Accountability Centered Approach to Business Process Reengineering

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Abstract

In this paper, Accountability Centered Approach (ACA) is proposed for business process engineering. The ACA approach enables the designers and users to focus on the requirements and rationales of the process design, before settling into selecting and committing to a set of activities. The approach indicates iterative decomposition of accountability to appropriate levels and mapping of sub-accountabilities into activities. Appropriate activities are then selected to form network of activities which result in the design of the process. It differs from the traditional modeling approaches which often start and finish the process (re)design with tasks or activities. The major contribution of ACA for process design and engineering is in three folds: 1) providing a complete framework integrating accountability and activity in one method; 2) defining activities with specification of inter-relationships among activities, and information flow based on IDEF3 construct, constraint, object, and dependency; and 3) furnishing a verification method to validate process design or compare merits of different design alternatives. As an illustrative example, the Account Payable case of Ford Motor Company is illustrated by using this approach. The results demonstrate that the ACA approach offers clarity and provides users with opportunities to improve quality of design.

1. Introduction

Since Business Process Re-engineering (BPR) was first described and explained at the beginning of the decade in the work of the writers such as Davenport and Short [2], Hammer [10], and Harrington [13], an evolving stream of academic researches and industrial practices have been reported. The concept has attracted significant amount of attention among senior business executives, and even has led to a near "reengineering frenzy" [21]. Most of researchers attribute the BPR phenomenon to the demands from the industry where the global competition, economic downturn, the potential offered by emerging technologies are pushing organizations to fundamentally rethink their business process, one of their critical components, to gain competitive advantage [11] [16] [17] [21]. It is typically stressed that the process rethinking is conducted not being confined by existing organizational division units but transcending these divisional boundaries. Leading corporations and public institutions have increasingly utilized re-engineering to fundamentally reexamine the processes of delivering value to customers. The benefits reported include increases in productivity, service quality, and responsiveness to customers.

The body of publications in the course of BPR research varies from different aspects. Beside the investigation on general BPR philosophy [4] [5] [6] [7] [10] [11] [12] [14], implementation strategies [15] and empirical researches on the critical determinants of BPR project success [8] [18] [23], the clear methodology, effective techniques and tools for BPR project implementation are also a main stream of research. Increasingly, it has been recognized that the step-by-step approach to deal with the "how" question of business process reengineering is crucial for successful BPR.

The necessity of the systematic methodology for BPR was reasoned by Brian Fitzgerald and Ciaran [1], and a PBR methodology (or called BPR life cycle sometimes [19]) was devised. The proposed methodology contains six phases: Select process to be reengineered, Establish process team, Understand the current process, Develop vision of improved process, Identify actions needed to move to new process, and Negotiate/Execute plan to accomplish actions. By drawing on the experience of organization, the views of knowledgeable writers identified through an extensive literature review, and author's involvement in a major reengineering project within BT, Peter Keeble[16] proposed a BPR methodology which portrays thread of stages consisting mainly of initiating the program, scoping the program, redesigning processes, system and the structure of the organization, integrating processes and organization, and implementing. A most recent study is the work that had been done by William J. Kettinger et al. [22]. This study did a more complete survey on most of the methodologies, techniques and tools developed and used in BPR so far. Based on case-and field study approach, and descriptions of 25 existing BPR methodologies, a composite Stage-Activity framework for reengineering was derived. This framework was then mapped with

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commonly used BPR techniques and tools, and a guidance was given to BPR project practitioners as to how they could customize methodology and select techniques and tools. The study demonstrates the "how" aspect of BPR, by which we can get a whole picture of what have been done on the road of approach development for conducting BPR.

Although the published BPR methodologies differ in some aspects, the basic structure and some main stages (phases) such as "current process analysis(diagnosis)", "process redesign", are similar. These methodologies provide BPR practitioners with systematic methods to be followed, which act as anchoring framework defining the stages of work, the objectives of each stage, activities to be conducted and techniques and tools to be used in each stage, and some critical issues involved. Among a proliferation of methodologies, techniques and tools supporting BPR practice, our effort here may fall in the techniques level.

