IMPLICATIONS OF RESOURCE PLANNING, INNOVATION AND LEARNING FOR WORK PROCESSES AND PERFORMANCE MANAGEMENT

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Abstract

This paper focuses on the implementation issues associated with the innovation of enterprise resource planning (ERP) to achieve innovative large-scale change in organisations. If innovation and learning become part of a firm's leading performance indicators, this is sure to have implications for performance management (PM).

Keywords: Innovation management, Change management, Resource planning, Performance management

JEL Classification: L20, M12, M50

1. Introduction

Innovation and change management play an increasingly important role in sustaining the leading competitiveness for organisations in times of rapid change and increased competition. A number of issues arise. There is a need to address how both local and global issues are influenced by the implementation of a common enterprise-wide information technology (IT) application. In relation to technology and processes many companies model the organisation and its processes, creating new process designs on an ongoing basis.

Enterprise resource planning (ERP) systems have been progressively developed over last years. The continual change in organisations and their environments has resulted in complex technical organisational, cultural and political issues that have made the integration process a very challenging task. The paper focuses on the role of technology as either a driver or enabler for ERP induced change.

The consequences of innovation for performance management (PM) will first consider the implications for work processes and the management of these processes in general. We will deduce the consequences will be for PM.

2. Organisational innovation and resource planning

Enterprise resource planning (ERP) is an IT solution to provide a centralised IT application for business processes and functions within a company or group of companies. ERP is a software solution that integrates information and business processes to enable information entered once into the system to be shared

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throughout an organisation. While ERP had its origins in manufacturing and production planning systems, the scope of ERP is to include other "back-office" functions such as financial management, asset management, order management and human resources management. The range of functionality of ERP systems has further expanded in recent years to include more applications, such as marketing automation, electronic commerce, sales and supply chain systems.

It is not possible to think of an ERP system without a sophisticated IT infrastructure. ERP is an expression of the inseparability of business and IT. The original Systems, Applications, and Products in Data Processing (SAP) concept was to provide customers the ability to interact with a common corporate database for a comprehensive range of applications. Gradually, the applications have been assembled and today many corporations, including IBM and Microsoft, are using SAP products to run their own businesses. It attempts to integrate IT with business process re-engineering (Figure 1). SAP provides sample business objects and business processes that aims to provide the best business practices found in successful companies and that can either be used "as is" or extended and customised by any company to suit its specific needs.

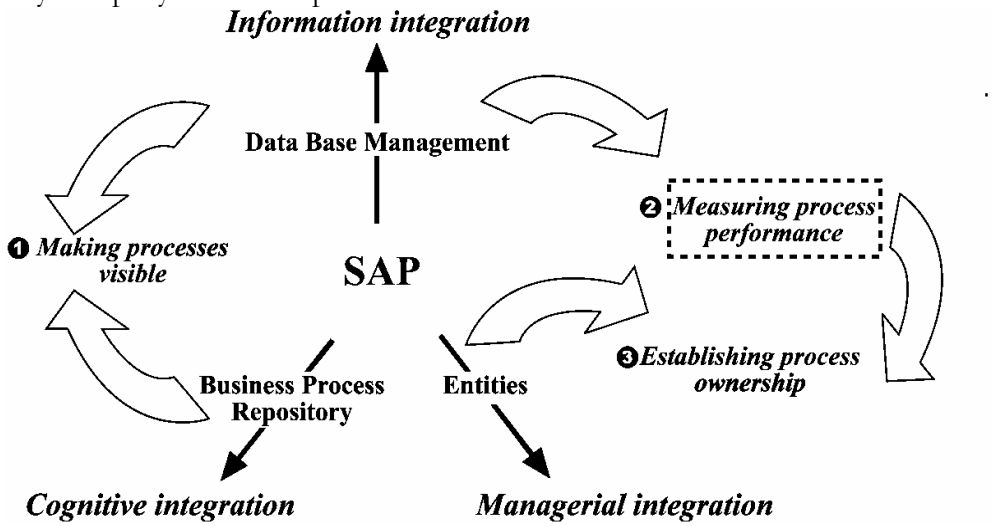

Figure 1 - SAP levels of integration

Source: Rodney McAdam and Alan Galloway, Enterprise resource planning and organisational innovation: a management perspective, Industrial Management & Data Systems, Vol. 105 No. 3, 2005, pp. 280-290

The specialists found that key organisational issues are:

- *change,*
- *project management,*
- *monitoring and review,*
- *effective communication,*

- *teamwork,*
- *management,*
- *top management support,*
- *plan and vision,*
- *business process management and development,*
- *software development and testing,*
- *the role of the project champion and appropriate business and IT legacy systems.*

There are advantages and disadvantages associated with ERP implementation as an essential part of a wider change programme. The key research questions emerging from the discussion are how can ERP be more effectively implemented in large-scale applications, where complex organisational change issues are involved?

3. Implications of innovation and learning on performance management

Firms that have innovation and learning as important performance indicators typically operate in highly dynamic environments and have to deal with complex and ambiguous transaction processes. To survive, such organizations often have proactive strategies. They not only deal with environmental demands in a reactive way, but they also shape environmental demands and consider innovation as a major determinant for long-term success. Organizations that opt for innovation have a competitive advantage if they come up with new ideas and create services and products that are, at least partly, unique. The strategies they employ will have a substantial impact on the processes of transformation. Such processes will tend to become more ambiguous and complex in nature (Figure2).

