Business improvement using organisational goals, Riva technique and e-business development stages

A case study approach

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Abstract

Purpose – The purpose of this paper is to examine how to achieve business improvement using clear organisational goals and well-communicated vision, together with a powerful process modelling technique and an analysis of the adopted e-business development stages.

Design/methodology/approach – Employing both business process modelling and improvement complement and reinforce one another. Among different business process modelling techniques, Ould's Riva method was selected to analyse the business processes and to improve the CRM business process in Incom Egypt. In order to get a deeper insight, seven-key decision makers at the case study organisation have been interviewed. E-business development stages have also been elaborated and analysed in the case study. This case study approach enables the researchers to get a complete picture of the problem.

Findings – It was found that Incom Egypt aimed to automate their business processes to solve these problems but they failed. Main reasons behind its failure are their unstructured business processes and employees resistance to improvements. Setting clear goals that follow the organisation's mission and vision can direct managers towards better decision making. Therefore, identification of business processes should be among the first steps to understand business structure, where inefficiencies in current activities could be detected, adjusted and improved. Improvements could then follow e-business development stages using Earl's technique.

Originality/value – The primary value of this paper is that business process improvement does not depend on one technique, but rather lies in the combination of process modelling, and e-business development together, which in turn helps decision makers successfully set up effective organisational plans via clarifying business processes. The improved system will provide a roadmap for organisations to make the proper transition to e-business.

Keywords E-business development stages, Goal determination, Process improvement, Process modelling, Riva technique

Paper type Research paper

1. Introduction

Goals are resolutions to achieve a desired result, where they provide a clear understanding of what the company is striving to accomplish based on the organisational mission and strategic objectives. One strategic organisational objective is organisational improvement. Successful companies set goals in every business plan and become a regular part of ongoing business operations. Plans can help organisations identify what it needs to achieve on a regular basis (Rayport and Jaworski, 2007). Accordingly, most businesses require their employees to meet targets, upon which employees’ performance could be evaluated. Targets should adhere with
the organisational strategic plans to provide better integration and consistency with the organisational mission. They also need to be clear enough for employees in order to make it easy for them to achieve the organisational goals (Wahba et al., 2012).

Planning in particular often receives less attention from small business managers than they should. One way to more effectively fulfill this management function is through effective goal setting. The success of a business will depend on its long-range goals for sales, profits, competitive position, development of personnel and industrial relations that require improvements on regular basis. For an organisation to efficiently and effectively identify and set-up its plans and goals, an illustration of its business processes and the detailed activities within each process need to be clearly identified (Lucey, 2005). Thus, identifying required process improvements necessitates modelling business processes to understand the nature of a business and to evaluate the carried activities associated with each process to achieve its goals (Ould, 2005). This is particularly clear where an organisation might produce an efficient output but yet, not the one needed to achieve its goals. Beside business process improvement (BPI), e-business development is a constituent of the organisational required improvements, which should be part of its strategic objectives.

Business process management (BPM) mainly focuses on the management of organisational business processes and the flow of work and information. It encompasses different business process modelling techniques that can simplify the understanding of the nature of business. BPI helps organisations identify malfunctioning business processes and measure their performance for better improvement. E-business development could be achieved when business processes are revised and improved (Fady, 2010). In this way, employees will have a better chance to realise their own roles, set plans and put targets to achieve on their day to day activities rather than being overloaded by paper work that normally keeps them unaware of the actual organisational vision.

Accordingly, the aim of the current study is to examine how the organisational goals and vision together with a suitable business process modelling technique determine and shape the e-business development enabling an overall business improvement. The paper starts with a brief introduction followed by the review of literature about CRM, approaches to process modelling, the Riva technique and finally the stages of e-business development are explained. The research design is illustrated followed by a section on the analysis of Incom Egypt based on its web site analysis and researchers observation. After that a clear understanding of the case study is overviewed using the data analysed from the interviews conducted, having a separate section on improved UOW diagram, the role activity diagram (RAD) and the stage of e-business development at which Incom Egypt had reached. Finally a conclusion section shows the research findings and recommendations.

