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IBM Software Group

TPF Users Group Spring 2007

SOA Scenarios and Best Practices

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Venue: Distributed Systems Subcommittee

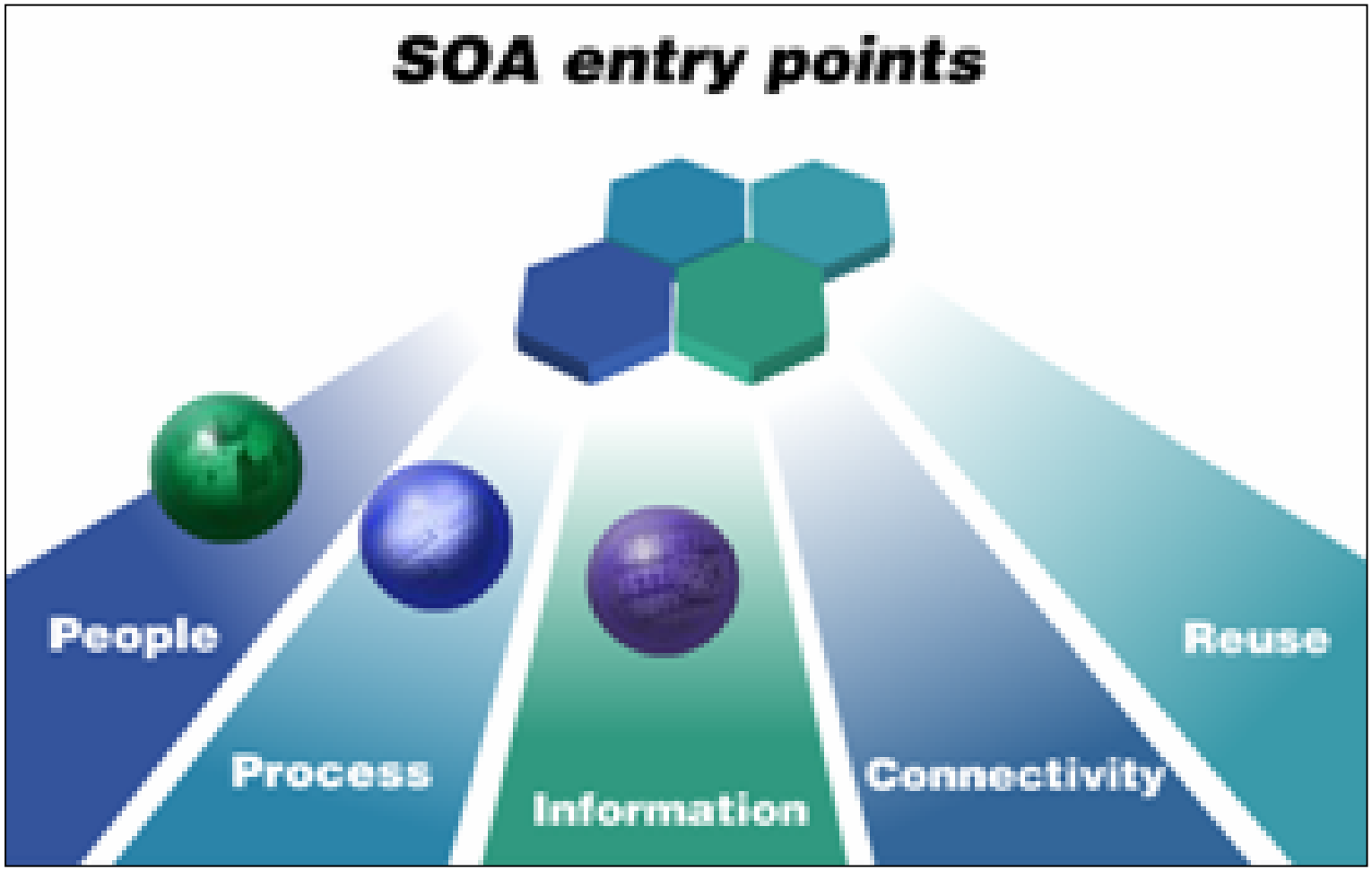
AIM Enterprise Platform Software
IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

Agenda

- Why adopt SOA
- SOA Entry Points and Scenarios
- SOA Roadmap for TPF
- SOA Principles
- Questions and Answers

Why Adopt SOA?