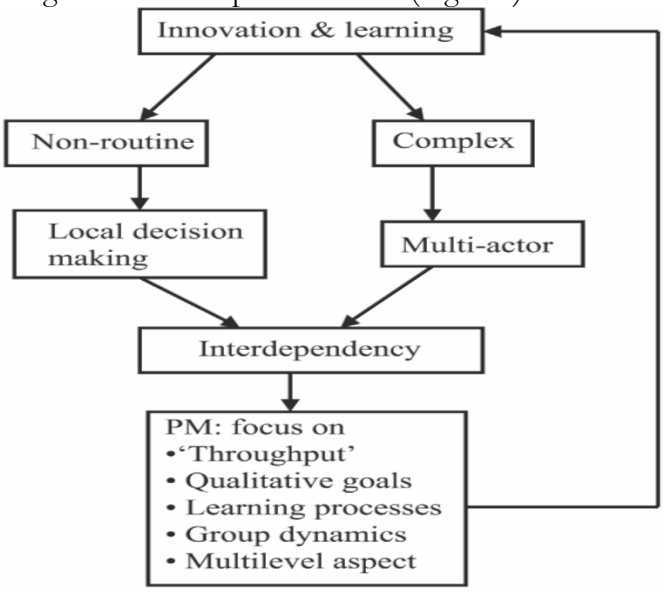

Figure 2 - Theoretical framework

Source: Eric Molleman, Performance management when innovation and learning become critical performance indicators**,** Personnel Review, Vol.32, N0.1, 2003, p0.93-113

- ***Non-routine.*** When work is non-routine, the outcome as well as the processes leading to the outcome cannot be specified in detail beforehand. In such a situation it is harder to find standard solutions, which can be embedded in standardized work processes. The progress and outcome of each processing step may vary considerably and the outcome of each action will affect the content and course of other processing steps. This means that while work progresses the exact goals emerge and that during processing decisions frequently have to be made or modified in terms of "what", "how" and "when". Work processes become more dynamic. In such a work environment, a hierarchical decisional structure will become inefficient and ineffective. Giving workers the opportunity to take such decisions at the local level adds value to the overall process and benefits the whole organization, as the occurrence of problems requires frequent adjustments to be made on the local level. Workers are allowed to analyse or reanalyse the problem, appraise or reappraise the best working method and, if necessary, reconsider the required output. This requires employees to be able to tolerate high levels of ambiguity, to be able to acquire and process information successfully and to have the capability to learn and to develop their problem-solving capacity. As such, workers will often become the most critical production factor in innovative firms.
- ***Complexity.*** The creation of innovative and highly complex products usually requires such a diversity of knowledge and abilities that it is not realistic to expect a single worker to have all the required knowledge and to master all required skills. The work will be assigned to teams of employees which have to cooperate and adjust their decisions and efforts to fit in with others since the creative solutions one member finds will have an impact on the work of others. Cooperation in such work settings often goes further than mutual "adjustment" and also implies knowledge sharing, finding solutions together, learning from each other and finding synergy in innovative and creative processes. All this will contribute to the creation of knowledge needed to create unique products and services and to keep the firm innovative. The creation of knowledge will therefore become another performance indicator for the organization. Learning and the creation of knowledge can become as important as the processing of the products and services themselves.
- ***Performance management (PM).*** The consequences for performance management of work processes become more non-routine and more dependent on the activities of peers. PM refers to *"processes oriented towards coordinating and enhancing work activities and outcomes within an organizational unit"*. Most performance management systems start with a top-down process. That is, objectives at the individual level are, via intermediate steps at the departmental, unit and/or team level, deduced from the objectives of the organization. Ideally these objectives match with individual goals to enhance motivation. The goals have to be defined in objective measurable terms to make reliable assessment attainable. These assessments must provide feedback on a timely basis for the individual worker to be able to adjust his or her behavior.

Objectives are formulated in terms of control and improvement of performance and in enhancing the motivation and the development of individual workers. Most performance management policies primarily concentrate on the level of the individual employee and on objectively measurable quantitative outcomes. In most systems, the manager primarily controls performance by influencing inputs (e.g. skills by training) and by the feedback provided by outputs (assessments).

If innovation and learning become major performance indicators, the emergence of performance becomes much more a dynamic phenomenon that is strongly embedded in its social context.

In the case of non-routine work, it is difficult to define clear and precise objectives for individual performance in advance, because these emerge and develop while doing the job. For PM the effect is that the formulation of objectives becomes much more a bottom-up and dynamic process than in settings where the repetitiveness of work processes is high. To be creative and innovative, workers need sufficient problem-solving capabilities, and to stay innovative they have to further develop these competences. For PM the emphasis should be much more on the "throughput stage", the stage in which the focus is on work processes. It generally will be difficult to quantify learning and innovation outcomes.

If non-routine work is done within projects in which employees are highly interdependent, the social context of performance management becomes an important issue. Individual goal setting in such a work setting may inhibit performance and it may make it difficult to attribute successes - in terms of innovation, knowledge creation, learning and personal growth - to individual workers. If individual workers can only control outcomes to a limited extent because they are related to, for example, peer performance, a performance system that is solely focused on the individual is likely to demotivate workers rather than motivate them. If tasks are much more interdependent than outcomes, workers may be much more focused on peers than on themselves, which may result in social pressure, conflict and, consequently, in inhibition of performance. When learning and innovation are the leading performance indicators, performance becomes much more a team issue than a phenomenon that is solely at the individual level.

4. Conclusions

Taking into account the last researches in ERP area, an important conclusion is that companies need both new innovative business solutions in combination with innovative IT solutions. There is a need to combine both business strategy and IT tools. Business innovation solutions in the future is likely to be in two parts – the strategic vision on the one hand and the detailed work of how to implement the vision on the other.

If innovation and learning become leading performance indicators, work will become more non-routine with a higher level of interdependence between workers. For performance management, this means that the monitoring of collective work processes becomes a major issue.

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