In this paper, Accountability Centered Approach (ACA) is proposed for business process engineering. Applying the systems design approach, the ACA approach focuses on the definition and ownership of business process requirements. After iterative decomposition of accountability to appropriate levels, the resulting sub-accountabilities are mapped into activities. Appropriate activities are then selected to form network of activities which result in the design of the process. The remainder of the paper is organized as follows. We start with a background to introduce the problem this proposed approach attend to address and the accountability concept which we consider a critical foundation in specifying the functional requirements of the business process. Then a technique for decomposing accountability and a mapping process of accountabilities into activities are introduced. As an application example, the Account Payable process redesign of Ford Motor Company is illustrated by using this approach in the following section. The last section is a brief conclusion.

2. Background

2.1. Problem definition

The unique contribution of BPR paradigm is its one primary focus on the business process – the process thinking [7] [11]. Definitions of business process vary. In this paper, a business process is defined as a structured set of interrelated measurable activities with assigned resources designated to produce desired outputs for one or more customers [3] [5] [9] [20]. Business process is widely used in the industry, in the manufacturing industries for the purpose of expense voucher reimbursement, purchasing, product development, order processing, and many others. It is also widely used in the service industry and in the government/public sectors for purposes such as issuing insurance policies, licensing, and new patient registration.

Business processes originated from the need to introduce consistency and repeatability in handling diverse business transactions. While there is a seemingly wide variety of customer requests and an equally wide network of activities that fulfill these requests, the underlying assumption is that there are similarities among the network and the activities themselves. Furthermore, by inducing patterns among the network of activities, processes can be established based on these patterns. With established process flows, seemingly unmanageable individual requests can be fulfilled by a set of structured network of activities in which:

(1) the fundamental building blocks of processes, activities, can be specified so that they are repeatable. The performance and completion criteria of each activity are independently measurable. Consequently, the needs of their ultimate customers can be met with some amount of certainty as long as the resources are available and conditions are met.

(2) the amount of dependency on the individual judgment is reduced. Hence, tasks can be performed by people with less qualification and training. Likewise, the training required for each task can be specified and completed more effectively.

(3) tasks can be configured and linked as customized networks of tasks geared toward specific requirements.

Historically, business processes were put together by extracting the repeated segments of activities. It was expected that by organizing the repetitive portions of activities, work could be better managed. This idea is intrinsic to production lines in the manufacturing sector. For years, manufacturing shop floors have enjoyed increased productivity by standardizing and organizing the work in orderly production flows. However, in reality, unlike producing manufacturing goods, the expected outcomes of non-manufacturing business processes generally cannot be easily standardized in forms similar to products. The kind of repetition seen in the production process are not as obvious and identifiable in the no manufacturing business process. The variety of customer needs has to be accommodated in the design of the business process. Servers are often asked to accommodate the differences in customers' requests by applying rules of exceptions. This exerts demands on the server's ability to make judgments. Thus, the quality of outcomes from a non-manufacturing business process are more susceptible to differences in the servers' capabilities, such as background, skill, and training.

The BPR principles tell us that:

- BPR should challenge the existing assumptions concerning the process of the organization system. One key to redesign is to question why a certain activity is required.
- BPR should be customer-driven, with value defined as satisfaction and, where possible, success [21].

- Four key elements of process (re)design should be considered: Customer requirements; The pattern of demand; Constraints; and Efficiency target [14].
- Business process re-engineering is expected to make dramatic improvements in performance [10] [11].

Most of BPR methodologies maintain the above points, emphasizing that the process (re)design decision-making must consider the purpose(function requirement) of the process under examination. In the context, we have two basic problem domains: The functional requirement domain and the (re)design domain. The function requirement domain describes the objective(purpose) to be assigned to the business process. It is a collection of specified requirements from the customer's perspective. The end result of business process engineering is the process design, or, activities organized as processes to fulfill the requirements specified. The (re)design domain in business process is the collection of activities required to meet the function requirements. However, the problem of how systematically to define and specify the function requirements of the business process, and map them into activities of it is not addressed in the published methodologies, and the existing techniques and tools do not deal with the problem well. There is the need for a "bridge" connecting the two problem domains which involve in the main stages of BPR methodologies. Moreover, efforts on characterizing and (re)designing process by focusing on the activities of processes from the beginning could cause business process reengineering several consequences:

(1) It tends to focus on existing activities. Companies starting re-engineering efforts invest a significant amount of efforts in documenting existing activities. As a result, the reason to process re-redesign, namely, quantum improvements in process performance, is often lost in the debate and clarification of existing processes. In some cases, organizations involved in the redesign efforts often opt to justify the existence of the current process because of their prestige, pride, resource ownership, or fear of risks. They may dig trenches and build fortresses instead of opening up possibilities for innovations.