2. Literature review
Organisations that do not take the time to develop missions are often ineffective. A mission statement explains why the organisation exists and what business they are in. It also states what the organisation does currently and sets parameters for what it does not do. It is the base upon which organisational goals and objectives are set for planning and scheduling (Sadler, 2003). The vision statement articulates the future of the organisation and the community that it serves, and implies the work that still needs to be accomplished. Accordingly the vision statement gives credibility and motivation to the mission statement (Martins and Terblanche, 2003). Setting a vision refers to
understanding the organisational role, with respect to employees and the outside world, which in turn derives everything else. You cannot be effective unless users give you consultation that is, to simply will work with you. Adhering to the organisation’s vision is considered a key success factor towards improvement (Boyle and Panko, 2012).

It might be worthless to construct a well structured and detailed plan without considering the unexpected events while putting it into action. This is highlighted where an organisation may fail to follow a plan due to unclear goals and employees resistance. Employees are implementers for the new system; they should have a positive vision of the new automated system to encourage its success. Without taking the employees’ involvement into consideration the organisation might not be able to apply new improvements.

Thus, planning and goal achievement are both tied to management; where under a good management organisational constituents can function independently (Longenecker et al., 2009). But in order for management to do a good job, organisational goals need to be clear enough to set up an objective and realistic plan. Entrepreneurs cannot realise the required targets that are compatible with the organisational goals and objectives without having a comprehensible and concise picture of the organisational processes and its detailed activities that will enhance their vision while planning and setting up targets, and thus achieve the organisational goals easily. As employees are the most people aware of the business processes and requirements, they should be involved in the improvement processes (Haag and Cummings, 2013).

One of the most important goals of any organisation is increasing sales, which is directly related to customers. Therefore, customer service or customer relationship management is a matter that requires special consideration while setting up goals and plans (Abd El Aziz, 2012). Organisations need to attract, acquire and retain customers (Turban and King, 2011). This could be approached using a good CRM (Anderson and Kerr, 2002). Therefore, more explanation about CRM and how business process modelling and improvements can help in identifying precise plans to achieve the organisational goals will be shown in this study.

2.1 Customer relationship management

Technology has enabled organisations develop good customer relationship by linking front end processes (such as sales, marketing and pricing) with back end processes (such as finance, shopping and human resources). Since the introduction of CRM, it has been defined differently with a wide variety of focuses ranging from a shallow definition such as just establishing a call center, having a web presence for communicating with customers to mining a customer data warehouse. This makes it difficult for managers to understand how functional areas interact with the CRM (Ramsey, 2003).

In 2000, Handel has defined CRM as the process of acquiring, retaining and growing profitable customers. Massey has also defined CRM as attracting, developing and maintaining profitable customers over time (Massey et al., 2001).

Although a number of studies (Berry, 1983, 1995, 2002; Crosby and Johnson, 2001; Dwyer et al., 1987; Hart and Johnson, 1999; Morgan and Hunt, 1994; Palmer, 2000; Sheth and Parvatiyar, 1995) have tried to understand the importance of cooperative and collaborative relationships between buyers and sellers, there is still no consensus on the CRM definition. CRM and relationship marketing have almost been used
interchangeably (Parvatiyar and Sheth, 2000). By broadening the scope of relationship marketing and viewing it in a comprehensive management and social context, Gummesson (2002) has defined it as “marketing based on relationships”.

Accordingly, firms wishing to improve their relationships with customers need constantly to monitor their behaviour and internal processes (Leo et al., 2005).

2.2 Approaches to process modelling

Early approaches to process modelling tend to treat processes as fixed, routine and repeatable detailed activities. A number of BPM approaches try to make the performance faster and cheaper, and seek to achieve this either as a radical overhaul or by instituting an organisational system of continuous improvement. Such techniques include total quality management (TQM), business process reengineering (BPR) and Six Sigma (Verma, 2009). The objective of TQM is to achieve process improvement using cross-functional teams, scientific methods and employee involvement, to produce a more process-centric organisation in which improvements are made on incremental basis. In BPR the objective is to derive an organisation’s business processes from its business vision and objectives, and to implement a suite of measurable processes top down. BPR exercises often involve major changes to organisational structure and IT infrastructure.

