


Getting started with Enterprise Application Integration
(EAI)
using Enterprise Service Bus (ESB)



Agenda

What is EAI ?

What is ESB ?

Why ESB required in EAI?

Core Function of ESB

ESB Architecture

Implementation of Oracle Service Bu

Enterprise Application Integration (EAI)

Enterprise Application Integration (EAI) allows for the unrestricted sharing of data and business processes among any connected heterogeneous applications.

Different form of Integration

A2A (Application to Application)

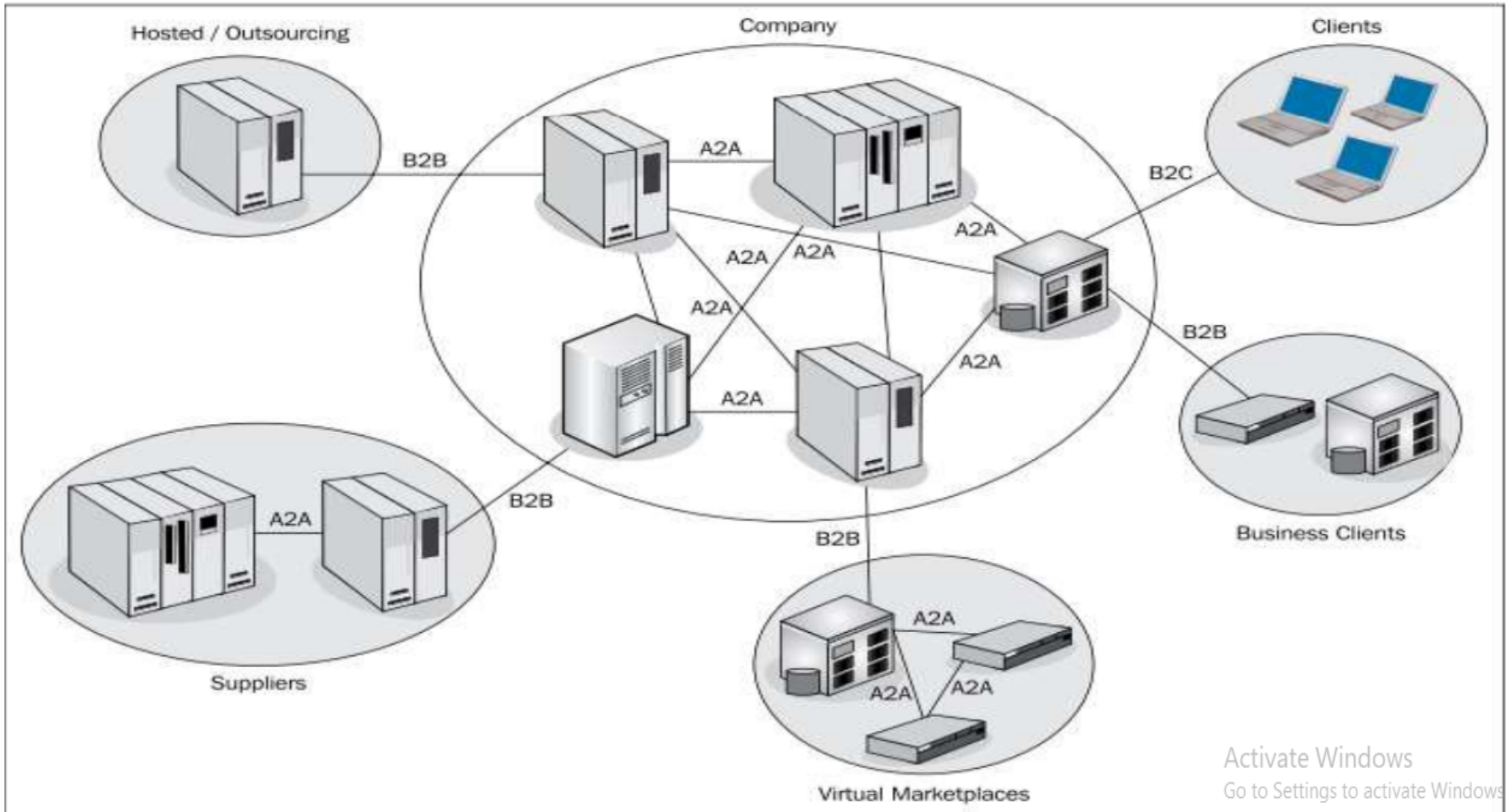
B2B (Business-to-Business)

B2C (Business-to-Consumer)

C2B (Consumer-to-Business)

