Why Do We Need Business Process Support?
Balancing Specialization and Generalization with BPS Systems

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Abstract. Businesses face a changing environment with an uncertain future. They need to specialize their business processes in order to become successful in the short term. This specialization, however, becomes a problem in the long term, when conditions change. A BPS system could help the business to achieve and maintain the balance between specialization and generalization.

1 Introduction

The goals and activities defined by business processes can be seen as motivated by the business's wish to survive in a hostile environment. In this view, business processes regulate the relationships of the business with its internal and external stakeholders [5]. Business processes are often the result of a fit between the needs and capabilities of the internal stakeholders of the business and the opportunities and threats the business identifies in its environment. Changes within the business and in the internal and external environmental conditions disrupt this fit and render business processes inadequate to current conditions. These changes in environmental conditions force the business to change its processes ever so often. These changes could involve an attempt to change the business processes or the conditions that render the processes inadequate or both at the same time.

Business processes also need to be stable. If they change too often they disrupt the business's operational ability and confuse the stakeholders who quickly lose confidence in the business. Moreover, business processes are part of the identity of the business, its very own way of doing things [4]. Changing business processes means changing this identity. This is extremely hard to do, for businesses and people alike. The ever changing environment, however, doesn't give many options to business's but to change. It could be said that what business's want to do least is to change but they don't have much choices.

A continuous reevaluation of processes and conditions is, therefore, needed but some stability of both is also necessary.

A business process support (BPS) [1] system, therefore, should help the business to balance both change and stability. Two extreme positions of what a BPS system should be like are the following:

- As a big brother specifying the activities that need to be performed in a process and preventing people from deviating from them
- As an advisor helping people to behave responsibly (i.e. to know what is the advisable process for the conditions at hand (select a relevant process template) and advising them on the risks involved in deviating from the defined process).

In practice a BPS system will integrate these two positions. To which of these extremes it resembles more depends on the nature of the business, most notably the way it sees itself and its environment.

2 What can be learned from BPR about BPS systems?

Hammer and Champy [2] say that traditional businesses chopped up the work they performed into independent activities that could be performed with no thinking. Each activity was performed by a specialist who was trained to do only this activity. The result was that even simple things were chopped into small activities that needed to be pasted together. Much of the work of middle management was performed in order to paste these activities together into a meaningful whole delivering value to the customer and controlling the people who perform these activities so that they don't deviate from them.

The result, according to Hammer and Champy, were businesses that were obsessed with pasting and controlling their activities and therefore were internally focused rather than looking externally toward their customers.

The cure, prescribed by Hammer and Champy was to see the whole rather than the parts. They defined the whole as the value that the business provides to customers; the parts being the activities necessary for providing this value. Only the strictly necessary activities for the provision of the value were to be performed in the reengineered process. The structure adopted by the business was supposed to be a consequence of the reengineered process. Once the process was known, the necessary structure that should support this process was to be defined.

This extreme prescription is recognized, even by Hammer, to have saved businesses by destroying them [3]. We can identify at least three reasons for this:

- The total focus on customer value ignores the business's need to get value such as financial contributions from the customer so that the business doesn't disintegrate [5].
- A business process needs to protect the business from its customers at the same time that it delivers value to them.
- Structure doesn't simply flow from process. Mintzberg et al. [4] see this as "Structure follows strategy…as the left foot follows the right." Businesses could not simply invent a new structure that corresponds to the reengineered process. Existing businesses are not startups that begin with a clean sheet of paper. Startups, by the way, will soon have a structure that prevents them from changing too.

Together with the rhetoric about reengineering business's that failed to materialize, Hammer and Champy had a few brilliant insights. We list two of them below.

Hammer and Champy's first insight is that traditional business processes were full of controls whose objective was to ensure that the "process was not abused." These

controls are directly related to the need of the business to get a financial return for its services and to protect itself from threatening customers. In Hammer and Champy's, view, however, many of these controls ended up costing more than the potential losses the business could incur from the abuses. They thus specify that business processes should be designed with the least number of controls. Only the essential ones are to be kept. Or even better, a new process should be defined that eliminates most of the controls even if this means taking the risk of some abuse. As an example, Hammer and Champy cite automobile insurance companies that don't check claims that involve only small amounts of money. In order to limit the risk from repair shops overbilling, these insurance companies perform a periodic check of each repair shop's pattern of repairs. When a pattern doesn't fit the standard pattern, the insurance company may suspect the repair shop of abuse. Using a BPS system enables the insurance company to identify these patterns and therefore reduce the need for a business process with many controls that specify many specialized activities.

Hammer and Champy second insight was that information systems should be used to run business processes by generalists rather than specialists. A similar viewpoint was stated by Gerald and Daniela Weinberg in the 1970s when they argued that [6]: "People are specialists only because our machines are thus far so limited; With properly specialized machines, people could become generalists once more, leaving the specialist strategy where it belongs-with the machines."

The Weinbergs of course, describe an ideal situation that today's technology cannot satisfy. We can, for example, only dream about everybody doing a little bit of surgery and a little bit of bookkeeping, and a little bit of train driving. Current BPS systems don't come close to giving us such power. In many business processes, however, it is possible to introduce BPS systems that help people perform several activities rather than only one.

