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SOA Technology Competency Center

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Organizational need to manage SOA transformation effectively has bolstered the growth of SOA TCC concept

As SOA momentum is picking up in the industry, more and more companies are adopting SOA on a larger scale. Also as the SOA hype is slowly undergoing metamorphosis to real world implementations, organizations are realizing there are impediments to a successful SOA adoption and growth.

SOA is just not about integration at a platform or an application level but it is a culture change within the organization about how the traditional business-IT interaction happens and a paradigm shift from IT as a 'technology provider' to IT as a 'business enabler.' Understanding this impact of SOA adoption on the enterprise and creating a structure to effectively manage this change is no longer an option – it's mandatory.

SOA AND THE NEED TO MANAGE ITS ADOPTION

In order to successfully adopt the right technologies, manage change and growing them successfully within an enterprise, there is a need for a structure to be in place to look at the holistic picture, to create effective strategies and to take the organization to the correct maturity level.

In a typical IT world, the role of IT is viewed as a 'technology provider' and hence there exists a customer-supplier relationship between the business and the IT organization. Business provides requirements and IT provides technology platform as per the business requirement. This pattern has led the IT world to build 'applications' and create technology platforms in silos. In order to reuse the 'applications' or 'platforms' already created, IT started thinking in terms of integrations at the platform level and there the complexities of technology integrations were created.

Business needs agility and a complex infrastructure with multiple integrations fails to provide that. In order to achieve agility, the infrastructure needs to absorb the business process changes quickly. This can be achieved by aligning the technology components closely

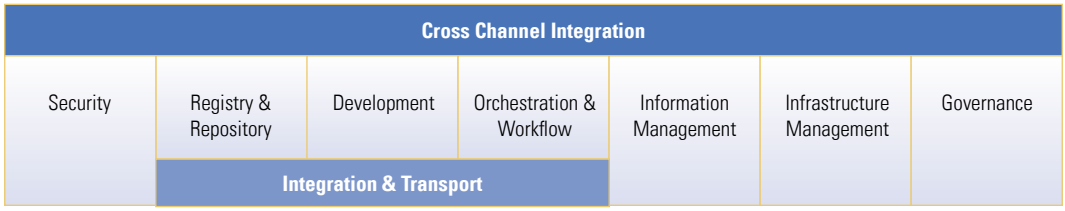

Figure 1: *Sample SOA Reference Architecture* ***Source:*** *Infosys Research*

to business process and perhaps giving adequate control to business to create new processes.

Behind creating services which align with the business processes and creating infrastructure to create processes and manage the metadata about the services, is the need to align IT closely to the business and provide business the much needed flexibility. This is a radical change in the IT and business world.

With the dual pressures of meeting aggressive launch timelines and meeting the stringent SLAs of the current operations, bringing in this cultural change is next to impossible. There needs to be a focus around bringing in this change and a structure to manage this change effectively. The questions are

- What exactly is this change? In other words what are the various 'building blocks' or 'capabilities' which the organizations need to build in order for successful SOA adoption?
- How can organizations achieve managing this change successfully, when they are under such pressures?

ESSENTIAL BUILDING BLOCKS FOR SUCCESSFUL SOA ADOPTION

The concept of SOA is not new now and as more and more organizations have started embracing SOA, some common capabilities which are required to be built, have started emerging. The three primary building blocks are:

- SOA Reference Architecture
- SOA Roadmap
- SOA Governance

Reference architecture provides a comprehensive capabilities stack to the organization, which it should build as part of the SOA adoption process. These capabilities need to be considered regardless of products and tools the organization needs to consider for successful SOA implementation.

A typical capability stack which is also known as 'Reference Architecture' is shown in Figure 1. These capabilities to be built vary based on the organization size, its current capabilities and its SOA adoption goals.

The SOA roadmap provides the organization a sequence of events that need to happen in order to adopt SOA capabilities incrementally and also provides the snapshots of different transition states.

SOA governance provides the control mechanism to control the adoption process and technology growth.