C2C (Consumer-to-Consumer)

Enterprise Application Integration (EAI)



Integration Approach

- 1) Point to Point Architecture
- 2) Hub and Spoke Architecture
- 3) Distributed Integration Architecture
or Peer to Peer Architecture
- 4) Service Oriented Architecture

Point to Point

The original architecture used to support systems integration

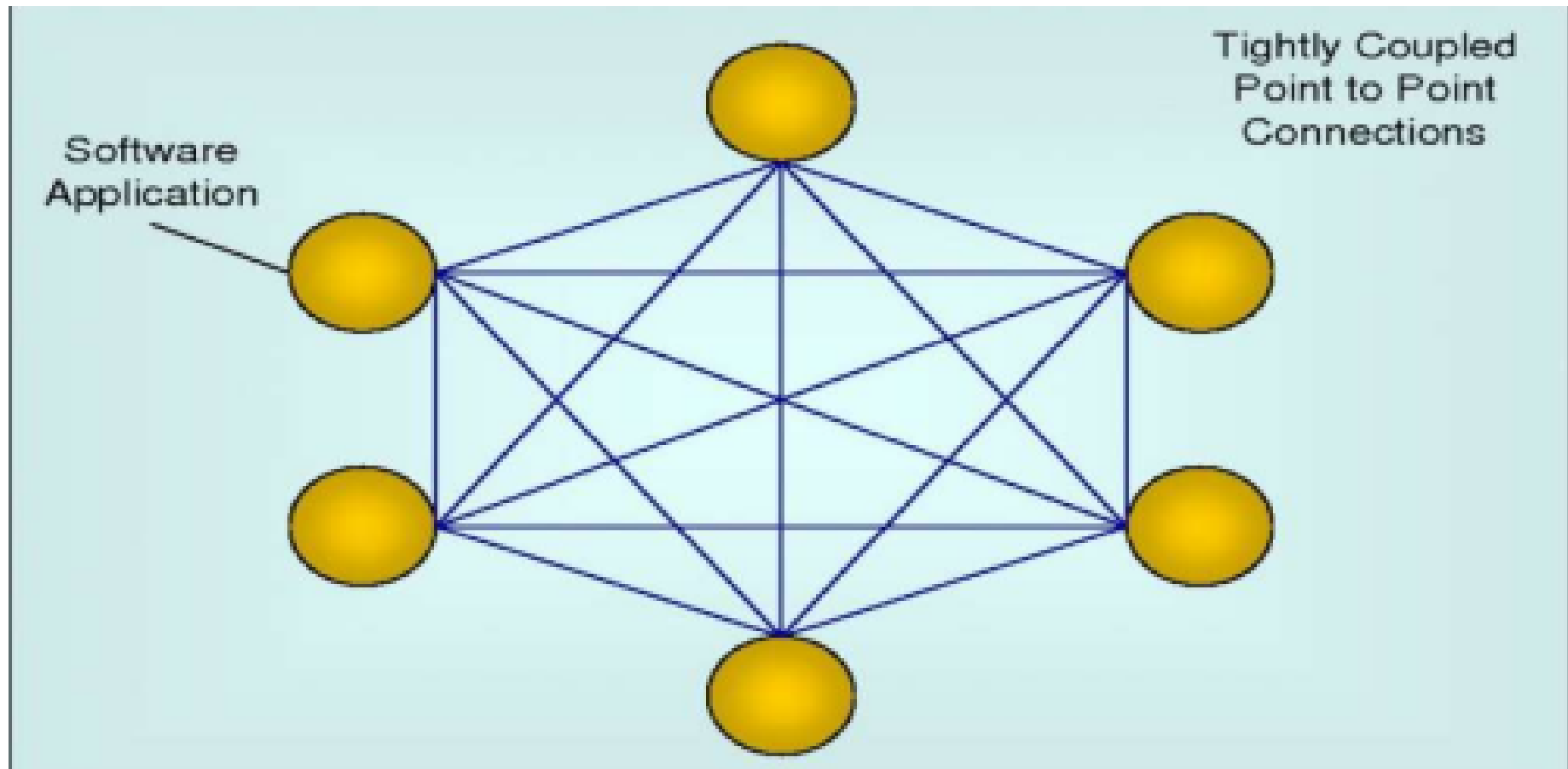
Advantages :

- Point to point solutions are often fast and efficient
- The efficiency is derived from applications being tightly coupled ---

Disadvantages :

- Complexity increases as applications increase resulting in high maintenance cost
- Lack of flexibility
- Tightly coupled nature makes it difficult to manage

Point to point



Hub and Spoke

The earliest formal integration technology.