- Enable greater reuse and availability of existing functions and data
- Very good support available for development tools
- Very good support available for test tools
- Use a standardized message transmission/format
- Your corporate strategy



SOA Entry Points

- Business related
  - **People**: allows you to leverage new methods of customer access into your system, for example, wi-fi, cell phones, browser, etc.
  - **Process**: TPF applications can participate in business processes, but generally would not drive this entry point
  - **Information**: TPF is a treasure-trove of information and is a great candidate for a “super data server”

SOA Entry Points, cont'd

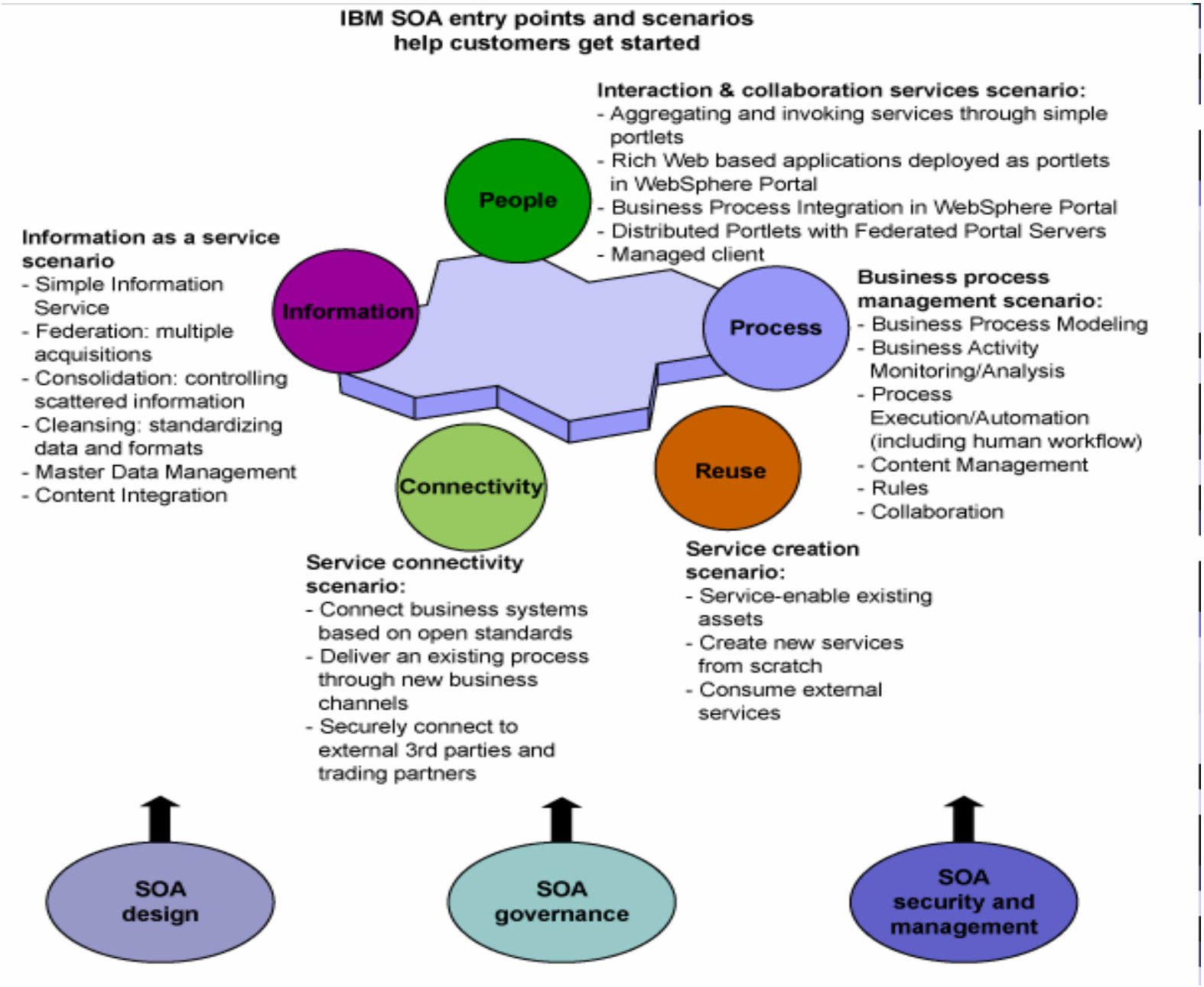
- IT Related
  - **Connectivity**: allows business, customer, and business partners to access your business logic and data
  - **Reuse**: existing and new applications can be orchestrated into business processes

