analysis module. Further study on appropriate analysis and reporting module are essential to provide accurate decision support to managers in RNZ.

5.2 Tactical Recommendations

As several concurrent projects developing on their own pace, each of them are exposed to difficult situation which required proper mitigation and speedy rectifications. Therefore, functions that support tactical activities are also most important for improvement consideration for EDMS.

5.2.1 Improve teamwork

Interviews have proved that there are teamwork deficiency exist with regards to usage of EDMS in RNZ. EDMS required to develop an efficient tools for communications which can smartly integrate RNZ documents with online comments and user can highlight their concerns visually for effective message delivers.

5.2.2 Improved product quality

Issues highlighted by RNZ clients focussed on RNZ product quality which relates to their documentations. It is important for EDMS to support the improvement of product quality in RNZ by introducing reduced document construction period in result giving better quality time for engineers to produce design related documentation.

5.2.3 Capacity planning

The current routine in developing documents in RNZ promotes user to develop the document offline or in other locally in users' local personal workstations, which later uploaded to a filing servers such as Microsoft Sharepoint which then later converted and uploaded into EDMS. Such procedures introduce many redundant files or documents inside the client-

server environment. It is hard for CIOs to estimates and plan on system capacity.

As such, it is recommended that EDMS creates a culture where user can easily work on a centralised system such as in cloud computing, where storage and other resources are centralised and manageable.

5.2.4 Real-time analysis

Project managers, planners, cost controllers and other project team members are obliged to closely monitor the healthiness of current running project as slight delay will cost big impact in terms of monetary and corporate performances. As in RNZ, documents represent most of the deliverables, documents are vital signs that can provide measurement on the project well-being. Thus the study is recommending that EDMS to consider having a function which can provide real-time analysis on any situation of the project.

5.2.5 Workflow Management Systems

Interviews have shown a big disagreement on current EDMS providing flexibility and responsive to changes. The study also identify that there is a requirement to improve teamwork, open culture and minimised discrepancies. It is recommended that EDMS to adapt a workflow management systems as one of its functions. It is to support a dynamic

business requirement and variables in document workflow as the findings mentioned that different clients or customer may impose different business process for document reviewing and approvals.

5.2.6 Collaboration

Current trends shows that open culture such as real-time and online communication channels for example, Lotus Sametime servers and windows instant messengers, improved significantly on communications, it is recommended that the EDMS required to deliver an online collaboration module to induce better reviewing communications and promote open culture.

5.3 Operational Recommendations

In a highly competitive marketplace, a listing of advantages a business may possess includes customer orientation and feedback, knowledge of the business and good co-ordination (Aacker, 1995).

The study found that there are several improvement opportunity for EDMS in RNZ based on the information gathering activities conducted. The improvement opportunities are identified as follows:

5.3.1 Reduce the Approval Cycle of Producing Engineering Design / Production Activity

It is noted that the current EDMS did not manage to assist users to reduce their number of activities undertaken to produce documents. The amount of effort is still the same. Users still need to go through the same amount of effort prior to getting the document approves. There is lack of the business processes reengineering (BPR) done during the setting up of the EDMS. Subsequently, the system has failed to make the current processes that are being adopted by the system to be efficient. Therefore, even though by having the system, it is still time consuming to accommodate engineering design or production activity

5.3.2 Ease of Uploading documents

It is noted that due to the number of steps that users have to do before a document can be uploaded, makes the system not user friendly. Thus, the system need to be updated or modify to improves the document uploading method.

5.3.3 Conversion and Document Viewing

It is also noted that the current EDMS has no built-in modules to convert document into EDMS viewable format. Currently DC need to convert the

documents using a third party software in order to upload the document into viewable format in EDMS.

EDMS are only viewable for common files such as “Words” documents and “PowerPoint” presentations. It is recommended that EDMS developer done further study on viewing modules of EDMS to cater most of the documents for RNZ. Viewable documents are important for users to quickly identify version of the document submitted to the intended recipient.

Additionally, viewing module can further enable online reviewing and approval process to done inside EDMS. Online approval cycle can further reduce use of printing, stationary and paper.

5.3.4 Metadata

It is noted that the current system is lack of control mechanism. It did not effectively highlight to users if the mandatory or important information is not captured. Due to this fact, most of important information was not captured. Hence it is important to have an effective mechanism to ensure that important metadata is entered.

5.3.5 Tedious Procedure in EDMS

The tedious processes or procedure for users to utilise the functions in EDMS has affected users' attitude and perception on the system. This factor also has affected the number of documents kept in the system. Hence, it is very important to reengineer the business processes to reduce the number of processes involved. Thus, simplifying the usage of the system. A user friendly system will attracted and interest users to utilise the system continuously.

5.3.6 Improve flexibility & response to changes

It is noted that the current EDMS has a rigid flow of business processes. This inflexibility also has affected on the users perception and attitude on the system. Users do not prefer to use the system and felt uneasy due to this constraint. Therefore, the EDMS need to be improved to align with operational needs.

It is also important for the system to align with client requirement. Fulfilling client's requirement is important because they are the users of the system. It is important to capture their requirement in the system.

Other than capturing the internal users' requirement, it is also important to capture the vendors' feedback. Their feedback is also important for the

improvement of the EDMS. The feedback helps the organisation in preparing the system so the document produced is already met the vendor specification.

5.3.7 Reduce lead time

Based on the above factors, it is important to produce system that is user friendly with effective control and meet user's requirement. These would encourage usage of the system. Hence, information can be captured. With the business process reengineering, the system would be able to reduce the processes taken. Hence, reduce lead time and users could upload more document. All are done in a single entry.