(2) The original goals, objectives and intended results often are not obvious and may be lost during the analysis of existing activities. In addition, the alignment of activities with the intended results is often are ignored. Without clear alignment, prioritization of activities or allocation of resources in an objective fashion is difficult, if not impossible.

(3) While describing business process at the activity level, the employees may be led to confirm the process in forms and miss the intended objective. Inflexibility in adapting to special needs, changing requirements, and local circumstances, often seen as red tape or bureaucracy, could severely hamper customer satisfaction and/or introduce inefficient operations.

This proposed approach aims at filling the gap, focusing mainly on the transition and link between stages, especially between initiate stage, diagnosis stage and redesign stage according to the work of William J. Kettinger et al. [22].

It does not imply that the proposed approach serves as the substitute of the existing methods(techniques and tools). Rather, it functions combing them, such as brainstorming, IDEF modeling technique, simulation tools, etc..

2.2. Accountability

A business process is designed, delivered, operated, and maintained with the support of a human organization. The functional requirements of a business process is normally assigned or delegated to a particular person or organization. In order to highlight the human involvement and make the responsibility explicit, we adopt the word "accountability" to represent the requirements and their accompanying ownership. In a dictionary, accountability is defined as, "liable to be called to account." It is the extent to which one is responsible to deliver the results. The ownership of the responsibility of applying resources and authority to deliver the results, or to meet requirements, is called accountability. By viewing business process through accountabilities, the process designers can benefit in several ways:

(1) During radical redesign of the process, it is important that the responsible parties involved focus on the requirements and the users are open-minded enough to examine all possible alternatives.

(2) It matches the allocation of resources with the ownership of delivering the results.

(3) The completion of a process is more easily and better judged.

(4) It relates more effectively to resource consumption and value added in each process step.

(5) It clarifies the expectations of the process from the customer's perspective.

(6) It serves as a device for process control and integration.

To accomplish these objectives, it is important that the attributes of accountability in business process are also clearly specified. They are:

Ownership: Clearly, the person, the office, or the organization who is responsible for delivering the results of the process is the owner of the accountability. If there are multiple persons responsible, the ownership can be shared by the group. It is important to note that the ownership of the accountability involves not only the delivering of the results, but also the responsibility of being accountable for the budget or the resource designated for the particular accountability.

Dependencies: These are conditions deemed outside of the scope of the process but critical to the completion of the process. By making the dependencies explicitly known in the business process design, the purpose is to better manage risks and expectation. However, the number of dependencies has to be minimized so that the

business processes will not be subject to excess external conditions and become too difficult to complete.

Completion Criteria: These are factors that are used to judge the completion of the process. To be effective, the criteria needs to be tangible and measurable so that completion of the process can be determined without any ambiguity.

Budget: This is the amount of resources allocated to the particular accountability. Often, it includes human resources, supporting materials, expense items, and/or equipment. Often, they can be quantified to dollar amounts. As for human resources, types of qualification and person hours allocated are also important considerations in specifying the accountability.

3. Accountability centered approach (ACA)

3.1 General idea

The first step of the design process decomposes the function requirement and finds suitable design parameters that can deliver the requirements and comply with the constraints. In ACA, hierarchical decomposition is applied here to decompose accountability (A) into sub-accountabilities (Ai). Commonly, several iterations are required to decompose the accountabilities to a manageable granularity for which one can find a suitable activity to satisfy any particular sub-sub-sub-accountability. Two rules need to be followed during the decomposition. One is the completeness rule, the sum of children accountabilities needs to equal to the parent accountability. This ensures that the accountability will not be lost or rendered into incompleteness when the sub-accountabilities are fulfilled. The completeness rule can be expressed by the following formula:

$$A_i = \sum_j A_{ij},\ i = 1,..., n,$$

where A_{ij} is the jth sub-accountability of accountability Ai. The other rule is the independent rule, the overlapping of sub-accountabilities should be minimized to avoid duplication of efforts, confusion of responsibilities, and waste of resources; that is,

$$A_i \cap A_j = \varnothing,\ i \neq j$$

Decomposition is a recursive process. It proceeds until appropriate activities can be identified to fulfill the particular sub-accountability. Often, there is more than one option to satisfy the sub-accountability. In this case, potential activities can be screened by assessing if required resources are within the budget, and if they are compatible with other activities, if the risks and other factors are pertinent to the success of the process.

