

OSGi Alliance Community Event

Siemens OpenSOA

- A Unified Communications Service Framework
built on OSGi.

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Tuesday, June 10th 3:45PM

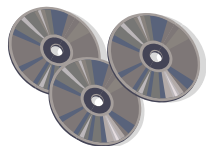


OpenScape Unified Communications Suite

Customer Application
& Business Processes

OpenSOA

OpenScape
Applications



OpenScape
Voice

OpenScape
Video

OpenScape
Messaging

OpenScape
UC
Application

OpenScape
Mobility

OpenScape
Contact
Center

and more...

OpenScape Unified Communications Server

SIP Session
Control

Federated
Presence

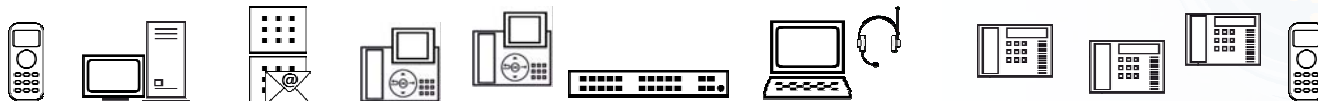
QoS
Management

Session Detail
Reporting

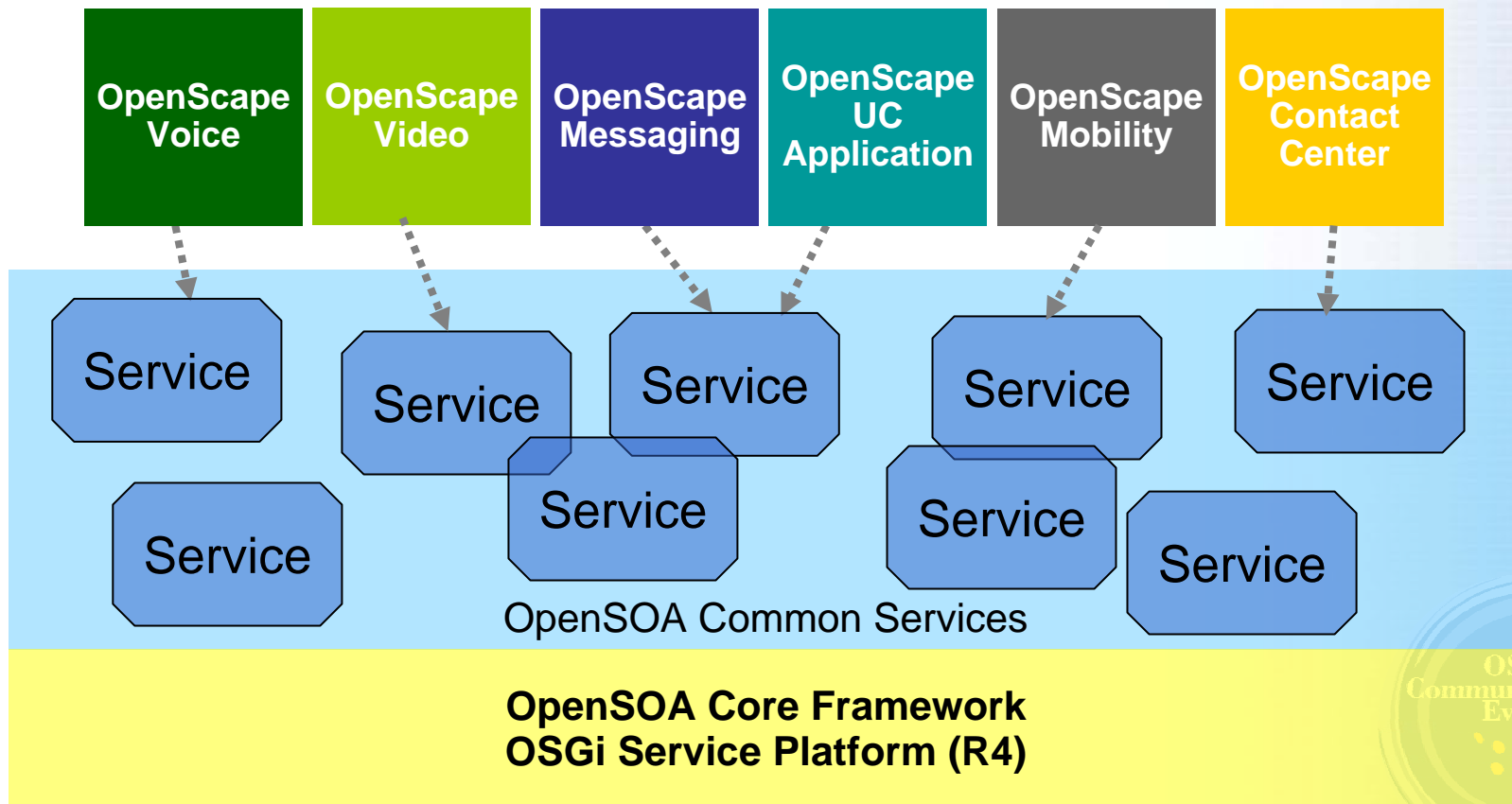
Admin. &
Licensing

Availability
Management

and more...



Architecture Overview



Siemens OpenSOA core principles

- **Product Line Architecture**
 - OpenScope Unified Communication Suite is implementing a Product Line approach. Various Applications can be composed out of a set of reusable, modular SW assets (services). The Product Line Architecture defines a prescribed way how services interact with each other and how they connect with the customer IT infrastructure.
 - Introducing a Product Line reduces development cost by improving reusability and time to market.
 - A product line increases communality throughout the product portfolio and hence increases not only the business value but also serviceability and usability aspects.
- **Service Oriented Architecture**
 - Services can implement business logic, commonly used functions, management logic and connectors to the customer communication and IT infrastructure.
 - These assets are defined following the SOA paradigm: loosely coupled services with well defined interfaces.
 - A SOA approach
 - helps to decouple compile time and runtime dependencies.
 - allows more flexible deployment and configuration options.
 - improves custom application and solution development (“pick and choose”).
- The **OSGi Service Platform** has been chosen as the service execution environment for Siemens OpenSOA.



Architecture Principles

- **Service and Component Model**
 - An OpenSOA service is basically implemented as an OSGi Bundle.
 - Use OSGi Bundles as a means to componentize your SW through all phases (design and implementation, production, deployment, execution).
