

USING BUSINESS PROCESS ARCHITECTURE TO ACCELERATE THE IMPLEMENTATION AND ROLLOUT OF ERP SYSTEMS AT MULTI-SUBSIDIARY ORGANIZATIONS: A CASE STUDY

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ABSTRACT

This case study presents the deployment of a business process realization system for supporting a global rollout of an ERP system at a multi-subsiary, global organization in the field of consumer goods products.

1. INTRODUCTION

Complex organizations often state their intention to use business processes in order to implement their ERP systems. However, this objective can be challenging to realize, primarily due to involved complexity (Bingi et al. [1]).

This paper provides a case study of "Consumer Goods Organization" ("CGO"), a global consumer goods company, and its use of a business process realization system to support its SAP ERP system global rollout.

2. BACKGROUND

CGO is a vertically-oriented consumer goods company with ca. 8,000 employees and subsidiaries in over 20 countries. CGO has five diverse product lines: home appliances, garden furniture, storage sheds, metal armatures, and installation appliances. Its most important manufacturing sites are located in EMEA. In recent years CGO has acquired several mid-sized corporations. Similar to other manufacturers in this domain, CGO operates (in parallel) three major operations models: 1. Make to Stock (MtS) 2. Make to Order (MtO) and 3. Sales and Distribution (S&D).

