E-Governance and Service Oriented Computing Architecture Model

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Abstract – E-Governance is the effective application of information communication and technology (ICT) in the government processes to accomplish safe and reliable information lifecycle management. Lifecycle of the information involves various processes as capturing, preserving, manipulating and delivering information. E-Governance is meant to transform of governance in better manner to the citizens which is transparent, reliable, participatory, and accountable in point of view. The purpose of this paper is to attempt e-governance model, focus on the Service Oriented Computing Architecture (SOCA) that includes combination of information and services provided by the government, innovation, find out the way of optimal service delivery to citizens and implementation in transparent and liable practice. This paper also try to enhance focus on the E-government Service Manager as a essential or key factors service oriented and computing model that provides a dynamically extensible structural design in which all area or branch can bring in innovative services. The heart of this paper examine is an intangible model that enables E-government communication for trade and business, citizen and government and autonomous bodies.

Keywords - E-Governance, ICT, SOCA.

I. INTRODUCTION

Service-Oriented Computing (SOC) is the computing paradigm that utilizes services as fundamental elements for developing applications. To build the service model, SOC relies on the Service Oriented structure (SOS), which is a way of reorganizing software applications and infrastructure into a set of interacting services. However, the basic SOCA does not address overarching concerns such as management, service orchestration, service transaction management and coordination, security, and other concerns that apply to all components in services architecture. Services are autonomous, platform-independent computational elements that can be described, published, discovered, orchestrated and programmed using standard protocols for the purpose of building agile networks of collaborating business applications distributed within and across organizational boundaries. [1]

In order to assist the allocation of governmental information, data standards such as the format of forms should be predetermined while data standards about the definition and description of dealing process should also be provided for the comprehension of process interoperability and operations integration. Service Oriented Computing (SOC) [2] is the new emerging paradigm for distributed computing and e-business processing that is changing the way software are designed, architected, delivered and consumed. After detailed exploration, it is bring into being that numerous troubles be positioned in the delivery the information and services using ICTs with Service oriented Computing Architecture (SOCA). Use of e-document business deal applications in government fields, have need of to conclude these applications into service oriented computing model that encodes properties, capabilities, interfaces, and effects of these applications in an explicit, platform independent form. SOC model provides government bodies to efficiently serve their services by defining a new resource.

II. SERVICE ORIENTED COMPUTING

Service-Oriented Computing (SOC) is a new computing paradigm that utilizes services as the basic constructs to support the development of rapid, low-cost and easy composition of distributed applications even in heterogeneous environments. The promise of Service-Oriented Computing is a world of cooperating services where application components are assembled with little effort into a network of services that can be loosely coupled to create flexible dynamic business processes and agile applications that may span organizations and computing platforms. The subject of Service-Oriented Computing is vast and enormously complex, spanning many concepts and technologies that find their origins in diverse disciplines that are woven together in an intricate manner. In addition, there is a need to merge technology with an understanding of business processes and organizational structures, a combination of recognizing an enterprise’s pain points and the potential solutions that can be applied to correct them. [3]

Service-Oriented computing architecture must be developed as autonomous sets of interacting services contribution which have well-defined and very clear interfaces to their prospective end users and also supporting technology must be available to permit application programmers to look around collections of services, choose those as awareness, and accumulate
them to create the required functionality.

A. Web-Service Architecture

Recently web services provide an important instantiation of the services oriented paradigm, and comprise infrastructure for specifying service properties, interaction between services, mechanisms for service invocation through a variety of protocols and messaging systems, support for a services registry, tunneling through firewalls, and scheduling. A variety of languages and support infrastructure for Web Services has developed.

B. Key Elements For SOCA

SOCA emphasis falls on the architecture, because many of the key techniques for its components — databases, transactions, software design — are already well understood in isolation. Practical success depends on how well we can place these techniques into a cohesive framework, so that we can apply them in production software development. Recent progress on standards and tools is extremely encouraging in this regard. [4], [5] Several SOCA’s can coexist provided they satisfy some key elements for SOCA:

Loose coupling:

Tight transactional properties maintaining and guaranteeing data and state consistency — generally do not apply among components because conventional software architectures do not typically include transaction managers. Although it would not be appropriate to specify data consistency across the various components’ information resources because they are autonomous, we must consider the high-level contractual relationships that specify component interactions to achieve system-level consistency.