Reports produced from data recorded about processes help in monitoring process performance. Automated processes in particular provide online real-time information in a systematic way. In 1993, Davenport complained that, in general, computer applications are not designed to support business processes, but are rather designed to process information. He believes that the systems analyst and business executives should analyse the business processes before commissioning a computer application. He introduced a distinction between process improvement and process innovation. While process improvement is a bottom-up technique that relies on incremental changes which need to be worked out in detail and to be understandable by lower level employees, process innovation is more top-down.

Once all the processes in any organisation have been mapped, process improvement can be used to improve small individual processes while process innovation is used to bring in new broader processes that change more radically the way the organisation works (Davenport, 1993). Therefore, business process modelling could be considered a tool needed for both process improvement and information technology applications.

Unified Modelling Language (UML) on the other hand is a comprehensive modelling standard for describing software designs. Although it helps bridge the gap between the business-friendly solution design and detailed design of software systems, it still takes a lot of time to keep the diagram reasonable and synchronised with the actual code. UML diagrams are only appropriate if the organisation size can manage them. Finally a good UML software costs money and it takes quite a while to properly master it.

Globalisation and instant access to information, products and services have changed the way customers conduct business (Abd El Aziz, 2012). This has called a need for techniques such as the Six Sigma technique that could be used to assist in process improvement. It helps organisations focus on developing and delivering near-perfect products and services. Sigma is a statistical term that measures how far a given process deviates from perfection. The central idea behind Six Sigma is that if you can measure how many “defects” you have in a process, you can systematically figure out how to eliminate them and get as close to “zero defects” as possible. One of the Six
Sigma basics is DMAIC: define, measure, analyse, improve and control. They are all built on business processes that need to be defined at first. Knowing that each process has inputs and outputs, one could be able to direct inputs in order to control outputs. Thus, process mapping is one way to figure out how business processes could be lined out for improvement (Roderick et al., 2008).

Six Sigma is narrower in scope than TQM or BPR and uses statistical techniques to focus on those parts of processes where the problems are occurring, to identify areas for improvement. One of the Six Sigma basics is DMAIC. They are all built on business processes that need to be defined at first. Thus, process mapping is one way to figure out how business processes could be lined out for improvement (Roderick et al., 2008).

3. Riva process modelling technique
Riva method is another technique used for process modelling that focuses on the management of business entities through the actions and interactions of different roles. It combines two forms of diagramming, process architecture diagramming and role activity diagramming (Abd El Aziz and Fady, 2012). While a process architecture diagram shows several or all of the business processes in an organisation, and how they relate to one another, RAD shows, for a single process, the activities within roles and their interactions.

It has been selected for process modelling as it seeks to explore the deeper reaches of the business. It focuses on understanding and designing business processes derived from essential business entities. It puts roles, actions and interactions at the centre of its detailed analysis rather than data items or process logic, and it offers a high level, architectural level of analysis to supplement the lower level analysis of business processes. It does not start from a position of a commitment to existing work practices and technology base, but rather seeks to understand those in terms of what the business is about and trying to do (Ould, 2005).

The more recent development of BPM systems (Weske, 2007), combines a more dynamic understanding of processes as arising out of interactions between different roles, a desire for process agility, and an interest in automating business actions and interactions. The purpose of a BMP and BPI is to facilitate the work done by a group of people who carry out a certain process. It may do this by orchestrating and supporting the work flow between the members of the work team, or by executing some actions itself from code.

The aim of BPM systems is to enhance an organisation’s ability to define and evaluate its processes and modify them accordingly; in principle they offer greater flexibility than structured systems, where work have to be re-organised to fit the demands of the computer system.

Riva method also supports improvements that might be performed on a short-term trial basis and then consolidated if they appear to support long-term objectives. Process models produced using Riva provide a basis for process analysis and improvement. Process improvements might be incremental that are normally applied at the detailed process-level RAD, while radical improvements are more likely to be applied on the higher architectural level (Ould, 2005).

