# SOA

# CLOUD

in the

#### SOA

- Service Orientation
- Mostly software-intensive
- Application integration
- Loose coupling
- Reuse via shared services
- Asset-based utilization
- Service components and composition
- Predominantly used within the enterpression

#### Cloud

- XaaS
- Mainly hardware-centric
- Resource provisioning
- On-demand scalability
- Multi-tenancy
- Utility-based consumption
- Infrastructure pooling and outsourcing
- New business model for service delivery

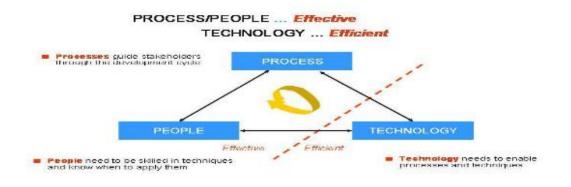
### Before SOA

### After SOA

Shared services - Collaborative - Interoperable - Integrated Application Dependent Business Functions Composite Applications Order Composite Application **Processing** Mangement **Check Customer Check Customer** Calculate Shipping Composed Charges | Status | Status **Business Process** Determine Determine Order Status Product Product Check Credit Reusable Business Services Availability ... Availability . . . . **Verify Customer** Credit Reusable Create Check Check Reusable Reusable Service Invoice Customer Order Service Service Order Status Status Status . . Reusable Reusable Check Check Reusable Reusable Service Service Credit Inventory Service Service Data Repository Data Repository Data Data External External Marketing Sales CRM Finance Sales CRM Finance Marketing Warehouse Partner Warehouse Partner

### Introduction

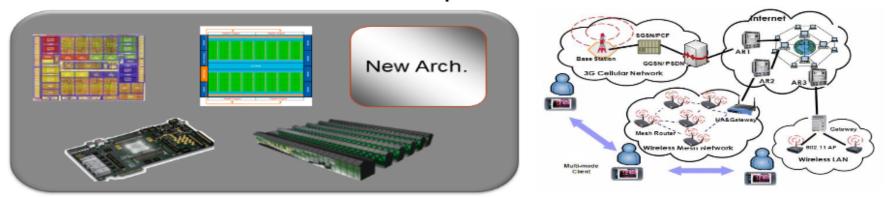
- Enterprise wide transformation poses significant challenges for process, people and technology.
- Early identification of challenges and defining a mitigated approach achieves a smooth transformation.
- Challenges include resistance to change by





### Introduction

- Factor include role and responsibilities, management skills development and discipline and cultural shifts.
- Creating awareness in organization for the need to drive such a transformation in the best interests of business.
- Challenges include dealing with infrastructure complexity- heterogenous hardwares and varying versions of s/w across disparate environments.



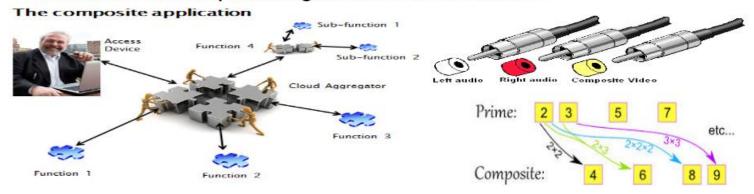
# Service Management

- Service Management is one of the similarities between clouinfrastructure and SOA approaches.
- Developing an integrated service management approaches for both the application services and infrastructure service together will drive efficiency in IT operations by improving resource utilization and improving service levels.
- Such an integrated service management can move IT toward to an end-to-end service-oriented environment.
- This will enable business agility by better aligning IT with the Business.

