Lesson 8
Service Oriented Architecture

Service

- A mechanism enabling the provisioning of access to one or more capabilities described in service description
- An Interface for the service providing the access to capabilities
- Has a service description about the capabilities
- Applications or enterprise can subscribe on selection among number of services
- A service level agreement (SLA) binds the enterprise application and service

Service

- The access to each capability consistent with the constraints and policies
- A collection of self contained, distinct and reusable components
- Providing the logically grouped and encapsulated functionalities. Example: Traffic lights synchronizing service

Service Oriented Architecture (SOA)

- Software architecture model consisting of Services, Messages, Operations and Processes (Fig. 5.4)
- SOA components distribute over a network or Internet in a high level business entity

Service Oriented Architecture (SOA)

- SOA enables development of new business Applications and Applications integration architecture in an Enterprise

SOA

- Models the number of services and interrelationships
- Each service initiates on messages from a process or service

Enterprise Layer in SOA

- Communicates with business processes sub-layer for Applications Integration
- Also Communicates with Service Discovery, Service Selection and Services Orchestration layer (Fig. 5.4)

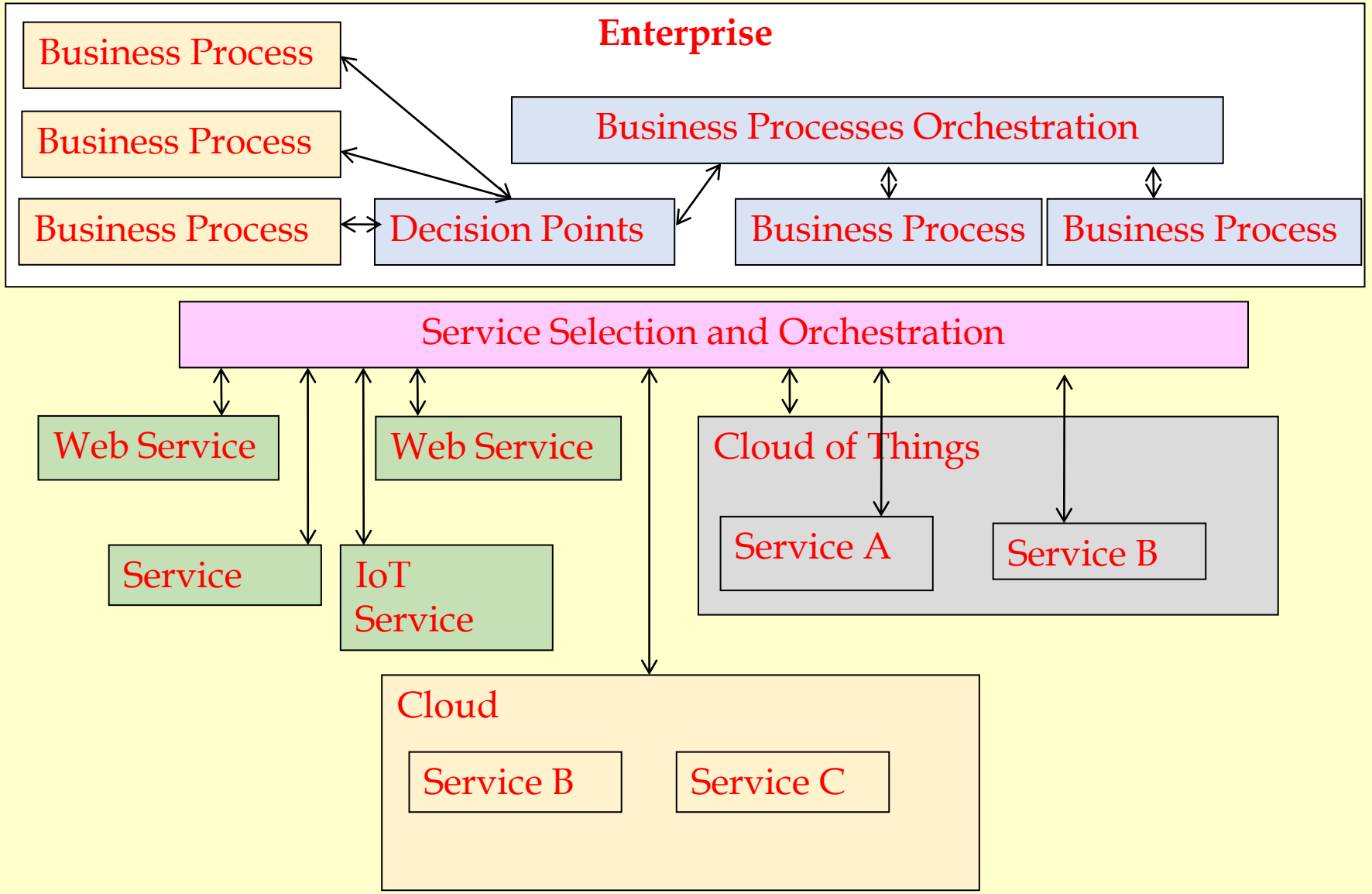

Fig. 5.4 Complex Applications Integration Architecture and Service Oriented Architecture (SOA) of cloud based IOT services, web services, cloud services and services.

Service Discovery, Selection and Orchestration Layer

- Communicates with (i) web Services,
- (ii) IoT Services,
- (iii) Cloud of things and
- (iv) Cloud (Fig. 5.4)

Service discovery, selection and Orchestration software layer

- Components select the services for Applications Integration
- Service Orchestration software coordinates the execution of the number of services, cloud services, cloud IOT services and web services. Services run in parallel and a number of processes in sequences.

Service Orchestration software sublayer

- Enables Services run in parallel as well as a number of processes in sequences.

Service Discovery, Selection and Orchestration Layer

- Cloud of things sublayer Communicates with services
- Cloud sublayer Communicates with services

Summary

We learnt

- SOA: A model of software architecture consisting of Services, Messages, Operations and Processes
- Service Discovery, Selection and Orchestration

End of Lesson 8 on
Service Oriented Architecture