Works on the principle that all information coming from the applications had to be processed within a single machine or server called a “hub”.

Advantages :

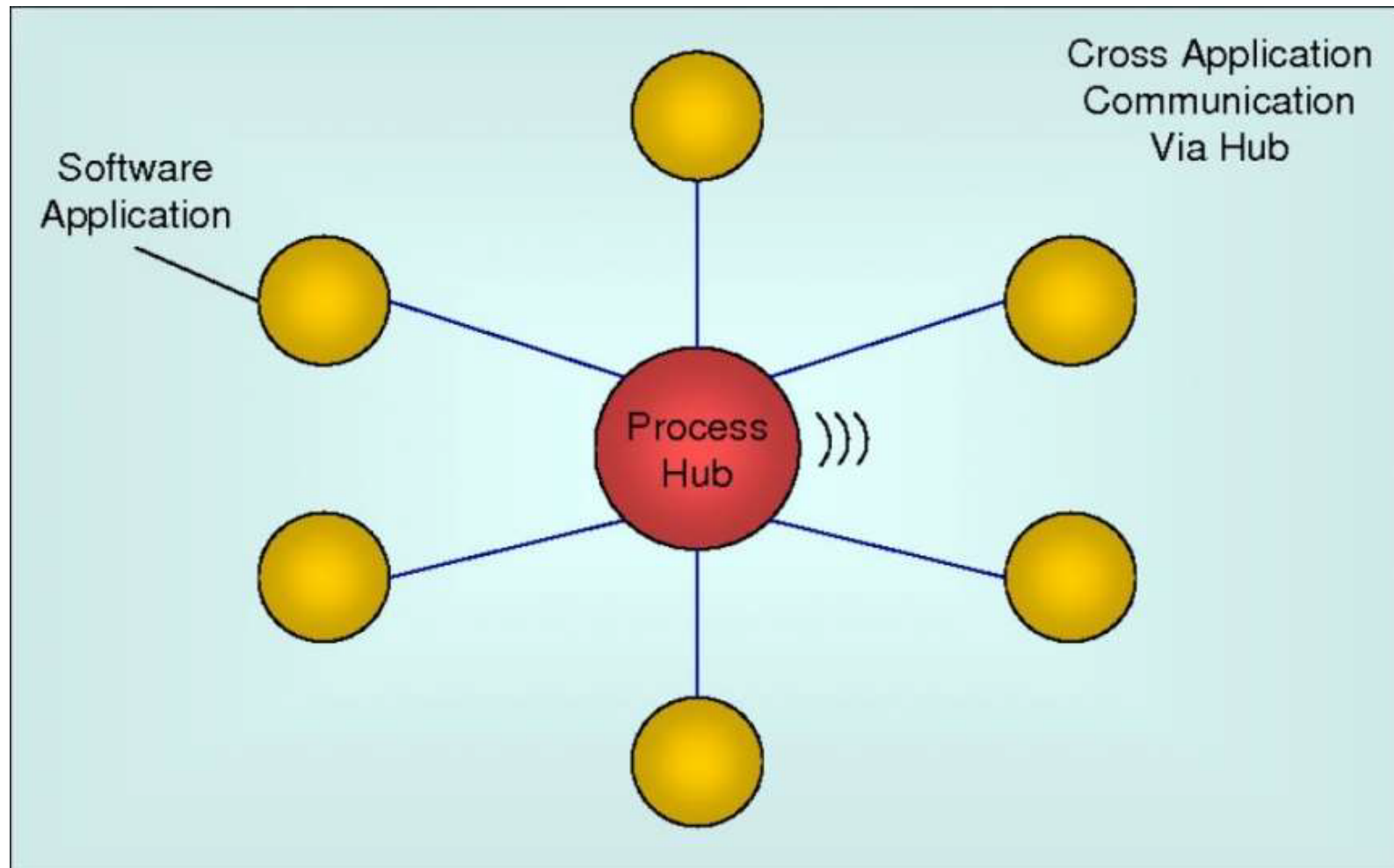
- Less complex than Point to Point.
- Preferred architecture for achieving an easily controlled and managed environment in medium sized integration project.

Hub and Spoke

Disadvantages :

- Too much processing taking place in central hub.
- Lack of standards
- Most of the solutions are proprietary hence expensive
- As the number and complexity of processes increase, performance can suffer and hubs become difficult to manage, maintain and extend
- Pure Hub and Spoke implementations do not scale well. One solution is to create a federated architecture.