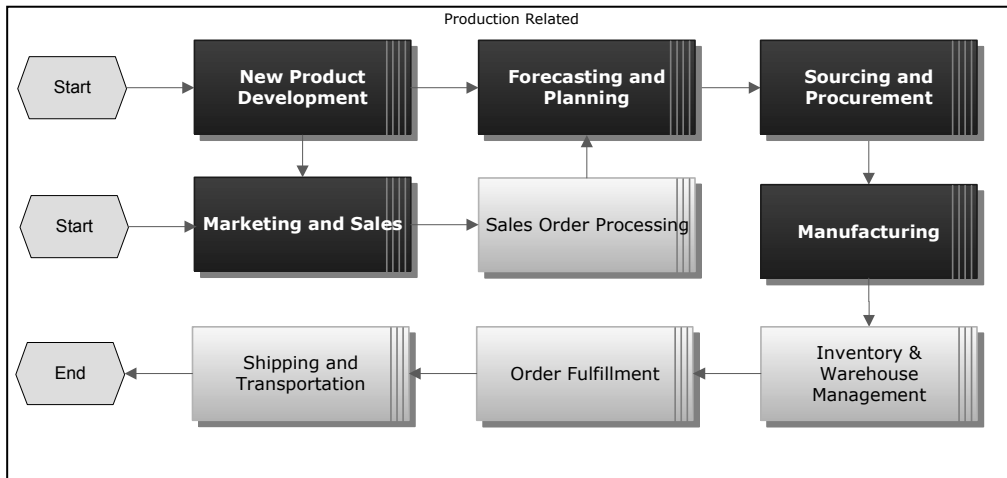


Figure 1: High Level Model Sample: Make to Order

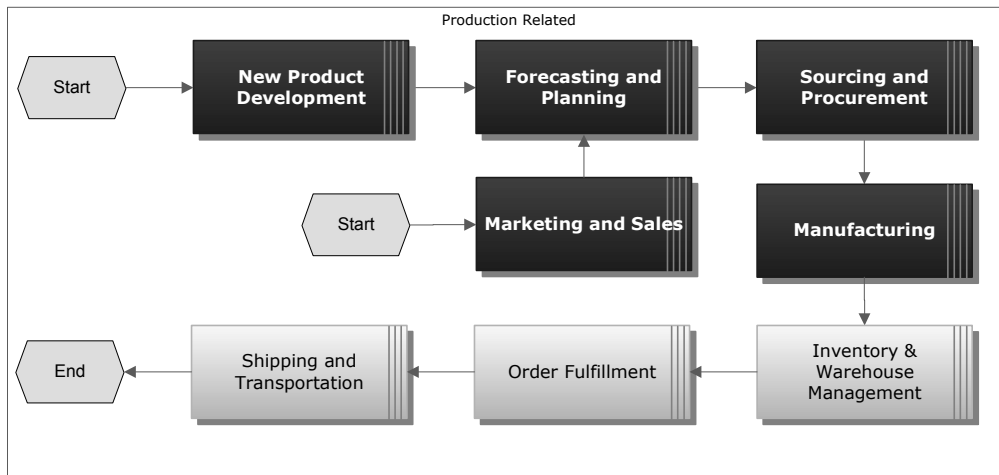


Figure 2: High Level Model Sample: Make to Stock

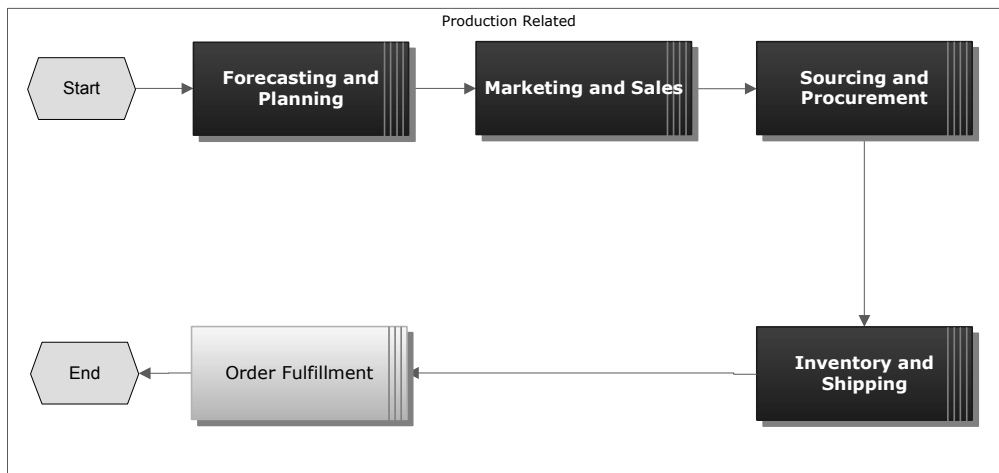


Figure 3: High Level Model Sample: Sales and Distribution

3. CGO'S ERP PROJECT

CGO's ERP project has been running since 1992. This case study focuses on the current stage, which began in 2005. Project goals included an upgrade of the ERP system and the seamless integration of its new acquisitions in order to create a unified corporate culture, streamlining global operations, increase market responsiveness and profitability, and ensure regulatory compliance.

3.1. Project Stages

As a means of obtaining these goals, CGO began its ERP project in early 2006. CGO began its implementation in five countries (seven sites) during 2006. The second stage was rolled-out in 2007, and included seven countries (eight sites), including two of the most recent corporate acquisitions. CGO is now in the third stage of its project, which involves eight additional countries (11 sites).

3.2. Challenges and Risks

It is insufficient to acquire an ERP system; it is necessary also to implement it with the proper planning and preparedness. Goyal and Randhawa note that the lack of planning or preparedness can lead, in some cases, to organizational bankruptcy (Goyal and Randhawa [2]).

Project challenges related to CGO's global implementation included multiple sites, diverse corporate cultures, varied product lines and manufacturing technologies, multiple distribution channels, a dynamic demand / supply matrix, and a complex network of diverse IT systems. This complexity is a major characteristic of such multisite implementations. (Markus et al. [3]).

More specific project challenges, related to business process realization, included the unstructured nature and complexity of CGO's process-related content, the manual manipulation of this content by uncoordinated tools (despite content complexity), and the lack of standardized language in describing and understanding processes. It was necessary to ensure that there was sufficient planning, management support, and global buy-in. (Heier, Borgman and Hofbauer [4], Jeffery and Morrison [5]).

4. PRECONDITIONS TO A SUCCESSFUL ERP IMPLEMENTATION

CGO recognized that shared understanding is a precondition to successful process modeling and hence also a compulsory precondition for ERP implementations. It understood that this means managing content through an integrated, collaborative and simple system, using a globally accessed shared repository (database) for managing the model, having consistent processes terminology, and deploying an appropriate hierarchical modelling structure. Some of these factors that were defined in-house at CGO can also be found in literature (Murray [6]), and as work principles of practitioners (solution integrators such as Accenture, Cap-Gemini, etc.).

5. CGO's SOLUTION

As a solution to these implementation challenges, CGO combined their SAP ERP suite with a dynamic business process realization system. CGO made this decision in order to avoid problems which are commonly encountered in ERP projects in complex organizations: a disconnection between business needs and implemented "solutions"; change management blocks, longer and more expensive project durations, reworks; incomplete implementations, low employee buy-ins, and limited retentions / re-use of implementation data (see also Butler [8], Messner et al. [8], Wasser et al [9]).

5.1. Business Process Realization: Methodology and Tools

Business process realization systems allow implementers to define, customize, test and document ERP/CRM/SCM systems. This approach helps reduce the duration and costs of implementation projects and can increase user satisfaction through the deployment of intuitive interfaces.