There are three main kinds of process improvement in Ould’s view: restructuring roles and interactions, flow-wise improvements and point-wise improvements. In restructuring roles and interactions, changes are made to the actions in a role or to interactions between roles. Roles and interactions might also be removed or combined. In flow-wise improvements, the flow of activities within a process, or between
processes in the process architecture, is rerouted, simplified or streamlined. In point-wise improvements, modifications are made at particular points in the diagram such as actions, or case processes, to enhance efficiency or effectiveness, in order to gain cost reduction or shorter cycle time.

According to the Riva method, in order to arrive to the architectural model; first a listing of EBEs should be extracted. Second, a list of UOWs should be qualified based on the extracted EBEs where the UOW diagram could be delineated. Third, a UOW diagram could be elaborated into a process architecture diagram. The list of EBEs captures the essence of the business of a particular kind of organisation, such as a port. All entities of interest are initially listed, and the list is subsequently reduced to keep just those judged “essential”. Ould suggest some tests for distinguishing EBEs from secondary (DBEs):

- it should be possible to write “a” or “the” in front of an EBE;
- entities designed by the organisation in order to carry out its business are not EBEs; and
- entities which are mainly roles or departments in the organisation are not EBEs.

4. E-business development stages
New business era places the internet as a business backbone and a platform for conducting transactions. Internet technology revolution affects all business activities and by all means is well beyond information technology revolution. As illustrated in Figure 1 the e-business evolving model is divided into six stages (Earl, 2000):

(1) external communications;
(2) internal communications;
(3) e-commerce;
(4) e-business;
(5) e-enterprise; and
(6) transformation.

Figure 1.
Earl's e-buisness development stages
Given the model for evolving to e-business we stand on point that e-business growth process is an evolutionary rather than revolutionary process that can be presented in phases, where each phase is distinguished by the level of technology applied and used.

The development of e-business in the first stage, as described by Earl, starts by external communication, when a large corporation decides to have a home page on the web. The purpose is to facilitate connection and communication across an organisation and with other parties including customers. Internet usage at this stage is very limited; it does not go beyond sending and receiving e-mails.

In the second stage, the focus is on the internal communication within an organisation. In fact, changes will take place internally to support internal data transfer between employees, but also connecting them with the external community. In stage two, the IT department of the organisation undertakes the management of internet usage by building intranets and extranets.

In stage three the term e-commerce begins to be applicable as online transactions take place in some companies. During this stage, some companies are unsure of the applicability of the new technology; it takes time to understand the new techniques of doing business. To handle online transactions organisations need to acquire new technology and infrastructure to enable online exchange of business documents.

Stage four sees the development of e-business with the introduction of new ways for selling and buying over the internet. Existing business processes move online and customer interfaces are built. Stage number four electronically implements business by improving or re-engineering the current manual processes, so leading to better and higher performance.

Stage five is known as e-enterprise. More attention is now drawn to process management. There is more focus on the use of information within the organisation, and on tracking transactions as they happen. It becomes easier to pass information among managers, which in turn improves decision making. Selection of employees who are information literate and who know how to use it is one of the objectives in this stage. The general aim is to share precise and accurate information among different managerial levels across the organisational network.

Stage six is the transformation stage: by now the organisation has already applied e-business and all previous stages are met. In this final stage the organisation is comfortable with the new technology and is routinely using it. It is now easier to cope with a dynamic environment by continuous learning and use of technology.

Earl’s model gives a general transformation process to e-business for an enterprise in the public or private sector.

5. Research design
In order to better understand the problem at hand, and in an attempt to investigate and analyse the case organisation from the inside, identify the malfunctioning, or even missing processes and propose an improved view of the business process and e-business, a number of research methods were used.

As an initial step to understand the current situation in Incom Egypt, semi-structured interviews were designed and conducted with seven-key decision makers. The organisation’s president and vice president were interviewed; as they are the two main decision makers and because they are supposed to set and control the organisation goals and vision. The sales head of department has also been interviewed as the head of a critical department that affects the organisations revenue. Moreover,
four senior staff members at different departments were also interviewed in order to get a full picture of the problem at hand. The interview questions are summarised in Table I. Having the interview data interpretively analysed, a clear picture of the processes became a logical sequence to assist in understanding the structure of business.

