Establishing a systems integration process infrastructure

S. ZAHRAN, B. DYE, K. SANDERS and B. PEARCE
Bull Information Systems Limited, Maxted Road, Hemel Hempstead, Herts, HP2 7DZ, UK

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With the steady fall of prices and margins of computer hardware, back in the 1980s, many hardware manufacturers have tried to diversify their range of offerings. Bull Information Systems has chosen to change its major business direction to become a systems integrator and solution supplier. It has been a real challenge and a big success for Bull to succeed in changing its business direction from being a hardware/software manufacturer to becoming a leading systems integration (SI) company. For a business to be successful in making such a change it needs to work more efficiently and to react faster, while preserving its stability. Although there are many ways for achieving such change, the experience highlighted in this paper describes how a process focus played a critical part in realizing such change. Creating a systems integration business process and a process-focused organization have been critical factors in achieving the change of business direction. A process focus has an impact on the organizational structure; management practices; employees' skills and training; and on measurements of business performance. This paper describes the experiences at Bull Information Systems in creating a systems integration business process-focused organization and it outlines the mechanisms which are in place to ensure ownership and improvement of the process. It summarizes the main lessons learnt as a result of creating systems integration business processes.

Keywords: systems integration, process infrastructure, process improvement, business process design

1. Introduction

The process movement [6] is picking up quickly and the process focus is spreading to cover several domains including software engineering processes, manufacturing processes, and business processes. The process movement has its roots in the early work on quality [3, 4]. A process focus in an organization provides the basis for consistent performance measurement, skills development, assessment and evaluation of the process effectiveness, and the foundation for achieving continuous business improvement. Managements increasingly recognize that a disciplined process is primarily a management tool to help streamline practices and activities in alignment with business goals [7]. This is especially true in the Systems Integration (SI) business environment which has a large degree of variation between SI projects in terms of scale, coverage and the variety of technology and products required for the total solution. In this paper we highlight the characteristics of an SI business and the requirements for the business process required to support the SI business, drawing on the lessons drawn whilst establishing an SI process at Bull Information Systems. The SI process developed and applied at Bull Information Systems is called MOSIC™, ‘Management Of Systems Integration Contracts’. The purpose of MOSIC™ is to bring consistency, control and accountability to Bull’s approach for bidding and managing Services and Projects. MOSIC™ is the enabling process for improving business performance. Following are some of the benefits
already gained as a result of investing in creating a process focused organizations:

1. Process focus provide management with a business focus for investment decisions
2. The process improves the effectiveness and efficiency of Systems Integration Projects.
3. The process assists project managers' control of their budgets, resources, and timescales.
4. The process ensures consistency across projects, hence facilitates the resource allocation to projects.
5. The process encourages the project and business managers to continuously assess, evaluate and manage the project risks.

2. Characteristics of Systems Integration (SI) business

There are a number of differences between being a product manufacturer and being a systems integrator. While a product business has a well-defined set of products with large number of customers wanting the same thing, an SI business is driven by individual customer requirements. The requirements may vary widely from one customer to the next. Systems Integration projects will vary considerably depending on customer requirements. The nature and scale of the systems integration business is driven by customer demands. This could lead to the following variations of the nature of the projects:

1. Variety of scale of the requirements, type of requirements (e.g. software, hardware, applications or total environments).
2. Variation of workload/demand on the workforce (resources)
3. Variation of skills (depending on the type of project and deliverable)
4. Variety of methods, tools and techniques (to suit the specific nature of the project)
5. Number of first time elements, e.g. leading edge products
6. Variety of risks depending on the scale and nature of the project and the expertise of customers.

Other significant areas of differences between a product environment and an SI project environment include the following:

1. The variations of customer requirements in the SI business have an impact on the management approach, business procedures, and delivery techniques.
2. The SI organization requires greater flexibility and dynamism in order to be able to respond to the varying customer demands, and to accommodate the variety of products and technologies that could be involved in the final solution.
3. SI projects can last for years with a variety of deliverables which may cover different technologies and products from several vendors.
4. SI projects are often very large requiring delivery by a consortium of suppliers, hence the need for contract management, subcontractor management and supplier management skills throughout the project.
5. Due to the length of time which could be taken by an SI project, the profit margins predicted at the contracting stage could easily be eroded through variations of the prices of products and services, currency rates, legislative changes, etc.
6. The profit margins in SI business could easily be eroded during the SI project, hence the need to keep a continuous focus on financial and margin management.
7. Due to the variety of skills which an SI project may require, there is always the risk of non-availability of the right skill at the right time or new technologies which need new skills.