

Chapter 16

Tending and Trekking towards Composite Oriented Architecture (COA)

Pethuru Raj Chelliah
Wipro Technologies, India

ABSTRACT

*With the noteworthy spurt of service orientation (SO) principles, the spur and surge for composition paradigm have taken a fabulous and fruitful dimension and perspective. Composites are emerging and establishing as the promising, proven and potential building-blocks in the pulsating ICT space. Enterprises are very optimistic and sensitive about the shining days of composites in their day-to-day dealings and obligations to their restive partners, government agencies, venerable customers, demanding end-users, and loyal employees. In short, composites are bound to increasingly and illuminatingly participate and contribute towards fulfilling the goals of realizing integrated, optimized, smart and lean business processes that in turn can lead to extended, connected, **adaptive**, and **on-demand** businesses. As next-generation ICT is presumed to thrive on spontaneous and seamless **collaboration** among systems, services, servers, sensors, etc. by sending messages as well as smartly sharing a wider variety of connected and empowered resources, there arises a distinct identity and value for progressive, penetrative and pervasive composites. Already we started to read, hear and experience composite applications, services, and views. As composition is to flower and flourish in a positive fashion, the future IT is definitely on right track. In this chapter, you can find discussions about how rapidly and smoothly services enable business-aligned composites realization. There are sections dealing with prominent composition paradigms, patterns, platforms, processes, practices, products, perspectives, problems and potentials.*

INTRODUCTION

Service orientation gracefully and gleefully supports the long-cherished and unfinished goal of reusability. SO equips and enables designers and developers to compose sophisticated business solutions as a collection of simple yet sophisticated services. This enforces the view of creating and keeping up some common services that can be utilized and reutilized by many types of clients across domains more frequently and readily to construct a variety of business systems for a variety of purposes. IT departments in glowing enterprises, product vendors, system integrators (SIs) and independent software vendors (ISVs) are more keenly leaning towards producing and maintaining a growing community of enterprise assets (primarily reusable, reliable, sustainable, smart, secure, scalable, and supple services for preparing the unfolding service era) to revitalize their crumbling and struggling enterprise systems and also to realize new-generation, resilient, and versatile enterprise solutions at the business speed. Precisely speaking, the next-generation IT will revolve around services and their distinct yet unexplored territories and capabilities.

As a way for enhancing the reusability of not only modernized systems but also existing and expensive artifacts, composition idea has been picking up fast. Another trend is to close-in the widening gap between the business movements and IT realities. That is why **process-centricity** has become a huge and hot topic that ultimately empowers business executives and analysts to play around with enterprise IT systems. That is, there is an urgent need for a tighter coupling, closer **collaboration**, and deeper alignment between business dynamics and IT innovations. Service-based composites have solidified and sharpened as the silver bullet for all the ills and limitations of current enterprise IT. Therefore the popularity of composites is soaring and its acceptance and adoption rates are unbelievably high with overwhelming support across industries.

Process-Centrism – Service oriented architecture (SOA) (Koskimies, 2006) heavily impacts all the layers in any enterprise system architecture. Particularly we all know that processes guarantee the extreme success, flexibility, openness, dynamism and real-time responsiveness of applications and therefore, there are all-out efforts and endeavors in bringing out a gamut of right optimizations through innovations in arriving at lean, integrated, and nimble business processes. As **process-centricity** acquires a vital proportion in this service era (there is a close interlinking between processes and services with the unveiling of SOA, the first and foremost business-driven architectural pattern, style, and approach), there is a continued evolution of process compactness, consolidation, composition, etc. By leveraging standards-compliant BPM tool sets and suites, organizations have embarked on streamlining and automating their everyday tasks effortlessly. Besides concepts, algorithms and tools are extensively leveraged to reduce turnaround time and time-to-market significantly in order to ensure regulatory compliance and organizational obligations very strictly.

However for BPM suites to realize their true potential, they must evolve consistently beyond simply enabling structured processes. Structured processes account for hardly 10+% of the total work being performed within organizations each day. The other 90% of work is done in a completely dynamic, ad-hoc, and unstructured manner. In order to help organizations become more anticipative and competitive in this exceedingly connected world especially at this recessionary period, BPM suites need to become sophisticated and smart enough to visualize the unforeseen and accordingly equip themselves to satisfactorily and seamlessly fuse into dynamic business systems that define tasks on the fly. BPM suites need to allow business managers to assign, delegate and track mission-critical tasks in real time. BPM suites must also become value-added tools for knowledge workers, edifying them to quickly and easily

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