To illustrate the ACA approach, let's consider a process that we often use in our daily life, the process normally used at the point of sale in the grocery stores. The accountability traditionally rests on the salesperson who stands at the checkout workstation. This accountability can be decomposed to acknowledge the transactions for each item: collecting the money and packaging the groceries into bags. All these sub-accountabilities are distinctly independent in normal operations and they, as a whole, will encompass the total accountability of the selling process. Assuming the decomposition is satisfactory, activities need to be identified. In the case of finding appropriate activities for collecting money, there are many options; using a credit card, tendering cash, accepting checks, keeping a debit book, and collecting when the groceries are delivered. However, some of them may not be applicable or desirable. For instance, in a country store, the owner may prefer not to pay the bank charge for using credit cards and in neighborhoods where bad checks are common, receiving checks may incur additional costs resulting from uncollectable checks and the need to verify the checks. Here, the attributes attached to the accountability are activated to screen the desirable activities, by applying constraints of budgets (e.g., time allocated and available equipment for collecting money) and completion criteria (e.g., better than 98% of receivables are received within a week).

3.2. Major stages of the approach for business process design (BPD)

Figure 1 summarizes the stages of performing BPD using the Accountability-centered Approach. For some of the stages, underlying guidelines or principles are included to assist the execution of each step.

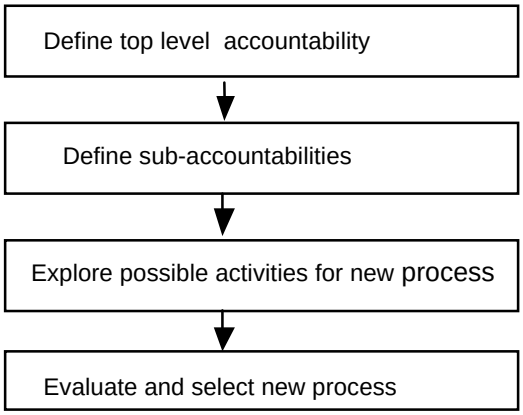

Fig. 1. Stages of using ACA approach for business process design

Define top level accountability: The top level accountability specifies the ultimate goal expected to be achieved. In general, the reengineering team can obtain this important information such as what the deliverables should be and who should be responsible for the delivery of results from the senior managers or directors.

Define sub-accountabilities: With the identified top level accountability, the accountability can be decomposed into

sub-accountabilities if necessary. To maintain the integrity of accountability, the process design team should use the rule of completeness and the rule of independence. The decomposition of accountability may be taken iteratively until the desirable level of accountability is reached (Figure 2). Subsequently for each sub-accountability, all possible activities that can be adopted to support the accountability are defined.

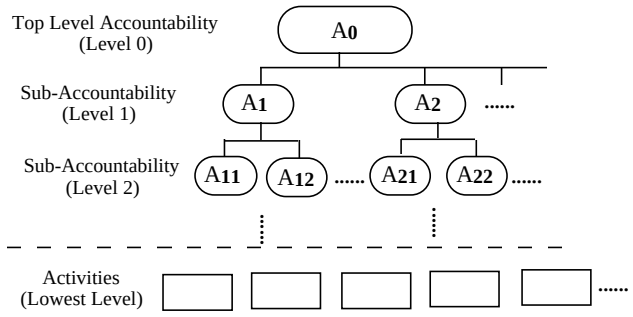

Fig. 2. The decomposition of accountability

Explore possible activities for new process: Based on the sub-accountabilities defined, alternative activities for each lowest level sub-accountability need to be explored. To generate activity alternatives, Designer's creativity and a radical approach are required. Brainstorming is a useful technique. The activities supporting each lowest level sub-accountabilities can be something that has never been considered or adopted as long as it helps to achieve the accountability. Designers should make sure that alternative activities satisfy accountabilities.

Figure 3 shows the mapping of two alternatives with the accountabilities. For alternative 1, activities 1.1 and 1.2 support the lowest level accountability l(LLA1), activity 1.3 supports LLA2, and activities 1.4 and 1.5 support LLA3. For alternative 2, activities 2.1 and 2.2 support LLA1, activities 2.3 and 2.4 support LLA2 while activities 2.5 and 2.6 support LLA3. Any one of the activities in an alternative should support one and only one sub-accountability.

Usually, designers may first create as many would-be alternative activities as possible without consideration of implementation constraints. Then, all the would-be alternative activities are screened by setting constraints and possible activities are obtained.

