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Business Process Services

White Paper

Empowering the Business with Process Oriented IT Architecture

About the Author

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Mahesh has over 24 years of experience across various technologies. He has played a key role in addressing the ever-changing demands of business by architecting state-of-the-art IT solutions. As a technology leader, he has successfully incubated several high impact, high potential IT service lines, and technology centers of excellence (CoE). He has strong expertise across technology areas, architecture domains and industry verticals, and extensive experience in the Banking and Financial Services industry.

Abstract

Systems that support business processes traditionally use application centric architecture, and are designed with specific functionality in mind. Business users therefore find it difficult to change the way an application operates and adapt it to subsequent changes in business rules. In practice, processes are not restricted to a single functionality but are spread across business functions. In addition, certain tasks within processes are not automated and need to be carried out manually. IT centric architecture also lacks the ability to provide a unified view to associates. All of this leads to a lack of efficiency and an increased likelihood of errors.

It is therefore ideal that architects consider process oriented architecture for systems designed to support processes spread across business units as well as organizational boundaries. Applications designed in this manner are transparent and consistent, that is, the business, and the technical data and processes are in sync.

This paper discusses the limitations of application centric architecture for business process systems, and how process oriented applications help overcome these limitations by leveraging Service Oriented Architecture (SOA) and Business Process Management (BPM). It also illustrates how process oriented architecture helps in increasing employee efficiency and productivity, leading to reduced errors and higher customer satisfaction.

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Introduction

Business Process Service (BPS) operations have grown exponentially over the last decade. BPS providers rely heavily on IT systems to help address increasing service level expectations from their clients. However, IT operations are not always able to gainfully support BPS operations.

This is because traditionally, IT applications are based on application centric architecture. BPS operations are highly process oriented, and include manual activities for non-automated tasks. Though application architecture includes elements from business processes, aspects linked to manual activities or non-automated tasks are often ignored.

For Online Transaction Processing (OLTP) applications, information processing is divided into individual operations, with immediate response being provided for specific requests. IT systems here are designed to manage Atomic, Consistent, Isolated, and Durable (ACID) transactions. However, in the case of BPS operations, an activity may involve multiple applications, and may have several people working on it, either sequentially or in parallel.

This calls for a shift from application oriented architecture to process oriented architecture. An effective organization should have end-to-end processes that go beyond typical organizational silos and boundaries. The result is greater efficiencies and better results.

Typical Limitations of IT Applications that Support BPS Operations

Typically, the architecture of a BPS application has at least three tiers: presentation, business logic, and database. Often, the business process model and its execution do not receive the required focus, leading to a number of limitations within the applications. In addition, collaboration between internal and external stakeholders often occurs outside the realm of IT systems. Typical limitations of the IT applications used in BPS operations include:

- Factors such as manual categorization and allocation to agents are not considered
- Operational risks and controls are not sufficiently embedded into systems since business rules are often not an integral part of IT applications
- End-to-end process optimization and execution is not achieved, due to inadequate Business Process Management (BPM)
- There is no comprehensive error analysis framework to eliminate or significantly reduce errors
- The application does not provide adequate analytics to guide BPS agents in work prioritization and execution
- Substantial time is required to standardize inputs for tasks
- The impact of virtualized deployment of IT applications is not considered

BPS Agent Type	Voice Operations	Data Entry Operations	Knowledge Processing
			
Activity	**Typical Activity %**		
Browsing	80%	10%	10%
Data Entry	10%	80%	50%
Thinking	10%	10%	40%

Figure 1: A break-up of typical work pattern of BPS agents

These limitations impact the design and usability of the systems, resulting in inadequate measurement of process control, performance, compliance and cost; partial automation of manual processes; and limited ability to configure processes. In addition, they also impact the efficiency and effectiveness of BPS agents who rely on these systems. Figure 1 depicts a break-up of the typical work patterns of BPS agents. An agent may need to access multiple applications or screens to get the information required in order to complete a task, thereby affecting the turnaround time and customer satisfaction. Given these limitations, it is important to revisit the way system architecture is conceived and designed for BPS operations. Adopting a thoroughly vetted process oriented architecture can prove to be a game changer in such situations.