 - Encapsulation into Bundles significantly reduces the complexity of your application and improves the re-use potential of your SW assets.
- **Separation of Concerns**
 - Introducing a container architecture helps you to separate business logic from infrastructure logic and again it reduces complexity:
 - Focus on customer requirements & business logic and implement services/ components (mostly POJO's).
 - Focus on operational requirements & infrastructure logic: can be implemented as additional OSGi bundles enhancing the core service platform depending on your needs. Or apply other means like interception of the service execution.
 - As a result developers can devote themselves to either business logic or to operational aspects, depending on their individual skill sets.



Architecture Principles

- **Service Execution**
 - Delegating the Lifecycle Management and Configuration Management to OSGi Service platform mechanism simplifies implementation and increases flexibility in your deployment (i.e. update of a single bundle, deployment in a distributed environment, configuration changes, ..).
- **OSGi Design Patterns / Best Practices:**
 - Provide “best practice solutions” for recurring problems.
 - Make yourself familiar with these patterns and leverage them as a means to standardize your design and implementation.



Decision Rationales

The initial decision for OSGi was based on a prototype implementation and was evaluated against a standard J2EE environment.

Major **decision criteria**:

- Lightweight approach / Footprint
- **Scalability, Performance & Throughput**
- Openness / Extensibility
- Stability & Maturity
- Ease of use / Learning curve



Integration Technology

Application- and Business Process Integration

- Siemens OpenSOA is utilizing OSGi technology as a means to improve the integration opportunities of unified communication features into customer solutions.
- Utilizing open, standard based interfaces and technology brings significant value to customer and business partner. OSGi technology seamlessly fits into an overall enterprise IT SOA landscape.
- SEN is contributing to the enhancements of OSGi through the Enterprise Expert Group in order improve interoperability amongst different vendors.