Implementation neutrality:

The interface for each component matters most, because we cannot depend on the interacting components’ implementation details, which can be unique. In particular, a service-based approach cannot be specific to a set of programming languages, which cuts into the freedom of different implementers and rules out the inclusion of most legacy applications.

Flexible configurability:

An SOC system is configured late and flexibly, which means different components are bound to each other late in the process. Thus, the configuration can change dynamically as needed and without loss of correctness.

Persistence:

Services do not necessarily require a long lifetime, but because we are dealing with computations among autonomous heterogeneous parties in dynamic environments.

C. Engineering an SOCA

SOA is not traditional architecture while it has different mechanism to create and involvement in business collaborations and describes the commercial transformation in active manner.

Figure: 1 presents a different view of what is involved in engineering an SOA. In this case, service composition plays a key role. Service composition is crucial because it lets us create new value from existing parts. Reuse is a well-regarded concept in traditional software development, but it is merely a convenience, whereas reuse is essential in the case of services, because services cut across organizational boundaries. In traditional software, for example, you can implement your own data Architecture or graphics package, but you cannot implement your own insurance provider or airline. You have no choice but to deal with other people’s services, so you must be able to put them together — or compose them — appropriately. Composite services apply in many practical settings. Portals, for example, aggregate information from multiple sources: the challenge is to personalize the information for each user. Electronic commerce can involve aggregating product bundles to meet specific user needs. Virtual enterprises and supply-chain management reflect generalizations of consumer-oriented e-commerce scenarios, because they include subtle constraints among a larger number of participants. [6]

Figure 1. Service-oriented architecture. Engineering a service oriented computing system is a process of discovering and composing the proper services to satisfy a specification, whether it is expressed in terms of a goal graph (top), a workflow (bottom), or some other model.

III. E-GOVERNMENT AND SOCA COMPONENTS

The concept of e-government has evolved from the domain of e-business where enterprises need to collaborate with partners, suppliers and customers
for the effective delivery of e-services. While needing integration and communication between business processes and underlying information systems in disparate organizations, in a non-process-oriented, legacy system driven public sector, this presents a significant challenge. While cross organizational process and information systems integration barriers are seen in the literature as presenting the main technical challenge for realizing fully integrated e-government services, it is found that a legacy of bureaucracy and established illogical routine tasks were preventing the government from expediting their e-government initiative. [7]

Service oriented Computing Architecture can be classified into four key aspects: first key aspect is the existing network of government agencies (GAs), second aspect of service oriented interface on inheritance systems of GAs that enclose them to SOC nodes. Third key aspect e-government service manager (EGSM) and National Description, Discovery and Integration (NDDI) Agency that are central to E-government model and allow G2C, G2B and G2G tractions to practical. Last component is public and business nodes that will consume the government offerings. [8]

V. SPIRIT OF THE APPROACH

To implement effectively, we must be able to specify services with precision and greater structure. Those are not from the same administrative space as the provider will eventually invoke the service, and differences in assumptions about the services. Once a service is selected, the requestor and the provider must develop a finer-grained sharing of representations. They must be able to participate in conversations to conduct long-lived flexible transactions, in such a manner that they can establish and monitor a service-level agreement. To implement the e-government transaction model governments have to work on both, the establishment of government agencies and G2G transactions with enable G2B, G2C, C2G and B2G transactions SOCA will enclose on obtainable inheritance systems that will allow the registry, of offered services by the agencies, discovery and invocation of available services. This approach showing User Interaction being able to provide a single, interactive user experience, provide Connectivity and communications between citizens and government and build up information integration with effective delivery of services.

V. CONCLUSION

The purpose of this paper was to initiate progress and benefits obtain by the ICT for the operation between government bodies and citizen and business. Service Oriented Computing model is the primary solution obtains by the ICT that enables applications enlargement to accommodate inheritance systems with the introduction of dynamic expansion and interoperability for complex information and services. With the various key factors such as objectives, transportation and regulatory situation, executive and back-office procedures, human being resources, along with others should be considered to be create an move toward approach to e-governance progress and growth. As all governments are pursuing to transform governmental processes, so that the use of the Internet and electronic processes become central to make e-government a reality [9]. It is very clear to explore that the all Government bodies, citizen and business can transform and obtain benefits vice versa using service oriented computing model.

REFERENCES