New process alternatives can be built based on explored possible activities by means of modeling techniques and tools, such as IDEF, Petri Nets, Affinity Diagramming etc..

Evaluate and select New process: Further, all alternative processes are evaluated and the best alternative would be selected as the new process to be implemented. Evaluation should be focused on the performance of alternative processes that can be measured by metrics such as cost, process cycle time, productivity, and quality of the output, etc.. Techniques like Activity-based costing, Auditing, Focus group, Value analysis, and Simulation method, can be utilized in the step. Generally, simulation tools, such as *Witness*, *Slam II*, *LGI Process*, etc. can be chosen for the purpose.

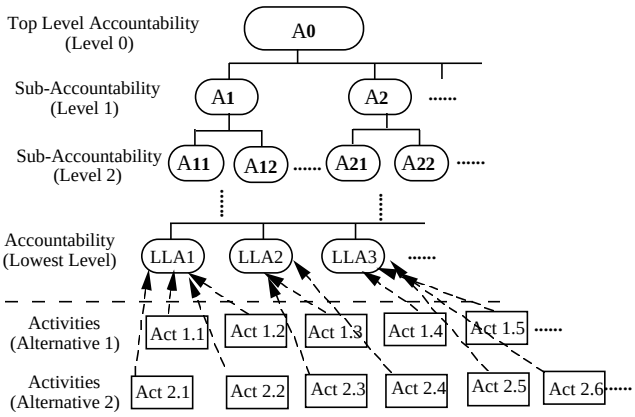

Fig. 3. The mapping between activities and accountabilities

4. Example - using ACA to re-design an account payable process

4.1 Before-redesign process description

As an application example, the Account Payable process of Ford Motor Company is illustrated below [10].

- Purchasing Department send a purchase order (PO) copy to Accounts Payable Department when it sent an order to a vendor;
- Then, when the warehouse received the goods from the vendor, the staff of warehouse would send a receiving document to the Accounts Payable Department. At the same time, the vendor also sent an invoice to the Accounts Payable Department to ask for payment;
- After receiving these three documents, the accounts payable clerk would match these documents. If they are matched, the staff would issue payment to vendor. Otherwise, the case would be held up and the accounts payable clerk would generate documents and investigate the discrepancy.
- In some cases, the amount of goods received was greater or smaller than the amount ordered, which would cause discrepancy among the PO, receiving document, and invoice. To deal with these cases, the accounts payable clerk would send a document to the vendor to ask her to take back the excess items or to send missing items;
- If the vendor over-shipped items, the accounts payable clerk would prepare and send a check to the

vendor after the vendor took back the excessive goods; if there were missing items, the accounts payable clerk would wait until the vendor sent the missing items and the Receiving Yard sent receiving document to the Accounts Payable Department. Then, the accounts payable clerk would prepare payment to the vendor.

- Apart from these cases, split shipping could also lead to mismatching among documents. In this case, the accounts payable clerk would hold the case until all shipments were received and then try to match all documents involved in the case again. If they matched, the accounts payable clerk would prepare and send a check to the vendor. Otherwise, they would investigate the case again.
- Another source of discrepancy is conflicting prices among documents. In this case, the accounts payable clerk would send an investigation document to Purchasing Department to ask the staff to confirm the price with the vendor;
- After Purchasing Department send back the confirmed price of goods to Accounts Payable Department, the accounts payable clerk would prepare payment and send it to the vendor.

In the pre-redesigned process, each case took a long time to complete, with most of the processing time spent in the investigation of discrepancy and transmission of documents.

4.2 Process redesign

With information about the original process, using ACA approach, the first step is to identify the accountability of the process that can help to achieve the company's objective.

Define top-level accountability: From the company's point of view, as long as the product received is the product that has been ordered, the payment can be made to vendors. The accountability of the accounts payable process is identified as "Pay correct amount to supplier for the correct material received". From this accountability, we should be aware of several points: (1) "pay," means Ford should make the payment; (2) "correct amount" implies the amount to be paid should be correct. Ford would only pay the exact amount that it needs to pay, no more or less, and (3) "for the correct material received" refers to the material ordered by the Purchasing Department. In other words, payment should only be made for the material that Ford has ordered and received.

