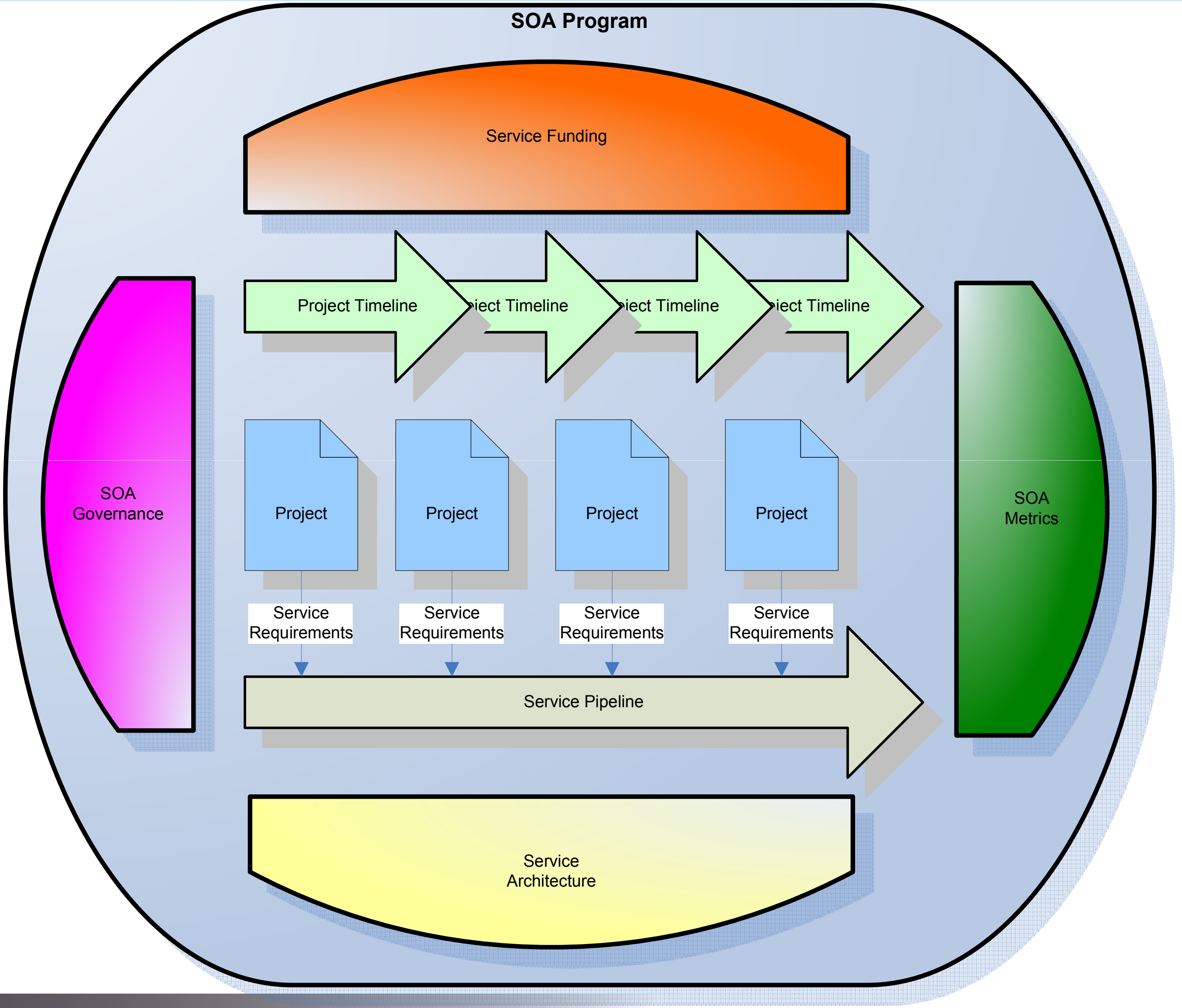
Project-Oriented SOA