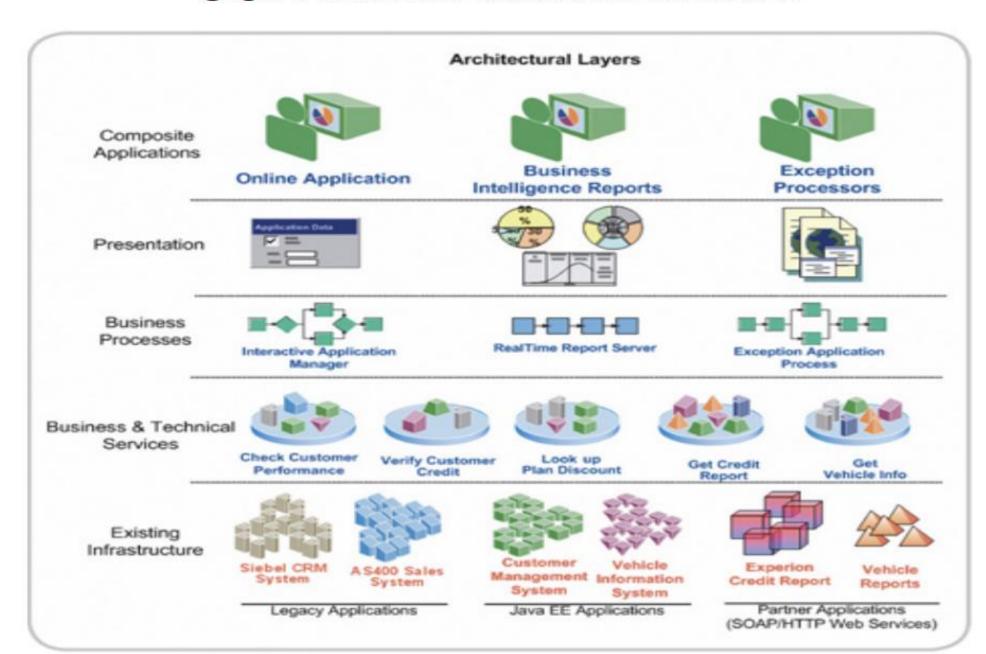


# Enterprise Infrastructure and SOA

- SOA makes IT applications into composite applications.
- Instead of traditional monolithic applications, composite applications are created, composed of many services often developed and deployed independently by separate development teams on different schedules.
- By adhering to common standards and interfaces, development of new composite applications and extension of existing applications is made easier through reuse of existing services and rapid integration of new service

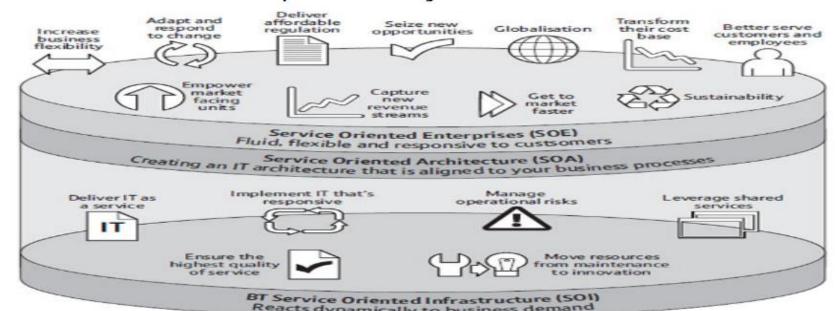


### **SOA** based Infrastructure



# SOA journey to infrastructure

- The path to transformation consists of a long journey with a <u>staged approaches</u>, leading to the ultimate goal of a service-oriented enterprise.
- Multiple islands of disparate infrastructures in today's environment need to be consolidated to gain control, reduce cost and become operationally efficient.

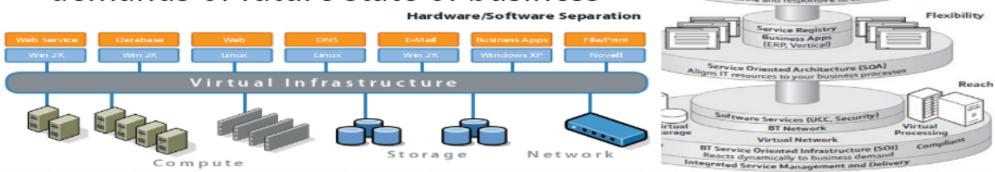


# SOA journey to infrastructure

- The next step is to introduce <u>virtualized infrastructure</u> to improve utilization levels and allowing dynamic flexibility to move resources and capacity to meet fluctuating workload demands.
- Service orientation is achieved by building capabilities on the top of virtualized and automated infrastructure.
- In Service orientation state- infrastructure is provided and utilized as a service, rather than in piecemeal.