In this case study, CGO's use of a business process realization system created a user-friendly database which connected seamlessly into actual SAP transactions, as enacted at CGO's domain. The ERP deployment baseline was highly complimented by the business process realization system's embedded methodology, enabling structured working procedures and change management capabilities. The embedded methodology helped ensure that all subsidiaries have been using common terminologies, which is a critical factor for effective process mapping.

The business process realization system created a further solution to a problem faced by any ERP suites: that manual management of processes is required in order to create system interconnectivity between different modeling tasks, requirement management, general content management and the ERP application itself. Lack of such connectivity can constrain organizations due to a reduced capability to collaborate and reuse data across environments, in turn leading to a potential disconnect between business and supporting IT systems. However, CGO recognized that these issues are solvable and implemented a corresponding realization methodology and supporting tools.

5.2. Utilizing Hierarchical Process Models

Process models use a hierarchy to decompose a concept into its components in a structured manner (Wasser et al. [9], Lincoln et al. [10]). CGO's business process modeling system used a four-level hierarchy of Categories, Major Processes, Main Processes, and Processes. This hierarchy mirrors ERP suite hierarchies, allowing for the seamless integration of Main Processes and Processes with SAP transactions, with the benefit of a standardized language and easily accessible GUI (Wasser et al. [9]).

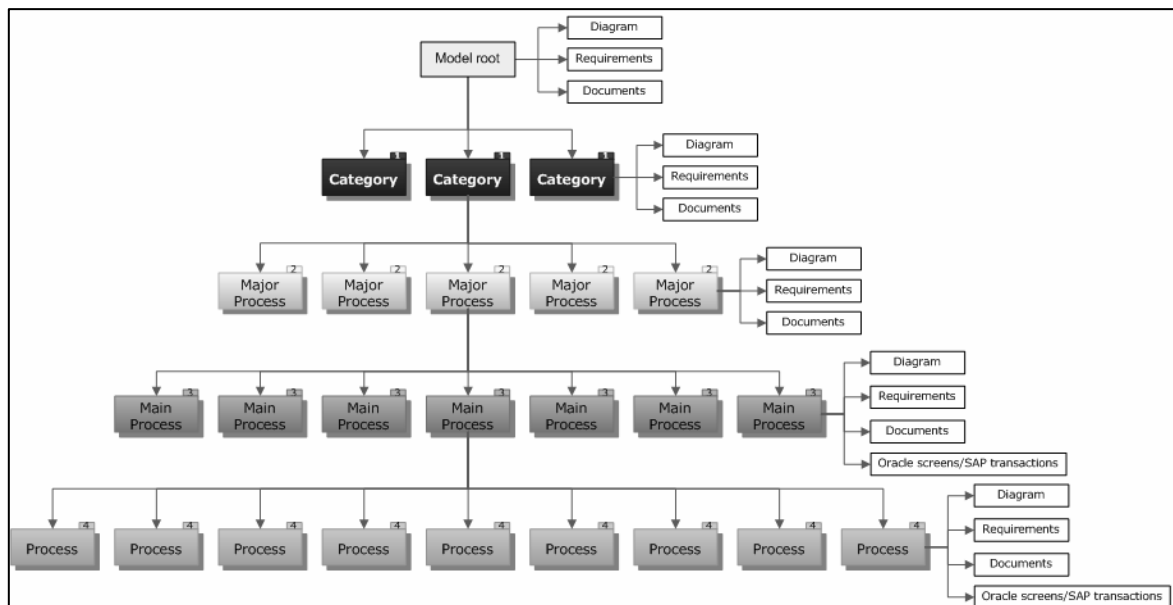


Figure 4: A hierchal process model with related content artifacts

6. COMPLEX ORGANIZATION PROCESS BUILDING

Complex organizations such as CGO face additional implementation challenges due to the inherent tension between the goal of consistnt deployments, and the need for local flexibility.

Complex organizations must decide how to optimize content hand-offs and roll-outs, and how to balance standardization with individuality (Capgemini [9], Markus et al. [3]).

CGO resolved these issues by using a business process architecture which balanced central standardization with local flexibility.

6.1. Local Flexibility

The business process realization system CGO used allowed to create a Global Baseline of standard, global (parent company) processes. Despite the development of these processes globally, the business process architecture allowed for local flexibility by providing each local organization (subsidiary) the power, in most cases, of retaining or deleting the global process.

In addition, local organizations were able to create their own Local Practices which were in turn distributed to the global organization for acceptance or rejection. In some cases, these local practices were further distributed to all other local organizations.