These three building blocks provide the essential foundation for taking the organization to the next level in the SOA maturity. The details of these three building blocks are out of scope for

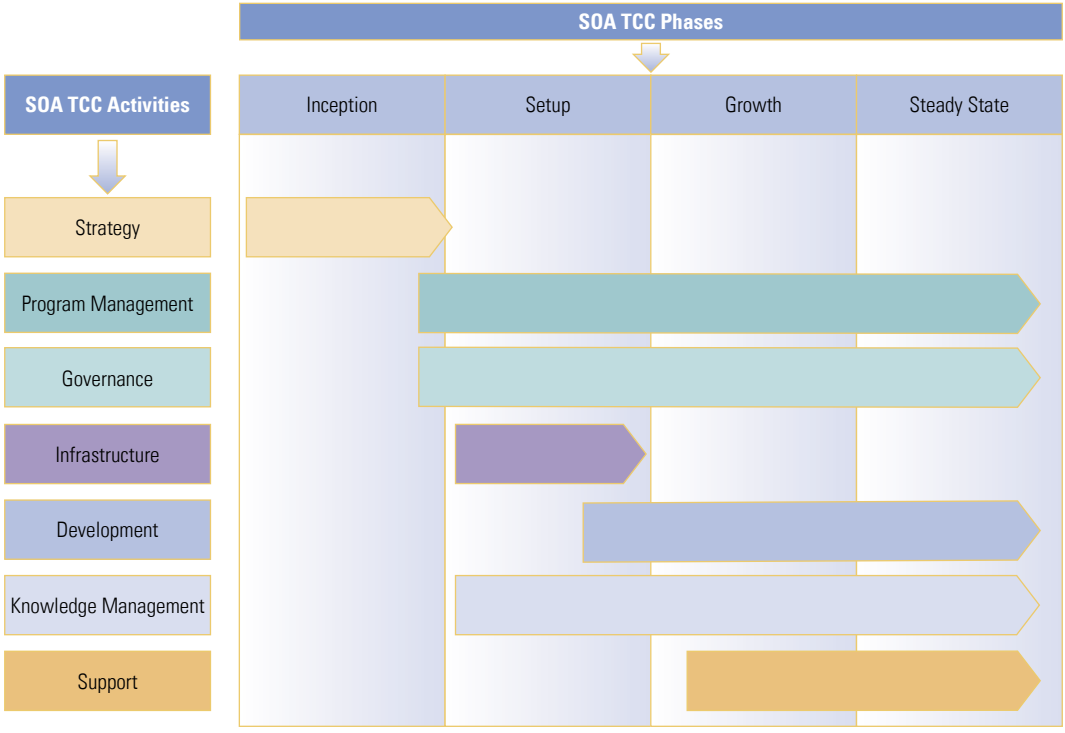

Figure 2: *SOA TCC Phases and Activities* ***Source:*** *Infosys Research*

this article; however we will briefly discuss the activities those need to be done for creating these building blocks in the following sections.

Once we have understood the basic building blocks for successful SOA adoption let us look at how SOA Technology Competency Center can provide the structure and processes required to be put in place to successfully adopt SOA and grow it within the organization effectively.

SOA TECHNOLOGY COMPETENCY CENTER

SOA TCC is a central group within an organization which provides direction, guidance and provides the necessary resources in terms of technology, people and processes to the rest of the organization in order to successfully adopt and grow SOA within the organization. The various other names used currently within the industry for this kind of a group are 'Center of Excellence' or 'Shared Services' or even 'SOA / Web Services PMO (Program Management Office).' Despite the name, the type of industry vertical and size of the organization, the activities to be performed by this group remain more or less the same. Figure 2 represents the various activities performed by a TCC and the phases during which these activities are performed.

TCC PHASES AND ACTIVITES

The TCC organization typically undergoes a four- phased evolution.

Inception: This is the phase when the organization is going through a process of understanding

SOA and how should it be adopted within the organization. A business case is established to adopt SOA and SOA strategy/roadmap is defined.

The objective of the SOA strategy is to establish the business case for SOA adoption, define the SOA maturity level where the organization wants to reach and provide a high level roadmap for the transition states including the investment plan.

The roadmap establishes the current capability of the organization after assessing the business/technology drivers and the current IT landscape. Based on industry standards and technology trends, a capability mapping exercise is carried out to define a standards or technology adoption roadmap. The final part of the roadmap is to provide a migration plan from the current state to the 'to be' state.

Another important activity which should happen in the inception phase is establishing the SOA governance framework. There are two aspects of SOA governance: Design time governance and Run time governance. Run time governance activities are usually carried out in the Set up phase. During the inception phase, the TCC policies/principles, investment model, organization structure and enagaement processes are planned.

Set up: Set up phase is a more tactical phase when the SOA strategy/roadmap and governance recommendation start getting implemented. The team structure, governance model, program management plan, reference architecture, infrastructure architecture and communication plan get defined/elaborated as part of set up activities.

SOA TCC usually either resides within the EA organization or becomes an extension of the EA organization. The team usually comprises of SOA strategist/architects/developers mixed with management roles. The governance activities in this phase focus on creating the standards, review processes, engagement processes and feedback processes. The PMO starts tracking the issues/risks and creates communication plan for the TCC.