Then, as BPI rely on a clear picture of the business processes so that processes could be easily identified, analysed, measured and improved, Riva technique was used for modelling the business processes, followed by an online assessment of the e-business development stages used by Incom Egypt. Improvements afterwards could be applied and controlled wherever they are found to be essential.

5.1 Incom Egypt analysis
Egypt’s industrial sector has undergone major reforms since 1991, showing clear steps towards privatising and restructuring state owned enterprises. This has led the way for private organisations such as Incom Egypt to launch their own business. Incom Egypt Company is a subsidiary of Incom (America), Inc that was first established in 1994. It is a manufacturer of custom wire, harness assemblies, flexible building cables, power supply cords and plastic spools. The company serves both the local and international market.

Incom Egypt provides a wide range of products, some of which are wires, cables, wire harness assemblies, power supply cords and plastic spools. Incom Egypt products are certified by Underwriters Laboratories (UL) and SASO and are strictly tested in compliance to their standards. Additional compliance testing is preformed where other certifications are required such as BS/IEC/CSA/VDE and CE. Incom has a set of traditional and core activities, some of which are sales, research and development, prototyping, assembly, moulding, quality control and technical recognitions.

5.2 Incom overviewed from those interviewed
In order to investigate issues in an in depth way, discover how decision makers think and to deepen understanding and explain the gathered data, semi-structured interviews were conducted with seven different decision makers at the case study, Incom Egypt. The interviews conducted enabled obtaining detailed information about the organisations. An interview questions are summarised in Table I.

Table I.
A summary of the interview questions

<table>
<thead>
<tr>
<th>Interview questions</th>
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<tbody>
<tr>
<td>1. What are the most important aspects that your organisation focuses on both internally and externally?</td>
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<td>2. Are internal and external activities separated within your organisations? What are the types of service that your customers usually demand?</td>
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<tr>
<td>3. What do you think your organisation should do to face the competition?</td>
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<tr>
<td>4. What are the first steps after receiving basic specifications?</td>
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<tr>
<td>5. Prototypes are representative samples of how a product would look like when built</td>
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<tr>
<td>6. What does your organisation supply? Do the products that your organisation offer comply with the required standards?</td>
</tr>
<tr>
<td>7. What are the procedures required for delivering your products?</td>
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<tr>
<td>8. How would you regard your organisational online presence?</td>
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<tr>
<td>9. Do you have plans for investing on IT in general and e-business development in particular?</td>
</tr>
<tr>
<td>10. Which departments are responsible for which activities? How are these activities conducted?</td>
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</tbody>
</table>
From the interviews with different departments in Incom Egypt at different managerial levels it was observed that internally, from the company’s side the main important aspects to focus on are sales maximisation, cost reduction especially in production, maintenance and customer complaints, and collections. However, externally the focus is mainly on external markets, customer service and the level of customer satisfaction.

Commercial process combines both the internal and external activities performed to serve customers that always demand tangible or intangible services.

Within the same process, different departments normally work together in order to achieve the process success both for customers and the organisation. Therefore, internal and external objectives in this process are unbreakable.

In order for Incom Egypt to survive the fierce competition, it must cover its cost, expand their sales volume, customer base, generate more profit and improve their business processes. The commercial process combines different departments as will be shown later in the RAD of the commercial process in Section 2.3.

Upon receiving basic specifications and/or drawings, Incom develops recommendations and various options to suit customer requirements. Prototypes are representative samples of how a product would look like when built.

With wire manufacturing and moulding processing combined under the same roof, Incom supplies complete wire harnesses which consists of cordsets/power supply cords, wire assemblies and moulded components. All Incom products are tested to comply with the required standards.

Products are shipped and labelled per individual customer requirement, and recognition of products from other countries can be worked out upon customer request. Thus, Incom has three factories (cables and wires, wire harness assemblies and power supply cord) dealing together.

Incom Egypt does have a web presence but does not allow actual activities to be conducted online. It is mainly informative with few online transactions involved.

Incom Egypt has already invested and still plans to invest more money on IT. However, this investment mainly involves automation rather than steady steps towards an effective e-business development process.