Cloud computing will help to further the service orientation paradigm, to meet the scaling

demands of future state of business

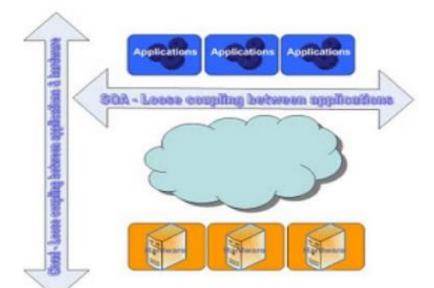


Service Oriented Enterprise (SOF)

### SOA and Cloud

- SOA binds how you will both deliver and leverage cloud based services. Cloud computing relies on service-orientation to loosely-couple applications to underlying infrastructure model for using web services
- It uses web services to compose complex, customizable, distributed applications and encapsulate legacy systems

**SOA & Cloud Computing** 



# Infrastructure Technologies

 Cloud infrastructure is based on virtualization- dynamic systems that enable the definition and delivery of resources on demand.

 Current technologies can deliver hundreds of virtual servers on small cluster of physical servers, enabling flexibility and

high availability.



### **SOA** Defination

SOA is an approach to architecture that is intended to promote flexibility through encapsulation and loose coupling.

SOA is defined by what a service is.

Services are defined by the following characteristics:

- Explicit, implementation-independent interfaces
- Loosely bound
- Invoked through communication protocol
- Stress location transparency and interoperability
- Encapsulate reusable business functions



- Build on existing SOA Roadmap
- Adapt to experiences
- Adapt focus across all 6 domains

#### Review execution of SQA Roadmap

- Phase Milestone Review
- Learn by doing
- Review lessons learned
- Consider additional capabilities & functionality required from SOA Roadmap

OPTIMISE

#### DEFINITION

#### Define initial SOA Roadmap

- Planning & Scope
- Current Reality (SOA Maturity)
- Future Vision (SOA Capabilities)
- Gap Analysis (Iterative & Incremental)

#### EXECUTE

SOA

Roadmap

#### Execute Incremental Deployment of defined SOA Roadmap

- Business Strategy & Process
- Architecture
- Building Blocks
- Projects & Applications
- Costs & Benefits
- Organization & Governance