Define sub-accountabilities: After defining the accountability of the process and understanding the points implied, we can divide the accountability into first level sub-accountabilities. The first level sub-accountabilities can refer to the points implied in the top level accountability. In this sense, the first level sub-accountabilities that support the top level accountability would be "Ensure material received have been ordered," "Ensure the quantity and quality of goods are satisfactory," and "Ensure the correct payment is made" (Figure 4). The sequence of these sub-accountabilities is first to make sure the company would accept the goods that it has ordered. Items not ordered would not be accepted or paid for. Then, it should prepare the payment according to what has been ordered and received. Finally, it should ensure the correct payment is made to the vendor.

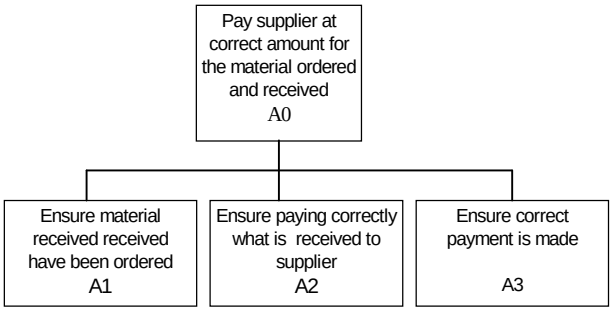

Fig. 4. Accountability decomposition

The first level sub-accountabilities can also be decomposed into lower levels until the accountabilities are in a manageable size. For Ford's accounts payable process, the first level sub-accountability of "Ensure material received have been ordered" can be divided into the second level sub-accountabilities which are "Get information about the material ordered," "Get information about material received," and "Verify material received against material ordered."

The first level sub-accountability of "Ensure the quantity and quality are satisfactory" can be divided into the second level sub-accountabilities of "Check Quantity" and "Check Quality." The third first level sub-accountability is "Ensure the correct payment is made." Since the accountability can be completed and managed by a single person and the required time for achieving this accountability is short, it does not need to be divided into the second level sub-accountability. At this stage, all accountabilities for Ford's accounts payable process have been identified and they can be supported by activities. The accountability hierarchy after decomposition is shown in Figure 5.

Explore possible activities: With the lowest level accountabilities defined, would-be alternative activities for each sub-accountability can be explored based on the designer's experience, knowledge, and creativity. The following table (table 1) is a list of suggested would-be

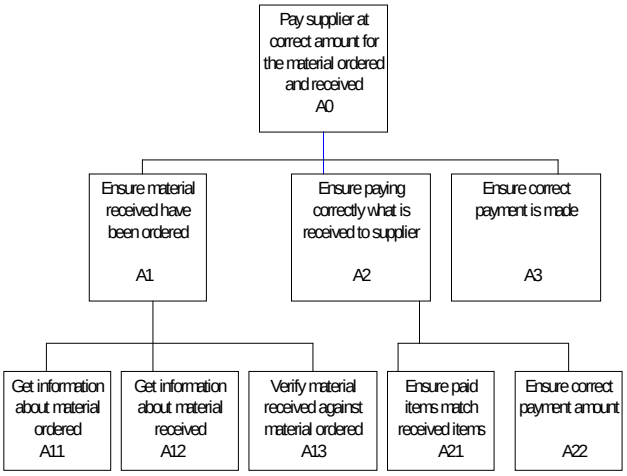

Fig. 5. Sub-accountability decomposition

activities for each sub-accountability. This list is by no means a complete one, it only serves as an example.

After defining the alternatives, the company can set constraints to eliminate the impossible alternatives. For example, the constraints to accomplish the accountability of "Pay supplier correct amount for materials ordered and received" can be:

(1) Human Resources -- e.g., there is only one office assistant in each department.

(2) Other conditions -- the technology of electronic banking is not mature enough to allow organizations to make payments through computer. It is difficult to transmit large amounts of data at one time through e-mail. Moreover, the company cannot preset the e-mail format for transmitting information that has a different format, such as the purchase order and receiving information.

Based on the constraints identified above, some of the alternatives can be eliminated. The eliminated alternatives include asking an office assistant to transmit a paper document, sending information through e-mail, and instructing the computer to transfer the payment amount to vendor automatically. In this situation, the alternatives left are: transmitting information mainly through phone calls, and recording, exchanging and retrieving information through a computer and database. Among the alternatives left, there are a number of combinations for supporting the accountabilities. For example, the Purchasing Department can inform the accounts payable clerk about the purchase information through telephone, while the Receiving Department can transmit the receiving information by using a centralized database. **Evaluate and select process:** In the example, we only illustrate the application of simulation method in evaluation and process selection. Alternative processes based on alternative activities can be simulated and results are compared for the selection of the process which exhibits the best performance.