Hub and Spoke



Distributed Integration Architecture

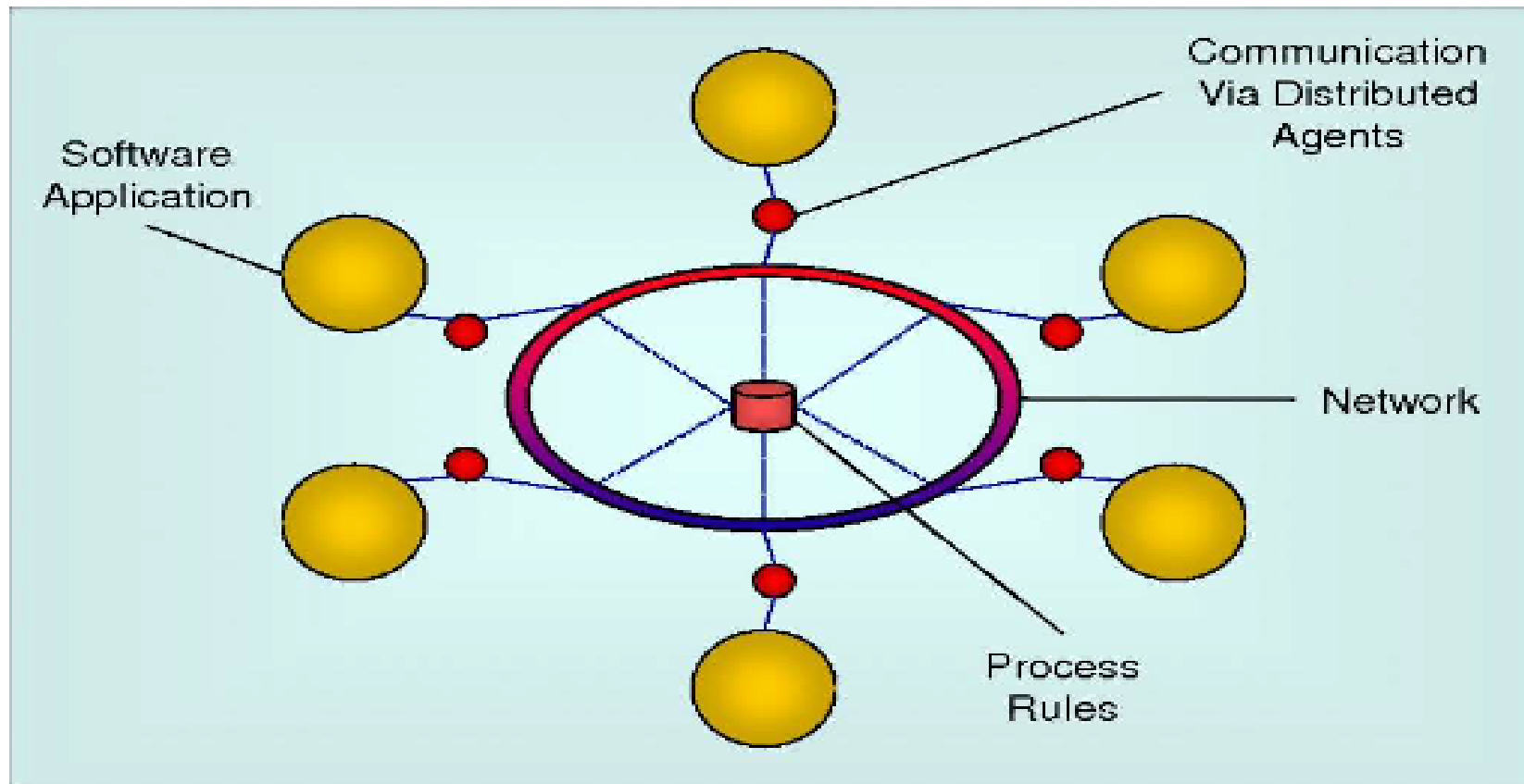
One solution to the Hub and Spoke scalability issue is to perform message translation, routing, splitting and combing closer to the source and target systems by using smaller computers known as “agents”. Agent computers are connected to just one system and reduce the processing load on that system. Also known as Peer to Peer architecture.

Distributed Integration Architecture

Advantages :

- Distributed work load
- Gain in processing efficiency
- Ability to scale well

Distributed Integration Architecture



Distributed Integration Architecture

Disadvantages :

- Early attempts at Distributed Architecture would work only where the internal and external facilities operated under the same distributed technology (CORBA, COM, JMI).
- Not so effective where Line Of Business involves mergers and acquisition.