The Process Oriented Architecture Paradigm

Process oriented architecture focuses on enhanced alignment of system architecture with business process execution. With process oriented architecture, there is complete consistency as well as process transparency, since both business and technology teams use the same nomenclature. This eliminates the chances of misrepresentation or miscommunication. Business process definitions specified by business users become part of the architecture of the IT applications, and drive every aspect of the applications' functions.

Process oriented architecture essentially comprises two dimensions:

1. **A solution independent process model:** In this model, business processes are defined and managed by business users. The model provides an organization-wide view through process maps – a hierarchical set of business processes accompanied by performance measures and measurement methods. It also has in-built mechanisms for managing performance variations. These process maps cater to the IT needs of the organization from a solutions perspective. They map each business process to IT application services required to successfully complete the process, and automate it as much as possible.

2. **A solution for applications, workflow, and contextual connections:** This enables the mapping of business processes to the underlying technology executing them. Such a solution forms the backbone of the process oriented architecture, and orchestrates and integrates IT applications used in BPS.

Benefits of Adopting Process Oriented Architecture

By leveraging the principles of process oriented architecture for designing BPS applications, organizations can:

- Provide a common enterprise view from both a business and a technology perspective
- Focus on end-to-end processes across organizational business units and applications, and reduce the risk of ignoring key functionality
- Enhance efficiency and effectiveness, and reduce cost through standardization and automation
- Implement well-defined process performance measures, and provide greater visibility into performance metrics like productivity and turnaround time for targeted performance improvement
- Manage performance variations linked to both normal and exceptional scenarios
- Integrate risk controls into processes and provide a comprehensive safety net

Transitioning to Process Centricity: A Framework

To adopt process oriented architecture, organizations first need to become process oriented. At a strategic level, organizations need to gear up to continuously deliver better value to their customers and stakeholders. They must also focus on processes that deliver value and are aligned with their organizational strategy. At a process level, they need to execute strategy through a series of coordinated activities across a number of business units within the organization. By managing processes with an end-to-end view of the performance of all processes, organizations can optimize performance. Upon establishing an organization-wide process centric culture, organizations need to understand and execute the fundamental tenets of Service Oriented Architecture (SOA) and BPM. These serve as key enablers of process orientation in systems.

Process centricity can be effectively achieved by applying SOA and BPM in a synergetic fashion. BPM is essential to understanding the underlying processes, inputs, outputs, and sub-tasks at each stage of the process, and how they can be supported and executed. A clear understanding of how business processes are actually executed in BPS operations, and what is required to optimize them, adds significant value to existing applications.

On the other hand, SOA puts process orientation and decomposition into a business context. It translates IT applications into business services. Services can then be leveraged contextually, either in a standalone mode, or by being a participant of an orchestrated process. This results in an end-to-end process, which amalgamates various business units, IT applications, and key stakeholders.

Process oriented management involves understanding the enhancements needed in process execution, as well as implementing steps to sustain and improve them. Additionally, it enables companies to accurately forecast performance and anticipate potential problems.

Conclusion

The effective and efficient execution of business processes in an organization depends heavily upon the efficacy of the supporting IT applications. With processes going beyond traditional application and functional boundaries, organizations need to leverage process oriented architecture to ensure that tasks are completed with greater accuracy. Process centricity facilitates better alignment between business and IT, and generates greater operational efficiencies. This approach also provides an integrated view of functions and business units in an organization for better business results.

In order to leverage the benefits of process centric systems, organizations will need to re-design their IT systems, as well as redefine the manner in which they function. It is also important for key stakeholders in BPS to understand and execute the fundamental tenets of SOA and BPM.

Process oriented systems are an ideal choice for today's global organizations. They support business goals by contextually connecting different applications used in various operations, and result in improved efficiencies and greater end customer satisfaction.

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TCS' Business Process Services (BPS) include core industry-specific processes, analytics and insights, and enterprise services such as finance and accounting, HR, and supply chain management. TCS creates value through its FORE™ simplification and transformation methodology, backed by its deep domain expertise, extensive technology experience, and TRAPEZE™ governance enablers and solutions. TCS complements its experience and expertise with innovative delivery models such as using robotic automation and providing Business Processes as a Service (BPaaS).

TCS' BPS unit has been positioned in the leaders' quadrant for various service lines by many leading analyst firms. With over four decades of global experience and a delivery footprint spanning six continents, TCS is one of the largest BPS providers today.

Contact

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