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8-15-1997

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Introduction

Corporate restructuring, referred to in many circles as "Business Process Re-engineering" (BPR), "Enterprise Engineering", or "Business Engineering" has become a significant management concern of the 1990's. Hammer and Champy[2] define it as "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed". BPR requires that enterprises take a comprehensive review of their entire existing operation and redesign it in a way that uses new technology. This has become an imperative for western business, not just because of challenges mounted from Asia (Japan, Korea, Singapore, etc.) nor due to the changing face of the third world consumer markets, but because time has come for it to change. Business Process Re-engineering is the means to effect such change.

BPR Methodologies: What is Available?

A number of "what is" texts and articles which ostensibly instruct the interested reader on the need for BPR and the philosophies behind it exist. The most influential of these are written by Hammer and Champy [2], Champy and Hammer [1], Davenport [2]and Johansson et al.[5]. The popularity of these books have created a major interest in the business community for the topic. There has been however a great paucity of high quality "how to" texts and techniques which instruct the would be practitioner in the process of successfully completing a BPR program. The scrutiny of existing BPR literature therefore, leads one to conclude that whilst they enable the reader to understand the meaning and the importance of re-engineering, and teach a handful of principles underpinning BPR, they do not describe how one can, in practice, redesign a business according to those principles. In response, Jacobson et al. [4] have recently suggested that BPR's success rate could be dramatically increased if methods existed that offered more concrete guidance. A similar point has been made by Martin [7]. Both Martin and Jacobson et al., and more recently Taylor [6] have attempted to provide such concrete guidance. Object technology has been introduced as a very effective means to this end.

In terms of the risk items listed above, most methods on BPR tackle the organisational and conceptual views emphasising management of change, whilst Jacobson, Martin and Taylor tackle the methodology, utilising an object oriented approach that is rooted in the reductionist, scientific method and concentrates upon the individual activities to be conducted in the re-design process to the detriment of the soft, organisational and humanistic issues so central to the success of BPR. Neither provides a well defined integration interface into the supporting technologies that are deemed to underpin such ability to change in the first place.

A Systemic Object Oriented Approach

What is really required is a unified approach, which should provide concrete analysis methods, and a clear interface into information technology (e.g. via Business Objects) **within** a framework which addresses the soft, humanist and organisational factors. This is what this tutorial - based on the material included in a forthcoming book by the presenter - **uniquely** sets out to do. At present there is no method on the market that attempts to fill this need. Our book, and therefore this tutorial proposes to present a coherent

methodology (called State Behaviour Modelling or SBM) to do so. Additionally this tutorial will present its material in concert with the philosophies, provisions and technologies presented as part of the OPEN framework. This has the advantage of providing the user with a well defined and integrated approach to all likely subsequent information systems development that may be required to implement the new business system using a mature, well supported object oriented software engineering process architecture.

This tutorial is presented in seven sections.

In the first section, the concept of business and its relationship with economics and management, particularly management of risk is explored. Using such framework we will then briefly explore the history of modern, western style of economics and management sciences and practice, particularly in view of the resources, technologies and the environments that have together produced the current business paradigm. We will then put forth evidence that such environments, technologies and resources are no longer a part of current economic reality and as such do not form a valid foundation for future (or even current) business planning and management. As such, we call for a need to redesign current business processes.

In section two, we introduce the concept of corporate restructuring or Business Process Re-engineering and provide a historical tour of the concept. We then explore some successful and some not so successful cases of practicing BPR. Concentrating on these cases and drawing conclusions, we provide a discussion of the reasons contributing to BPR failure. A need for a systemic, holistic, human centred approach to BPR is then advocated.

In section three, we continue the discussion for the need for BPR to be human centred and systemic. As such we introduce some primary concepts of General Systems Theory as a foundation for a systemic study of business. Using this framework we establish a strong link between business processes and the systems view of the world, thus introducing business as a "Human Activity System".

Section four introduces the structures, concepts and attributes necessary for a successful design of any system and relate these to the design of "Business Systems" as a special case. The central theme here is the idea of modelling and need for a powerful and rich modelling paradigm to underpin any design activity, such as those required in BPR.

In section five, we continue by introducing object orientation as a paradigm that can fulfil many of the requirements made of a powerful modelling paradigm. We introduce the concept of Business objects and those of cognitive and conceptual model proximity. We then provide reasoning for the inclusion of the human dimension as part of such object oriented enterprise modelling process.

Section six continues from section five and having established a set of criteria for successful BPR which includes OO, we introduce a systemic approach which is object oriented yet caters for all the soft/humanistic aspects needed to be considered in doing BPR.

In section seven, we go beyond enterprise modelling (where a lot of others finish off) and actually discuss and explore the linkages between corporate restructuring and BPR on the one hand and the enabling Information Technologies on the other. We provide guidelines on the adoption, incorporation and production of object oriented business frameworks, patterns and objects as part of the implementation of the newly designed business process. We will also consider the question of change management and corporate disruption. We conclude by examining the idea that there is on the horizon a merging of the two disciplines of software engineering and Business process reengineering.

It should be emphasised that these sections are not of equal length. During this tutorial, emphasis is put on the contents of sections four to seven, with the earlier mentioned material providing an introductory background.

References:

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