5.3.8 Revision management

Instrumentation Disciplines in RNZ is responsible to identify items, equipments and parts and convert them into bill of quantities and a few other documentations. Every drawing change or new revision will require Instrumentation Disciplines to re-identify new items, equipments and parts for the engineering development. It is recommended that EDMS to have a revision management to make it easier for disciplines to do a comparison thus make speed up development of documents.

5.3.9 Online comments

A common request from interviewees is to have an online comments or in other word on-the-fly mark-ups and review. Where engineers can draw clouds to highlight changes and put comments on the document during review. The online comments will enable reduced in paper usage as more activities are conducted online.

Apart that jotting down on the document, online comments can simplify communications between the groups working on the documents. Comments can also highlight changes or update to the documents which can later simplify work process and document updating.

5.4 Conclusion

The adoption of new technology remains a prime driver for organizations seeking to improve their short, medium and long-term performance. The path towards higher productivity is not trivial. The conventional means to improve material and information flows are not always adequate, and therefore, increasingly the improvement activities have been focusing on business processes and their improvement.

This paper has evaluated the features on which current document management systems are based into taxonomies of benefits EDMS brought to the organisation.

EDMS vendor should take example of this case study to provide better methods and tools in order to generate efficient yet successful document management system and better integrated enterprise systems. It is important to properly align the operational activity to the business process adapted by EDMS.

Findings showed that EDMS in RNZ has introduced several positive improvements to the organisation, in terms of its strategic benefits, tactical benefits and operational benefits. How ever there are opportunities for EDMS improvement available in the market provided the current system is available for integrations and further developments.

Similar evaluations can be used to purchase other similar systems to ensure that new acquired systems are aligned with organizational intended benefits.

From the above case study conducted, it was identified that the evaluation method available previously was not suitable for IT/IS. The traditional evaluation only considered affected the tangible benefits inclusive of the

tangible financial cost and benefits such as the direct project cost and the cost saving derived from the implemented investment and the alignment of the investment with the organization business objectives and strategies. However, this creates confusion among the organizations in terms of evaluation process for the IT/IS investment since the IT/IS investment are having difficulty to be quantified in monetary terms because of its intangible nature of many of the derived benefits.

Today, study shows that these traditional evaluation techniques is inappropriate since it discourage the importance of IT/IS investment that offer intangible and non-financial benefits. Hence, IT/IS investment such as the EDMS need to be evaluated through the taxonomies of organizational benefits not only from the intangible benefits perspective but also from the non-financial benefits perspective. Evaluations are done by getting feedback from all levels of management i.e strategic, tactical and operations.

Organizations need to identify their critical success factor and their competitive advantage to be competitive in the industry. They must be able to translate these factors into data that can be generated into real time report for them to be able to conduct analysis. Hence, they could do a projection or forecasting for the organization business and operational strategies and for decision making. Therefore, it is critical to have all

reliable input or data to be able to generate a reliable report. The input or data must be updated frequently and on real-time basis for the organization to be able to generate an updated and current report.

Due to that fact, the IT/IS investments such the EDMS project that support these initiatives must be user friendly without jeopardizing the functions. Hence, it is very important that attention is given to the human and organizational technology management while implementing the system to avoid the initiatives from being abandoned which users are reluctant to use it. Thus, the initiatives are considered a failure. By getting users and management involved during the project implementation very much contribute to understand what are the users and management needs, expectations and required from the project. Therefore, the project could meet their requirement and provide benefits to them. These will encourage them to utilize the system. Hence, provide input and information frequently. However, they must also be equipped with the required knowledge to utilize the system. The knowledge would give them a better understanding of the system and to avoid users from using the system incorrectly. A proper usage of the system with a reliable data will produce results which users will appreciate.

Another factor to be considered while implementing the system is the business process reengineering (BPR). The BPR must be done to

minimize the processes done manually as compared to the automated processes. This could reduce the time taken for processing and indirectly reduce the cost of operations. Thus, more documents could be processed within the same period as compared to the manual processes.

However, while considering the user friendly and minimizing the processes, the security measures should not be compromised. Users must be effectively alerted should any of the important input or data not captured by the system. Otherwise, report generated will not be accurate due to the missing of information.

Systems that are implemented must be regularly reviewed and updated to ensure that it stays continuously meet the organization requirement. Feedback from various parties including external stakeholders must be considered. It is important that the system being reviewed regularly since the systems support the organization to stay competitive in the industry. Therefore, organization should know what are they expected to achieve from the system in order for the system to meet their needs and requirement.

Additionally, employee resistance and a culture based on reactive isolation can become additional obstacle to the implementation problems. Acknowledging failure through loss of confidence and user participation,

are important factor to ensure better buy-in from users thus creating overall effectiveness of the system.

Furthermore, system implementation are required to pay high attention to training needs for the implemented system to ensure process know-how are properly migrated from the implementation group to the users. Appointment of subject matter expert can be considered as necessary as users required to have a focal point of reference should during the operation of EDMS, users may have an easy and direct reference for any problem with the operation. Above all, training should not be taken lightly, as users may need to understand that some functions available in the system are helpful to simplify their business process.

Finally, the system will not function as expected without human and organizations consideration during evaluation. Their contributions are important to the successful of a system implementation. The intangible and non-financial benefits must be considered during IT/IS investment evaluation since IT/IS initiatives provide intangible and non-financial benefits to the organizations.