3 Balancing specialization and generalization

Some business processes are performed in conditions that are fairly well known and their result needs to be guaranteed because even one or few misses are considered unacceptable. This is, for example, the case of mission critical processes, assembly chain, health care processes etc. In these cases the process is usually known with precision and the actual activities performed should strictly follow the process. We call this kind of process a hard normative process. The activities to be performed and their order depend little or not at all on the opinions of the people running the process. Indeed, the process is designed so that it is independent of such opinions so that the result is continuously guaranteed, regardless of the people who perform the process.

Many other processes, an order fulfillment process for example, are somewhat different. The activities to be performed and their order are less rigidly prescribed than those in the hard normative process. Some activities may be omitted (such as credit checking) and the order can be changed (if for example we want to trade off the rapidity with which a sale is performed at the expense of the security of checking the customer's credit worthiness. Of course, some risks are taken in each one of these alternatives. If time is taken to check the credit history of the customer, it may make

the process run longer and the customer may purchase the goods from another supplier. If on the other hand the rapidity is privileged, the business may end up selling the goods to a customer who may default on the payment. Many other conditions apply for even this simple example. For example, the business may have an ongoing relation with the customer, in which case it may forego credit checking altogether. Credit checking may be deferred and the sale approved with the condition that the credit check proves positive, rather than waiting idle for the credit checking to be processed. We call this kind of processes soft normative processes.

Soft normative processes may have different versions as defined by Hammer and Champy. Each version has a set of advantages and risks to it and is triggered by a different set of conditions. However, neither all the options, nor all their associated advantages and risks, nor all the conditions are specifiable in advance, for example when the requirements for the BPS system are defined.

When performing soft normative processes People need information about the possible activities to perform for a given business event so that they don't need to be specialists assigned to just one process. For example, a person assigned to follow through on a customer's insurance claim is already specialized in this one process even though she may not be specialized in each of the individual activities comprising the process.

People need advice on what version of the process to trigger in response to the conditions that they believe are present. They could use information about the potential risks they are incurring if they apply a version that has less or more controls.

Detailed modeling of a business process as proposed in [1] may be needed to identify potential risks, advantages and conditions so that the information could be presented to people applying the process. Some of these risks may have disappeared due to changes in the business and/or its environment. Some others may have appeared since the process was last updated. Hence, detailed modeling of the business process is only a prerequisite for its redesign.

The problems faced by people and businesses alike are that specialists cannot instantly become generalists, generalists cannot instantly become specialists, and for both generalists and specialists risks and opportunities are not easy to differentiate,

A business with a specialist organization cannot transition effortlessly and in a short time into a generalist organization. Generalists and specialists differ in their outlook on the world, in their education and training.

Generalists, in principle, cannot perform as well as specialists in their area of specialty. They may not have the knowledge that the specialists have internalized. On the other hand, generalists, again in principle, can address a larger range of problems than specialists because they have a more global view. Generalists can therefore, perform reasonably well in several areas but a specialist will outperform them in each of these areas.

Thus, total redesign of a business process is often not a viable option. A BPS system may be used to help the business that performs soft normative processes to transition from a specialized organization to a more generalized one. In summary, a BPS system should help a business to resolve the competing requirements for specialization and generalization as they are described in [6].

3 Ideas for the Requirements of a BPS System

For the support of hard normative processes, the BPS system is used to enforce the adherence of the performed activities to those specified in the business process. It should rather be viewed as the "Big Brother" extreme we have defined in the introduction.

For the support of soft normative processes where a perfect assessment of current conditions is difficult or impossible to achieve, the BPS system may be better seen as a guide doing its best to advise the business about what processes to perform and how to perform these processes.

The following list gives some ideas about the role of such a BPS system:

- A BPS system may help a person who performs a process to not specialize in each of the activities. However, some specialization is necessary at least in the specific process itself.
- The help provided by the BPS system could be in the form of the outcome expected from the process, the different versions of the process and the conditions under which each version is applicable. These conditions can have the form of an assessment of risks and advantages.
- A BPS system can provide generalists with some of the information that a specialists internalizes as knowledge. It cannot, however, provide all of this information. Moreover, simply providing the information (even all of it) will not result in the same efficiency. The BPS system could therefore be used to link generalists with specialists when and where these specialists are needed.
- A BPS system can be used to help specialists acquire a more generalized view of a process or set of processes. It could be used to transition these specialists into generalists.

The ideas in the list above show that BPS systems can be seen as identical to knowledge management systems. In essence, a BPS system could enable the business as a whole to adopt a mixture of generalized and specialized processes and structure that should help it to adapt the unknown conditions of the future.

References

1. Ian Alexander, Ilia Bider, Gil Regev. REBPS'03: Motivation, Objectives and Overview, *CAISE'03 Workshops Proceedings*, Klagenfurt, 2003.
2. Hammer, M., and Champy, J. *Reengineering the Corporation – A Manifesto for Business Revolution,* Nicholas Brealey Publishing, London, 1994.
3. Hammer, M., *Beyond Reengineering*, HarperCollins, New York, 1996.
4. Henry Mintzberg, Bruce Ahlstrand, Joseph Lampel. *Strategy Safary – The complete guide through the wilds of strategic management*, Prentice Hall, London, 1998.
5. Gil Regev and Alain Wegmann. *Regulation Based Linking of Strategic Goals and Business Processes, Workshop on Goal-Oriented Business Process Modeling,* London, September 2002.
6. Weinberg, D. and Weinberg, G. M., *General Principles of Systems Design*, Dorset House, New York, 1988.