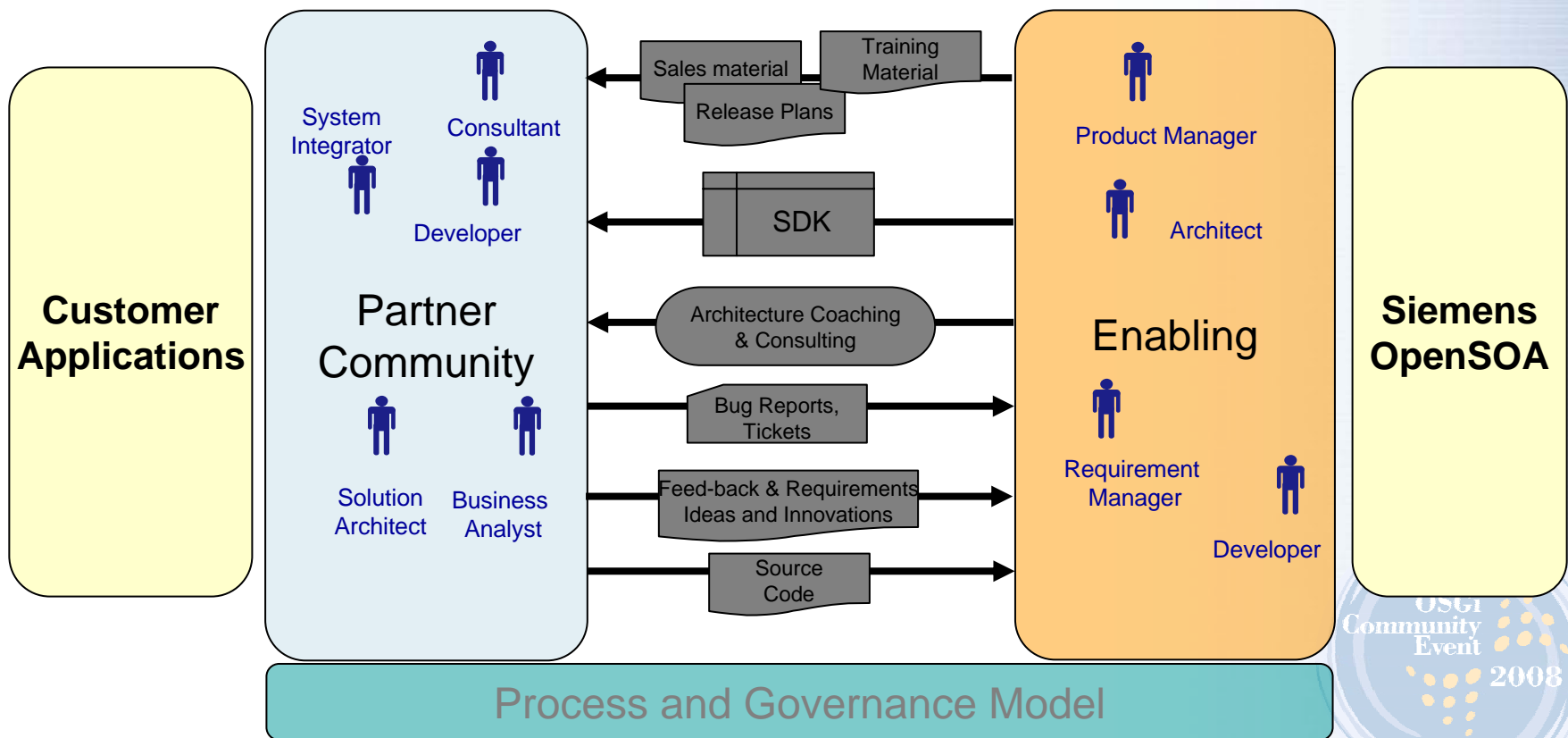


Siemens OpenSOA Community

- SEN is establishing a **Partner Community** to improve the value of the product offering and to increase market coverage for SEN and its business partners.
- The Partner Community can leverage and enhance the functionality of the OpenScape Unified Communications Suite for their customers.
- Business Partners can rely on a growing developer community that is familiar with OSGi. Partners can utilize middleware and elements of other vendors that are also building their products on top of OSGi.