SOA Service Oriented Architecture

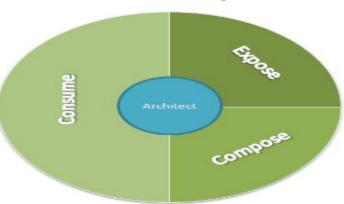


PRACTICE Employ best practice methology

The core components which make up an SOA implementation

# 1.SOA Life Cycle

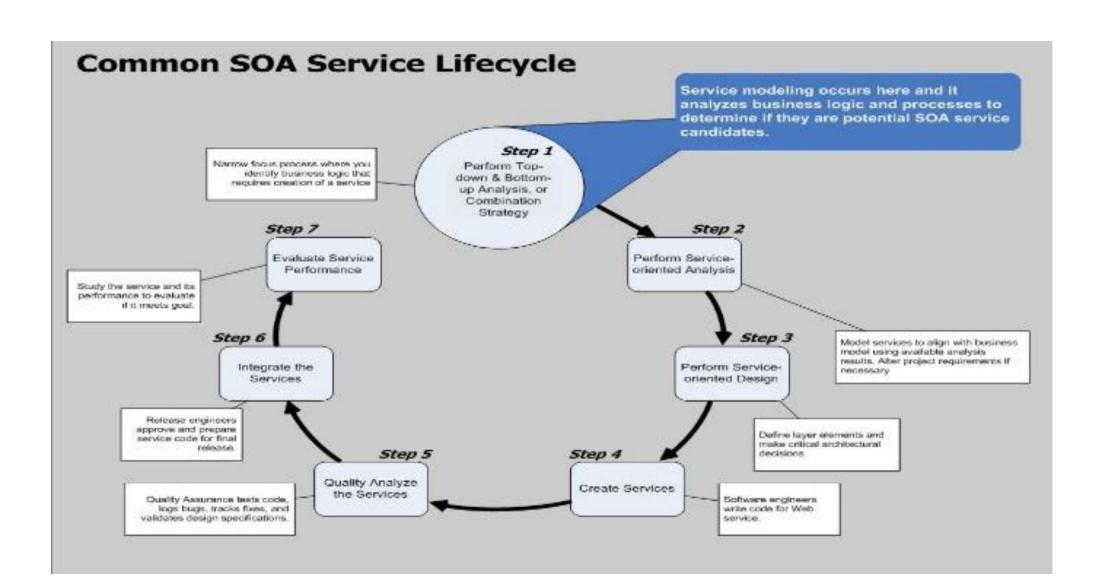
- SOA lifecycle resembles "traditional" application lifecycle, but introduces new terminology.
- SOA in terms of life cycle requires a start in the SOA model Phase by gathering business requirement and designing their business processes.
- Once they have been optimized the business processes, they implement it by combining new and existing services.
- These assets are then deployed into a secure and integrated environment for integrating people, processes and information.



# 2. Service Oriented Computing

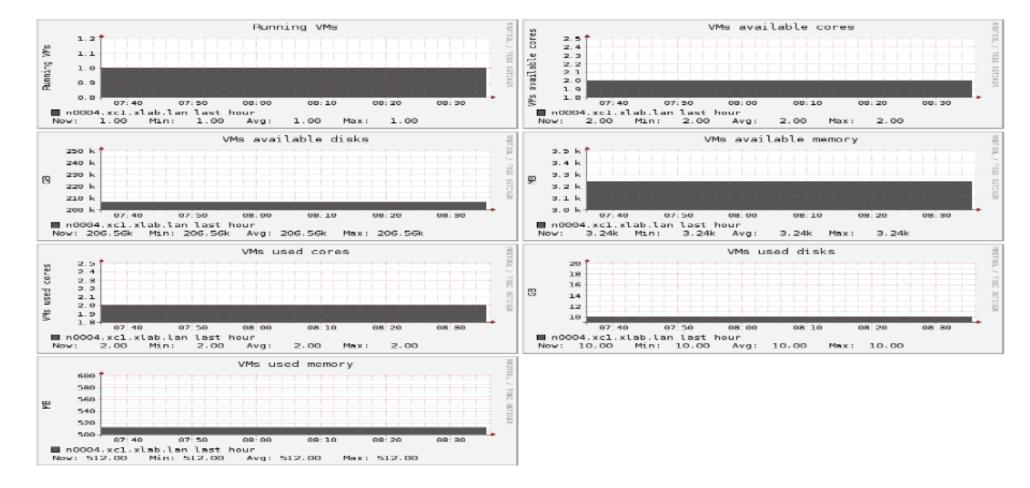
Service orientation is a design paradigm comprised of specific set of design principles. Its most important feature is its reliance of the separation of concerns design philosophy.