There are different departments at Incom Egypt that have different responsibilities:

- The marketing department is responsible for penetrating new markets and setting up a plan to attract customers and manage the customer service.
- It is the responsibility of the customer service department to deal with customers and other internal departments. The customer service department needs to check with the technical department the product specifications and with the pricing department to send and negotiate quotations.
- The customs and the sales departments are responsible for delivery and following-up the sales order status. They are also responsible to contact customers for money collection.
- The sales department is responsible for implementing the sales plan according to the financial department’s requirements. The sales department has the quantity balance of the delivered goods upon which collections take place.
5.3 Using the Riva technique

By applying the Riva technique rules in Section 3, it is possible to reduce the list of entities. The list of entities below may contain some that are not truly derived from the essence of the business but they are treated as EBEs since they have essential information that is dealt with in any other organisation in the same line of business.

5.3.1 Essential business entities. According to the Riva method, a listing of EBEs captures the essence of the business of a particular kind of organisation, such as a port. All entities of interest are initially listed, and the list is subsequently reduced to keep just those judged “essential”. The following list shows suggested EBEs for Incom Egypt:

1. service that the company offers: customer relationship management (commercial), onsite consultancy, offsite consultancy;
2. things that differentiate the organisation from others: shipping, prices, packing;
3. events in the outside world the organisation needs to respond to: changes to prices, changes in governmental rules and regulations, changes in the free zone rules;
4. things that the organisation cannot get away from: customs, sample, quality control, bills, taxes, insurance;
5. things in the outside world the organisation needs to respond to: changes to sample, competitors, new products, discounts;
6. things we make: plan, changes to plan, purchase, sales, marketing;
7. things we sell: product;
8. things the organisation deals with day in, day out: inventory, scrap, material control, payments, invoices;
9. things that the customers have or want to do: purchase;
10. things that the organisation keeps information on in its information system: finance, employee, customer, transaction.

5.3.2 Unit of work. In Riva, units of work are those entities that have a lifetime in which the organisation is interested. The organisation keeps track of such entities from the time they arrive till the time they leave. An entity does not become a unit of work if the organisation is not interested in tracking it through its lifetime, nor if someone else has the primary responsibility for looking after it.

On this basis, some EBEs from the list do not qualify as units of work. onsite consultancy, offsite consultancy, changes in governmental rules and regulations, changes in the free zone rules, bills, taxes, insurance, competitors, new products, discounts, sales, marketing, payments, invoices, employee, customer and transaction are all important parts of the port’s business, but Incom Egypt is concerned primarily with looking after and tracking products and production, as well as customer satisfaction. A list of essential UOWs (EBEs that become UOWs) is shown as Table II.

Ould notes that it is possible for new units of work to emerge around collections of other units or out of changes to existing units. In the present case, the best candidates for “unseen” UOWs are produced by having to deal with changes to sample, plan and price.
Incom Egypt UOWs. Looking at the list of units of work one can understand how the business, information and paper flow from one process to another.

5.4.1 Improved UOW diagram at Incom Egypt

Recall the UOW diagram for Incom Egypt from (Fady and Abd El Aziz, 2012), it was clear that some improvements were to be applied at the hierarchical level in the UOW model and the second-cut process architecture. Regarding the UOW model the suggested changes are as follows:

1. Change the “CRM” business entity to be “Commercial”. This will provide a wider scope that reflects the real functions and activities that are performed in the process as its functions are wider in scope than just managing the relationship with customers.
2. Change the “Cost” business entity to be “Price”. Since pricing is not just to add a certain percentage on the cost in order to compute the profit and deliver the price that could then be adjusted with the customer and according to the market conditions, therefore, the price process will reflect the need to identify how pricing is performed based on the cost and other variables before changes to price are applied (Figure 2).

5.4.2 Improved second cut process architecture in CRM

Some changes were found to be essential in the second cut architecture mainly originating from the modified UOW diagram. The changes are not limited to the commercial process; however, other changes in the flow of work between processes of the entire model had also taken place. The changes that took place are as follows:

1. change the “handle a CRM” process to be “handle a commercial” process;
2. change the “handle a cost” process to be “handle a price” process;
3. add deliver from the “handle a customs” process to the “handle a commercial” process;
4. add deliver from the “handle a shipping” process to the “handle a commercial” process; and
5. add deliver from the “handle a QC” process to the “handle a commercial” process (Figure 3).