Table 1. Bottom-end accountability and activities

Accountability	Would-be alternative activities
Get information about the material ordered (A11)	1.Transmit the purchase order copy by an office assistant from Purchasing Department (PD). 2. PD sends the purchase order information to the Accounts Payable Department (APD) through e-mail. 3. PD calls APD through telephone. 4. PD enters the purchase order information into a centralized database which can be accessed by APD.
Get information about material received (A12)	1. Transmit the receiving document by an office assistant from Receiving Department (RD) to APD. 2. RD sends the receiving information to APD through e-mail. 3. RD informs APD about the receiving information through phone call. 4. RD enters the receiving information into information system for APD to access.
Verify materials received against materials ordered (A13)	1. Check the information obtained from PD and RD through telephone conversation. 2. RD checks the material received in database.
Ensure paid items match received items (A21)	1. Check manually. 2. Check automatically by computer.
Ensure correct payment amount (A22)	1. Check the paper document to confirm the amount to be paid and calculate the total amount by calculator. 2. Check by computer.
Ensure the correct payment is made (A3)	1. Issue check by accounts payable clerk and send it to vendor through mail. 2. Instruct computer to send the payment amount to the vendor using electronic banking.

The simulation tool, *LGI Process*, is used. *LGI Process* is a computer aided tool that integrates IDEF3 process modeling and simulation technique for design, animation, documentation and simulation. It provides process modeling capability and allows the process designer to simulate for evaluating the performance of alternatives once the process model is established.

As an illustrative simulation example, two processes for the accountability “Pay supplier at correct amount for the

material ordered and received" was built based on the possible activities explored in the previous step. The two processes are illustrated in Fig.6 and Fig7. respectively. Activity information set-up window in LGI Process is shown in Fig. 8. In this example, we only focus on *process time*. For process 1 and process 2, we set the inter-arrival time of job (transaction) following exponential distribution with a mean=300 min., and process time of each activity following normal distribution. For example, the process time of activity "Receive phone call from PD & record information" is set as normal distribution *N(8,2)*.

According simulation statistics(run time: 14400 minutes), process performance is summarized in Table 2. From the Table, we can see that the average process time for one transaction of process 1 is greater than that of process 2, the difference being about 97 minutes. Process 2 is better than process1 in terms of process time.