SOA Scenarios

- **Service creation**
  - Expose existing applications as a web service in a manner that is openly consumable by several platforms
- **Service connectivity**
  - Adapt messages from backend systems to standards based service definitions
- **Interaction and collaboration services**
  - A service or set of services may be presented to a human user
- **Business process management enabled by SOA**
  - a unified way to integrate people, information and applications in the business process

SOA Scenarios, cont'd

- **Information as a service**
  - Enable access to data from a single data store using service interfaces
  - Need for new business processes and applications to access data from a single repository
- **SOA design**
  - Increase productivity by reducing number of iterations and revisions
- **SOA governance**
  - Establish a service management method for the creation and enhancement of services
- **SOA security and management**
  - Ensure that identity and security policy is consistently applied and audited



SOA Roadmap for TPF

1. Education and tooling
2. Determine modeling requirements
3. Determine QoS requirements
4. Identify initial candidates for services
5. Build necessary infrastructure
6. Deploy initial set of service candidates
7. Monitor success of deployed services
8. Continue migration of remaining services

Education and Tooling

- *New to SOA and Web services*, http://www.ibm.com/developerworks/webservices/newto/
- *IBM Certified SOA Solution Designer certification prep, Part 1: SOA best practices*, http://www.ibm.com/developerworks/edu/ws-dw-ws-soacert1.html
- *Service-Oriented Architecture (SOA) Compass: Business, Value, Planning, and Enterprise Roadmap* , see your favorite bookseller or go to IBM Press
- *Service-Oriented Architecture (SOA): Concepts, Technology, and Design* (The Prentice Hall Service-Oriented Computing Series from Thomas Erl) , see your favorite bookseller
- *Service Oriented Architecture (SOA) Readiness Assessment*, http://www-306.ibm.com/software/solutions/soa/soaassessment/index.html
- *z/TPF and WebSphere Application Server in a Service Oriented Architecture* (IBM Redbooks), http://www.redbooks.ibm.com/redpieces/abstracts/sg247309.html?Open
- *z/TPF's High-Performance Web Services Support*, upcoming DeveloperWorks article
- z/TPF SOA White Paper , http://www-306.ibm.com/software/htp/tpf/tpfug/tgs06/tgs06.htm
- Use the TPF Toolkit

Determine modeling requirements

- Top-down
  - Start with the WSDL, driven by business process
- Bottom-up
  - Start with the application, driven by IT needs
- Agile (aka, “meet-in-the-middle”)
  - Use top-down to select application, and bottom-up to implement. This is an iterative process.

Determine QoS requirements

- Security
  - Identification
  - Authorization
  - Integrity
  - Privacy
- Reliable messaging
- Performance requirements
- Transactional capabilities
- Logging and troubleshooting

Identify initial candidates for services

- Inventory existing applications
  - Packages may equate to “services”
  - Action codes within packages may equate to “operations”
- Prioritize applications to convert to services
  - Will you refactor the application or wrapper it?
- Determine changes to testing strategy
  - Vast number of Web services tools available

Build necessary TPF infrastructure

- Communications binding
  - MQ, HTTP (Apache)
- SOAP Applications Handler
- Data transformation utility services
- Define service tables
- Create message handlers

Deploy initial set of service candidates

- Before you are ready to deploy, have you thought of these issues?
- How will any new layers affect environment?
- What security and user accounts are required?
- How do you plan to monitor performance and reliability?

Monitor success of deployed services

- Application stability
  - SERRCs or message anomalies?
- Performance characteristics
  - Look for bottlenecks in service layers
- Usability
  - Service interface defined to be reusable?

Continue migration of remaining services

- Will introduction of new services impact existing services?
- Any new middleware layers that may impact the system?
- Do you introduce new versions of existing service descriptions that need to be concurrently maintained?

Need help with Roadmap?

Contact your IBM Service Rep to lend you a hand

SOA Principles

- Service reusability
  - Service redundancies are eliminated
- Service contract
  - Services have a formal contract (that is, WSDL) that defines the service endpoint, operations, messages and other rules
- Service loose coupling
  - No dependencies exist for location, platform, or language
- Service abstraction
  - Service logic is not known outside of the service

SOA Principles, cont'd

- Service composability
  - Services can call other services to implement complex services
- Service autonomy
  - Services are self-governing
- Service statelessness
  - Services should be stateless by design
- Service discoverability
  - Aids in preventing creation of redundant services

Questions?

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