5.4.3 The commercial process RAD

In this section the commercial process at Incom Egypt is depicted in Figure 4. The RAD technique is useful in showing how different activities are taking place simultaneously. Following each thread, one can...
understand the sequence of activities on the same thread. However, different threads in the same diagram show how the case process deals with different cases simultaneously.

In the commercial process (see Figure 4), several departments interact with each other to attain their goal. This process mainly focuses on fetching sales orders and following them until they are delivered to the customers. While doing so, other processes are also working in parallel to the commercial process to bring the order to its final destination. The interviewees stated that the marketing department is responsible for penetrating new markets using different marketing strategies. It is also the department's responsibility to set up a plan to attract customers and manage the customer service. The CEO can then adjust the plan together with the marketing manager.

Interviewees also believe that it is the responsibility of the customer service department to deal with customers and other internal departments as they are the customers' representative in the company.

The customer service department needs to check with the technical department the product specifications and with the pricing department to send and negotiate quotations. Once the product is in operation, the customs and the sales departments start making their needed actions for delivery, while also following-up the sales order status with other departments until the product is delivered to the customer. They are also responsible to contact customers for money collection.

The sales department is another department that is responsible for implementing the sales plan according to the financial department's requirements. In this department, competitors' prices are checked and compared to Incom's prices. The sales orders are received from the customer service to be put into operation. Then the sales department follows the orders in operation until they are finished and requests delivery from the
Figure 3.
Second-cut process architecture after being improved
Figure 4.
The RAD for the “handle a commercial” process
concerned departments. On daily basis, the sales department checks the daily production with the planning department and compares the actual production rate to the planned, then delivers a status report to the financial department in order to take the correct decisions with the CEO. The sales department has the quantity balance of the delivered goods upon which collections take place.

After understanding the nature of business in the commercial process, a decision maker can now figure the process more clearly, plan the targets and relate them to the assigned person. Outcomes of plans can be easily traced and measured in relation to each activity performed for corrective actions. Planning is ineffective without a definite business structure for to assist in goal achievement. Accordingly, both BPM and BPI should proceed planning and decision making.

5.5 E-business development stages
The evolution of e-business in most organisations could be in six stages (Earl, 2000). Each phase is distinguished by the level of technology applied and used. Table III elaborates the six stages of Earl’s process and the factors that we might look for in examining data about Incom Egypt.

After examining the situation of e-business in Incom, it was found that the company has a web site which is still under construction although the quantity of data displayed. Income has internal domain server and e-mail contact for each employee. Information about the company and contact person’s data are also displayed on the web site. Despite Incom’s technological development, employees are not exchanging or viewing data on a common software or enterprise resource planning (ERP) system. The company has a material resource planning (MRP) system that holds all the data about the customers, their financial situation, inventory and customers’ orders. The MRP is not shared by all employees, nor are its modules fully utilised. Accordingly, Incom Egypt is still in the first stage of e-business development, having their data on the web site, and e-mail contacts to serve customers.

<table>
<thead>
<tr>
<th>E-business stage number</th>
<th>Stages of e-business</th>
<th>Factors to be examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1: Organisational presence on the web</td>
<td>Present information about the Income Egypt products on its home page and existence of e-mail contact list</td>
<td></td>
</tr>
<tr>
<td>Stage 2: Internal and external electronic data transfer</td>
<td>Should connect different departments electronically to enable data transfer through intranets and extranets</td>
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<tr>
<td>Stage 3: Applying online transactions</td>
<td>Should acquire and adopt new technologies like WIFI, EDI, XML and others</td>
<td></td>
</tr>
<tr>
<td>Stage 4: Development of online business</td>
<td>Should utilise online services to request products, make payments, follow-up shipments, submit inquiries/complaints, etc.</td>
<td></td>
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<tr>
<td>Stage 5: E-enterprise management</td>
<td>Managers should be able to trace internal and external processes, track orders, shipments, and other information online. They could also be able to modify plans and take decisions electronically</td>
<td></td>
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<tr>
<td>Stage 6: Transformation stage</td>
<td>Incom Egypt departments should acquire and adopt latest technologies to interact effectively with suppliers and customers worldwide</td>
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Table III. Essentials of e-business in Incom Egypt
Based on the undertaken interviews in Incom Egypt, it was noticed that although Incom Egypt has both a mission and a vision statement, it does not seem to state them clearly enough nor are they fully understandable to apply improvements, where e-business development is the most important. Employees do not work on solid strategic plans or given clear targets to meet.