The technology team starts defining/ elaborating on the reference architecture and creates the required frameworks and components. This also includes the infrastructure required to support SOA/web services enterprise wide. Some organizations do not include infrastructure as part of the TCC since infrastructure managed by individual units within the organization may suit the organization. As part of the architecture definition buy/build/reuse analysis, vendor/ product evaluation/recommendation and building proof of concepts activities are carried out.

Growth: In the growth phase the actual roll out of the TCC gets started to the specific groups within the organization. The early part of the growth phase is usually the pilot projects. Based on the pilot learning and feedback, the TCC program is rolled out onto the rest of the enterprise over a period of time.

In this phase pilot team/project is engaged as defined in the migration plan of the TCC roadmap. The architects/developers from the TCC team are heavily involved with the pilot team to architect, design, build and implement the pilot project. The criteria for selecting the pilot cover most of the ideas conceived during the inception and set up phase. The leanings from the pilot project are used to revise the documents, standards, models, frameworks, infrastructure and processes. This pilot serves as a major de-risking strategy at an early stage of adoption and prevents any cost or timeline escalations down the line.

Based on the results of the pilot the TCC is rolled out to the rest of the organization

referring to the roadmap/migration plan. The SOA maturity goal as defined in the SOA strategy and the roadmap stages influence the activities of the growth phase to a large extent. Most of the SOA adoptions are a hybrid approach which is a 'meet in the middle' approach rather than a pure top-down or bottom-up approach. There are pockets within the organizations where the teams have implemented web services to meet the business need. TCC needs to consider a bottom up approach to align these groups with the overall SOA standards.

The growth of TCC also depends upon how clearly the TCC mission and goals are articulated and communicated to the rest of the organization. This communication falls under the 'knowledge management' activity of the TCC. Usually a portal is created which contains TCC documents, white papers, workshop material and engagement and support requests. Increasing the awareness and SOA knowledge level within the organization is an important aspect and the success of SOA adoption depends largely on this aspect. TCC usually creates the training material and conducts training sessions and workshops to achieve this goal.

Steady State: Steady state happens when all of the TCC aspects are fully functional enterprise-wide. This is where the TCC is functioning as a governing/consulting group to the rest of the organization. The activities during this phase are primarily geared towards supporting the infrastructure, frameworks, continuing to conduct workshops/reviews and providing consultancy to rest of the organization.

The support activities are restricted to supporting the frameworks, component and infrastructure created by the TCC. These do not include supporting the projects using these assets. However upon request from the project team TCC may provide consultancy to resolve a specific issue.

The steady state of the SOA TCC may get disrupted due to organizational changes such as internal structure changes, merger and acquisitions, or even major changes in any of the underlying technology directions/ infrastructure. When such a change happens TCC may need to run through the four phases as a mini-cycle to manage the change.

DE-MYSTIFYING SOA TCC

Some of the common myths seen in the industry about the SOA TCC are:

- SOA TCC is a resource staffing organization.
  On the other hand, SOA TCC provides the strategy, direction and the required foundation for successfully adopting and growing SOA. TCC will enable the rest of the organization by providing adequate structure and processes. TCC may also provide consulting resources but will not staff the project teams.
- SOA TCC is a governing body only.
  While TCC is definitely involved in establishing the governance principles and standards, governance is one of the many functions which TCC performs.
- SOA TCC is a profit center.
  This assumption is not necessarily true. SOA TCC definitely needs some Enterprise funding to begin with. Later during the Growth and Steady state phases, the size of the organization and the volume of projects may fuel the profits due to charge back model, consulting hours etc. However without adequate funding in the initial phases the TCC may well end up becoming a resource staffing organization.

CONCLUSION

SOA spans across multipe technologies and hence acquiring expertise from different technology areas is critical to the success of the TCC. Executive sponsorship, adequate funding and establishing clear mission and goals are some of the other critical success factors. An organization would have a slim chance of success in SOA adoption without an effective TCC, analogous to a basketball or football team trying to win the championship without a competent coach.

There is no gainsaying the fact that TCC type of organization is required to help the companies successfully adopt and grow SOA. However every organization is unique and the drivers behind SOA adoption also vary. TCC helps if there is an enterprise-wide adoption of SOA. For implementing, say, one or two projects using SOA does not mandate the need for a TCC. Hence there is a need to carefully evaluate the business drivers, management readiness for funding a TCC organization and the availability of the required skills - either internal or external consultants - to form a TCC before deciding to establish a SOA TCC.

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Author in this issue

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