Separation of concern (SoC) is based on the simple fact that a problem becomes easier to approach if it is divided into small units and handled separately



## SOA and laaS

SOA principles of service is applied in case of IaaS. It provides infrastructure elements as a service

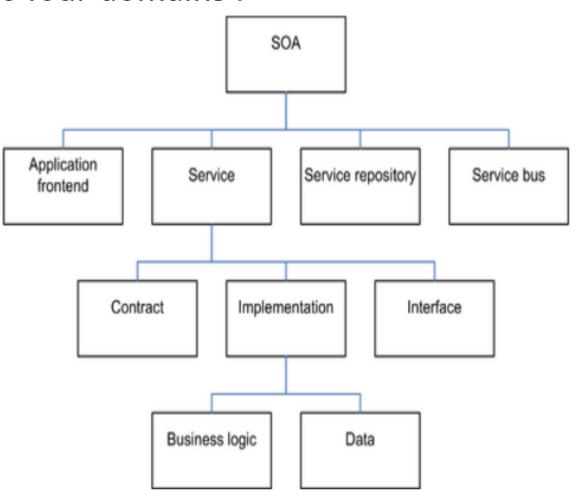


### 1. Architecture

Cloud Infrastructure has many service components.

Services can be divided into four domains:

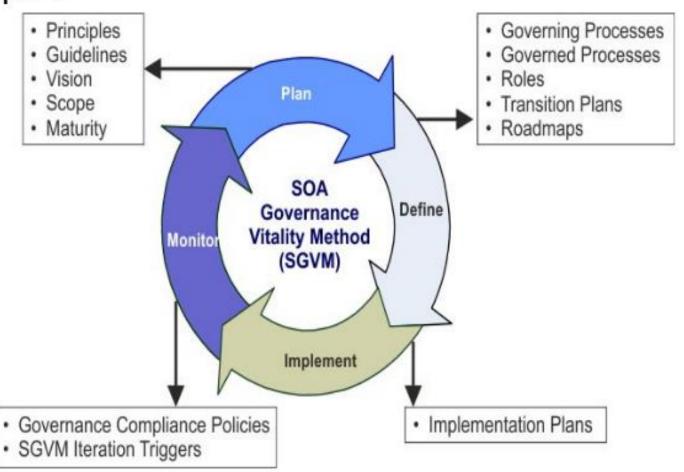
- Application Services
- Information Services
- Common IT services
- Infrastructure Services



# SOA based Cloud Infrastructure steps

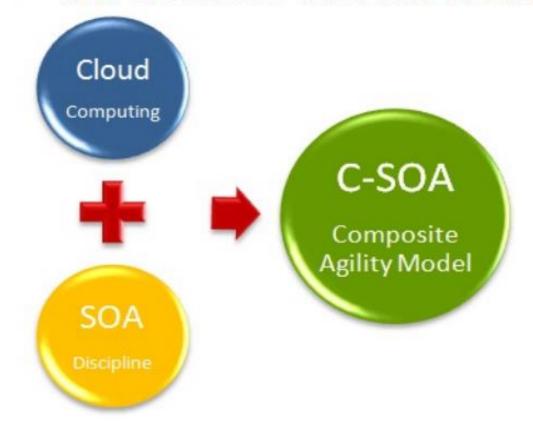
Enterprises that intend to harness cloud computing must consider the following steps:

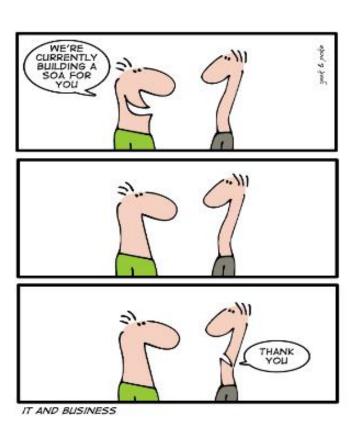
- Analysis and Strategy
- Planning
- Implementation
- Value-driven



### 1. SOA and Cloud Infrasture

- SOA-based cloud computing model builds on the IT and internet models.
- It is in essence a service-oriented architecture





### SOA Business and IT services

- Different management tools are needed for SOA architecture for comprehensive integration of SOA architecture.
- These tools help to leverage the benefits of infrastructure services.

# Thank you