The problem does not only lie in the company’s strategic view including its mission and vision statements, strategic goals and target plans, but is also in identifying the organisational processes, their interactions and the roles played by its staff members and not just a simple automation process. As long as there is no clear business model to identify the detailed activities within each process and the way they interact with one another, the employees would find it very hard to figure what they need to achieve. Not to mention that managers can hardly measure employees’ performance without having a clear idea of business processes, their relationship and their effect on one another.

Thus, e-business development requires understanding the business and its structure through a clear dynamic view of the organisational business processes and their interactions with the roles involved in each process. Stages of e-business development are also considered as one of the organisational goals that should be treated in the same way. Ould's Riva technique is considered a suitable vehicle; especially as it provides a clear business process model for the entire organisation with suggested improvements for the sake of goal achievement within which e-business development is one of them.

6.1 Lessons learnt
The study emphasises the importance of the combination and triangulation between the three techniques used. First, identifying the organisational goals and plans seems to be a crucial aspect to organisations, without which, second is to understand, analyse and improve business processes using Ould’s Riva technique, and using stages of e-business development to accelerate goals achievements. The three techniques affect and reinforce one another in which e-business development needs to be planned, measured, analysed for corrective actions if needed, therefore it might fail if not clearly identified in the organisational goals. Organisations that reach higher stages in e-business provide a greater chance for the organisation to achieve its goals faster and easier than others. Obstacles that organisations face while achieving their goals could be overcome by understanding and improving business process, thus managerial strategic vision becomes clearer plan, follow-up and measure the outcomes.

After understanding the nature of business in the commercial process, it is now easy to make process plans and targets and relate them to the responsible person. Outcomes of plans are easily measured and traced. BPM and BPI can effectively help in planning for goal achievement. BPM is ideal to start with; as it helps decision makers easily and clearly find out the required improvements for each business area in general and each process in particular. BPI is an essential part of the organisational required improvements; as it helps organisations identify malfunctioning business processes and measure their performance for better improvement, and thus should also be introduced early in the planning process.

6.2 Future work
Selected business processes may be explored in RADs in order to deepen the insight and get more details about how the business get the activities done and who are
responsible and held accountable for doing so. This will help in the managerial improvements and can also assist in the information technology improvements.

Producing the UOW diagram helps to understand the whole business flow of the organisation without going into further details. This can give a brief summary about the company's nature of business as it can also be used to compare the business nature of this industry with other companies in the same line of business. Perhaps generalisation of the ways of improvement may be discovered and justified.

The research has a clear limitation, where only one case study was thoroughly investigated, analysed and modelled. A number of cases, perhaps in different industries would have been more possible to generalise the results.

7. Conclusion
To sum up, we would say that one of the first steps to problem solution is to set clear organisational goals and a well-communicated vision. This unfortunately would not be enough because a well-defined strategy needs good implementation. This derives the need to model the systems process in order to better understand the current activities and practices and accordingly detect, adjust and improve any inefficiency that may cause customers to switch to other providers. This would be yield better results if the e-business development stages were analysed. Using the three techniques together was found to help an organisation achieve its goals, succeed and even make satisfying profits; especially with the presence of E-business and an online system.

Although using the three techniques enables an organisation to successfully implement e-business, Incom Egypt failed to do this, as they relied only on having the software and the technology adopted, while overlooking the importance of the three main aspects referred to in the paper. Therefore the proposed model is a systematic technique that can help managers achieve their goals, maximise their profits and strengthen the organisation's relationship with its customers.

References


Further reading


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