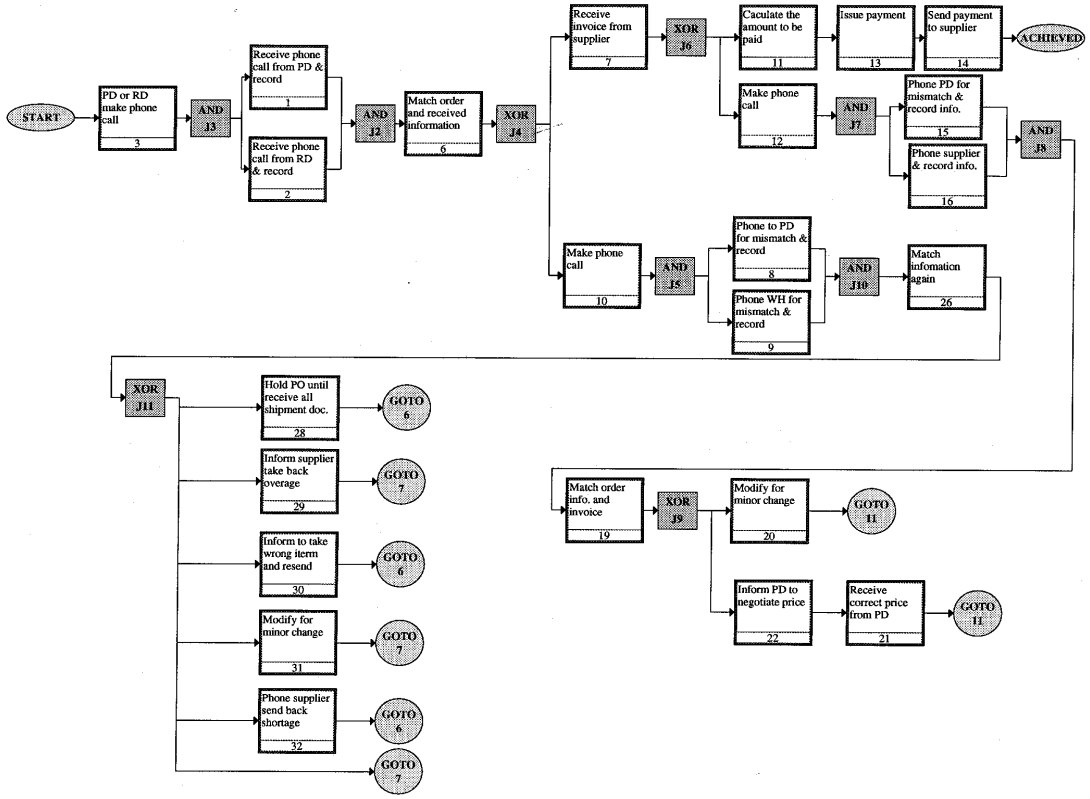

Fig. 6. Process redesign 1 of account payable process

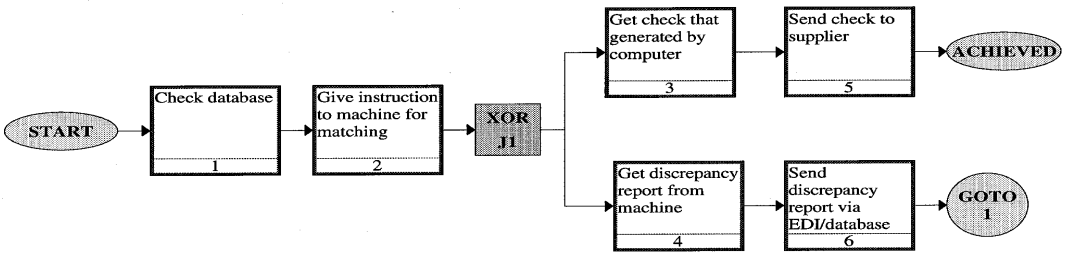

Fig.7. Process redesign 2 of account payable process

Table 2. Simulation result of the two process alternatives

Simulation replications	Process 1		Process 2	
	No. of transactions completed	Average process time (min.)	No. of transactions completed	Average process time (min.)
1	45	120.41	53	22.63
2	56	114.08	48	23.05
3	51	119.71	55	21.57
4	48	123.13	32	22.84
5	45	122.74	53	22.61
Average	49	120	48	22.54

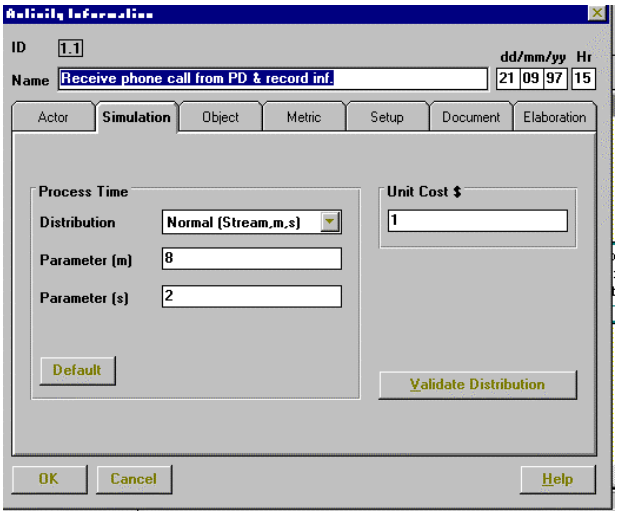

Fig. 8. Activity information set-up window of LGI Process

5. Conclusion

Business processes are often complex and expensive to operate. In the meantime, many of them are critical to the performance of an organization. This paper advocates a design approach to business process reengineering. It starts from clear identification of process accountability. Based on decomposition of accountability, low level sub-accountabilities can then be mapped to activities. Networks of activities can then be organized to test different process design options. A testing and verification method with simulation tool is proposed to ensure overall performance is met and the process is operating within the constraints.

It differs from the traditional modeling approaches which often start and finish the process (re)design with tasks or activities. The ACA approach enables the designers and users to focus on the requirements and rationales of designing the process, before settling into selecting and committing to a set of activities. By applying the design approach, designers can define business process without ambiguity, take a snap shot of a particular event in the process, describe the accountability of participants and replay event streams in the process flow, and the resulting process design can best meet the functional requirements articulated by the customers. The Account Payable case of Ford Motor Company demonstrate that the ACA approach offers clarity and provides users with opportunities to directly assess the value added aspects of their processes.

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