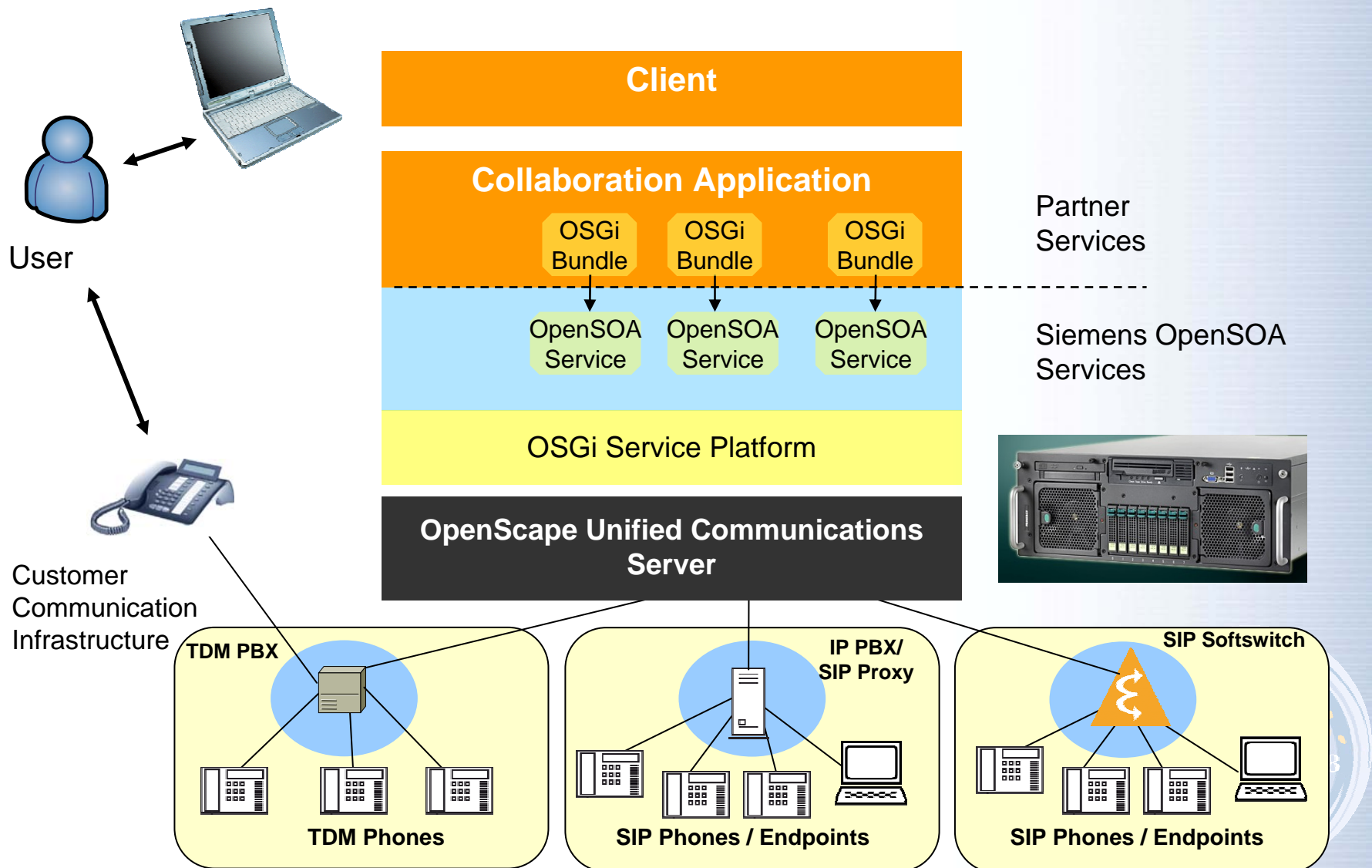
Open Community Model – (vision)



Success Story

- A Siemens Enterprise Communication business partner has integrated a subset of Siemens OpenSOA into its collaboration application.
- OSGi Technology and it's service platform (Equinox implementation) is being used as a common integration technology.





Conclusions, Summary, Recommendations

- First project started in 2004 to build an architectural baseline for the Product Line, major technology decisions / small team of 25 people over 9 month.
- Release of first products in 2006 (Management Application, Media Server) (medium development of about 100 developers).
- OpenScape Unified Communication Application released in Mai 2008 (large scale development with a peak of 250 developers distributed across 5 sites).
- Although OSGi has a lot of potential to simplify development, you have to consider a learning curve. Plan for education and “change management” in a large scale roll-out.
- Establish a core architecture team that evangelizes the vision, develops the core architecture and coaches the development teams.



Thank You ! Any Questions ?

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