THE ROLE OF INFORMATION TECHNOLOGY IN BUSINESS TRANSFORMATION

Author
Vijay Kymar Agarwal

Supervisor
Prof. Abid Haleem
Dept. of Mevhanical Engg.,
Jamia Millia Islamia
Co-supervisor
Prof. Sushil
Dept. of Management Studies
IIT Delhi

The IT applications are built-up using numerous elements. These elements have dependencies, of various degrees, on each other. This study is undertaken, within feasible scope, to address various issues with their interrelationships pertaining to such elements of IT applications. This study also presents a ?big picture? of possible implications for practice pertaining to IT issues at various levels in the organizational hierarchy. The work on this study is divided into three groups on the role of information technology (IT) in business transformation.

1. Strategic Issues in Development of Software and Planning for Human Resources

Two issues are addressed: trends in the relative share of different categories of application software and the relative share of IT and end user professionals. The application packages are categorized as tailor-made, customized, and off-the-shelf packages. ERP packages are kept as a separate category because of their size and scope.

The projections are made on the basis of the perceptions of chief information officers in the two countries. The factors influencing the trend include: time compression, shorter obsolescence cycle of software packages, failure rate of software packages, size of the software package, complexity in requirements, best practices in-built in the software packages, ease of use, availability of skilled end user, availability of reliable software packages and maintenance support, criticality of the software package and control on the entire life-cycle of the software package, cost of the development of software package, growth in end-user computing, growth in usage of IT, and evolution in hardware and software.

The findings suggest that the respondents in both countries perceive that the usage of off-the-shelf/ERP packages is growing at a higher rate than the usage of tailor-made/customized solutions. They further suggest that the proportion of usage of off-the-shelf/ERP solution will increase form 34.8% in 1990-91 to 74.8% in 2009-10 in India and from 32.5% in 1990-91 to 86.4% in 2009-10 in the United States. The major reasons for these expected increase are shrinkage in the system life cycle, high cost, and high risk associated with the tailor-made/customized software.

As regards IT manpower, the finding suggest that, the requirement of in-house software professionals in India would continue to rise until 2009-10. In the United States, the requirement of in-house software professionals would rise between 1999-00 and 2004-05; and then it will be stable at that level between 2004-05 and 2009-10. The following factors would contribute these trends in both countries: a support to end-users from technical component of IT (India and the United States); drivers to involve end-users in IT function (India); growth in IT applications (the United States); growth in end-user computing (India and the United States); and the increase in the usage of off-the-shelf/ERP packages (India and the United States).

2. An Exploratory Study of the Contribution of Information Technology to Critical Response Activities Leading to Business Transformation

The findings suggest that the contribution of IT to critical response activities leading to business transformation, is expected to increase significantly in future in both India and the United States. While the respondents in the two countries have slightly different perception regarding the contribution of IT at current level, their perceptions are essentially the same regarding the contribution of IT in the future.

The findings also suggest that in future, the contribution of IT in supporting the critical response activities in Indian organizations will be higher for business network redesign followed by business process reengineering compared to the other variables. Respondents of the United States perceive localized exploitation and internal integration followed by business scope redefinition at higher level compared to the other ones.

3. Factors Affecting Successful Implementation of Business Process Engineering and Computer Based Information Systems

The findings suggest that both CBIS/BPR projects will be undertaken by the organizations in each country as a routine process to enhance their performance. The average number of CBIS/BPR projects in a company are higher in case of the United States compared to the organizations in India.

At data item level, the first five highest ranked factors affecting computerization success/failure in India include project size, application complexity, inappropriate planning, resistance for change, non-scientific management philosophy of the management; the five highest ranked factors in the United States are project size, application complexity, inadequate end-users support, inappropriate planning, and the lack of perceived ease of use. Further, the first five highest ranked factors affecting the success/failure of BPR projects in India are inadequate level of such projects in the country, application complexity, inadequate end-users support, high risk of failure, inappropriate planning; the five highest ranked factors in the United States are large project size, application complexity, inadequate end-users support, resistance for change, and inappropriate planning. The present work is confined to manufacturing, telecommunication (hardware), computer hardware, banking, hotels, computer software, and airlines. A comparison of the two countries will help in identifying opportunities for both practitioners and researchers. This study is likely to be useful to companies in India in formulating their IT strategies. Further, the experience of the United States may

be useful to them since the United States is the world leader in application of IT.