Service Oriented Architecture

service Oriented Architecture is essentially an enhanced version of Distributed Architecture that uses loosely coupled software services to support the requirements of business processes and software users.

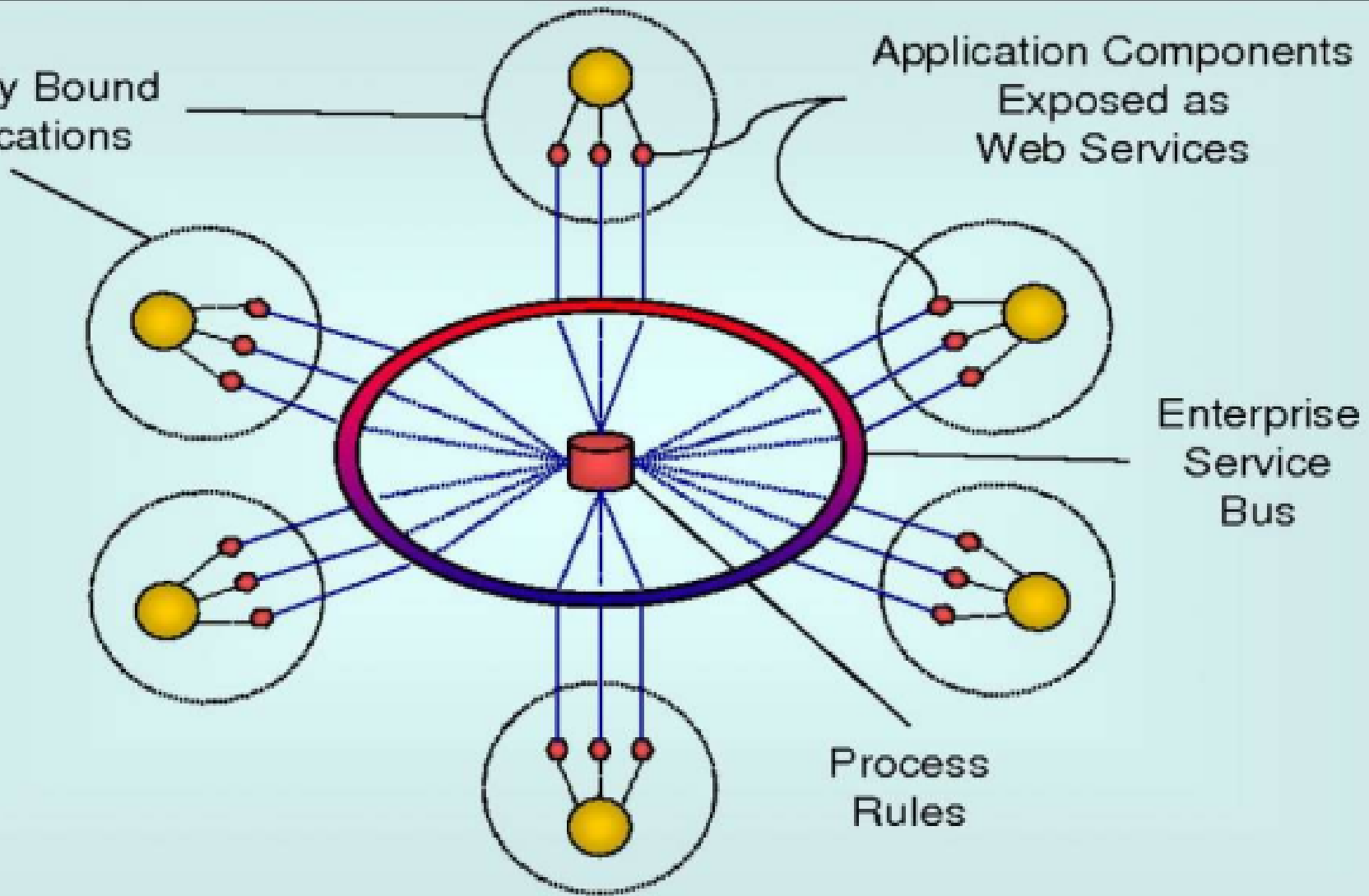
Advantages :

- Web services as the communication standard.
- Loosely coupled, granular
- Interoperability
- Efficiency – Because of Reusable nature
- Scalable
- Reliable
- Secure

Maintainable ESB has become the accepted standard for the creation of an organizations Service oriented architecture.

Loosely Bound Applications

Application Components Exposed as Web Services



Enterprise Service Bus

Process Rules