6.2. Enabling Global Control

As a way of balancing local flexibility and ensuring global standardization where required, the global organization had the option of making some processes mandatory. Thus certain processes, such as those associated with mandatory regulatory requirements, could be made universal and applicable to all local organizations. This combination of flexibility and control allowed CGO to successfully meld global standards with subsidiary practices, taking into consideration local cultures and variations while at the same time ensuring that the global synergy is kept.

7. BUSINESS PROCESS ACCELERATION

CGO is benefiting from its extremely successful marriage of the SAP suite and the business process realization system. Its use of the ERP business suite provided the preliminary process baseline, whereas the business process realization system encapsulated all content artifacts into a single central location, created a common language, and permitted the user-friendly and automated manipulation of processes.

The organization is now benefitting from a structured ERP implementation, characterized by almost unanimous employee buy-in and successful early rollouts. This is remarkable,

considering CGO's size, diversity, and its multiple recent acquisitions. CGO attributes its ERP success to its decision to use business process architecture in tandem with an ERP suite. This decision led to the following:

- Common language ensuring process standardization
- Global IT integration; Subsidiary buy-in due to local flexibility
- Global control and change management
- Seamless integration with SAP transactions
- User acceptance due to an easy-to-use and attractive GUI, that enabled the clear creation of connectivity between the business and IT

The combination of global control, and user and subsidiary buy-in leads to tight organizational integration, which, according to Heier et al., is one of the three critical requirements to a successful ERP project. The other two requirements, careful project planning and top management support, were also covered by CGO methodology and tools (Heier et al. [4]).

To date, CGO's ERP goals of a unified corporate culture, streamlined global operations, increased market responsiveness and regulatory compliance are attended. Streamlined global operations and increased market responsiveness are highly assisted by the process realization architecture's common language, IT standardization and feeding into ERP transactions. Likewise, the goals of a unified corporate culture, subsidiary buy-in, and global control are being met by the checks and balances of the system's complex organization process building.

8. CONCLUSION

As in CGO's case, using business process architecture can assist the implementation and rollout of ERP systems in multi-subsidiary organizations. Adding the benefits of an adjacent process realization system enables direct connectivity of business processes models with enterprise software enactment systems. Such systems allow users to pursue connectivity without extensive knowledge of the underlying ERP system structure. This live connectivity also assists in keeping changes that may occur both in the process model and the enactment system. Even though this paper described an SAP implementation, the concept is valid for any production ERP system, and is of course vendor agnostic .

Further elaboration is needed to overcome open issues such as adding low level capabilities to ERP system customization and configuration mechanisms. It is hoped that by

expanding ERP process realization capabilities, researchers and IT practitioners will be able to provide additional flexibility and visibility to the relatively complex procedure of ERP implementation, configuration, customization and rollout.

9. REFERENCES

1. P. Bingi, M. Sharma and J. Godla, "Critical Issues Affecting an ERP Implementation," in J. Myerson, ed., *Enterprise Systems Integration*, second ed. (Best Practices: Boca Raton), 2001
2. D. P. Goyal and G. Randhawa, "Design of a planning model for ERP systems: an empirical study of Indian organisations", *International Journal of Business Information Systems*, Volume 3, 2008
3. M. Markus, C. Tanis and P. van Fenema, "Enterprise resource planning: multisite ERP implementations", *Communications of the ACM*, Volume 43, Issue 4 , 2000
4. H. Heier, H. P. Borgman and T. H. Hofbauer, "Making the Most of IT Governance Software: Understanding Implementation Processes", *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual*, 7-10, 2008
5. B. Jeffery and J. Morrison, "ERP, One Letter at a Time", in J. Myerson, ed., *Enterprise Systems Integration*, second ed. (Best Practices: Boca Raton), 2001
6. J. P. Murray, "Nine Factors for Project Success," in J. Myerson, ed., *Enterprise Systems Integration*, second ed. (Best Practices: Boca Raton), 2002
7. J. Butler, "Risk Management Skills Needed in a Packaged Environment," in J. Myerson, ed., *Enterprise Systems Integration*, second ed. (Best Practices: Boca Raton), 2001
8. Capgemini, "Case Study: Data Migration for a Global Semiconductors Manufacturer", in Messner, Hendel and Thun, eds., *Rightshore! Successfully SAP(R) Projects Offshore*, Springer Berlin Heidelberg, 2008
9. A. Wasser, M. Lincoln and R. Karni, "ERP Reference Process Models: From Generic to Specific", *Business Process Management Workshops* 45-54, 2006
10. M. Lincoln, R. Karni and A. Wasser, "A Framework for Ontological standardization of business process content", *Proceedings of ICEIS*, Funchal, Madeira, Portugal, 250-256, 2007