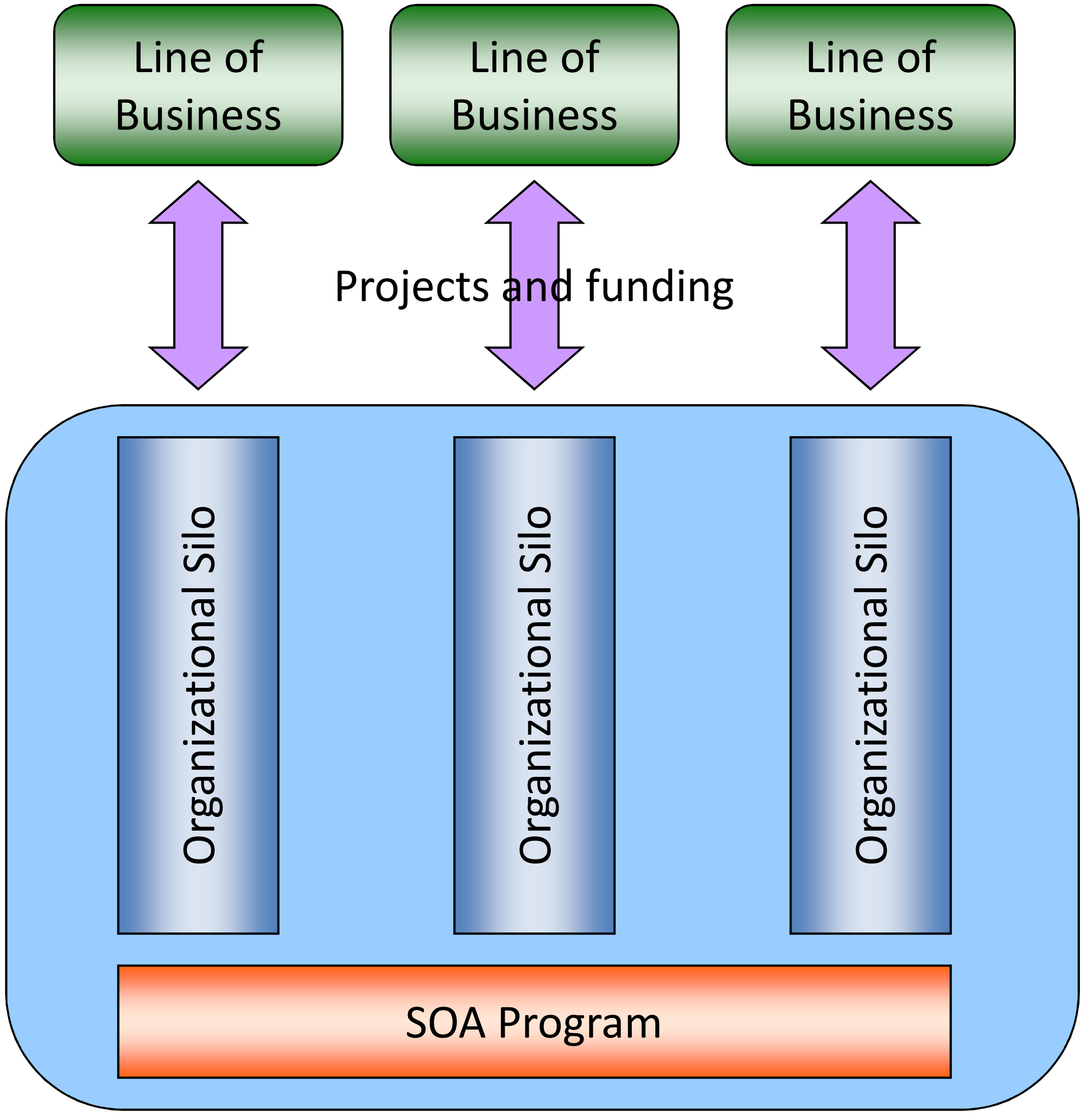
Leo Shuster

November 2009

Project-Oriented SOA Overview

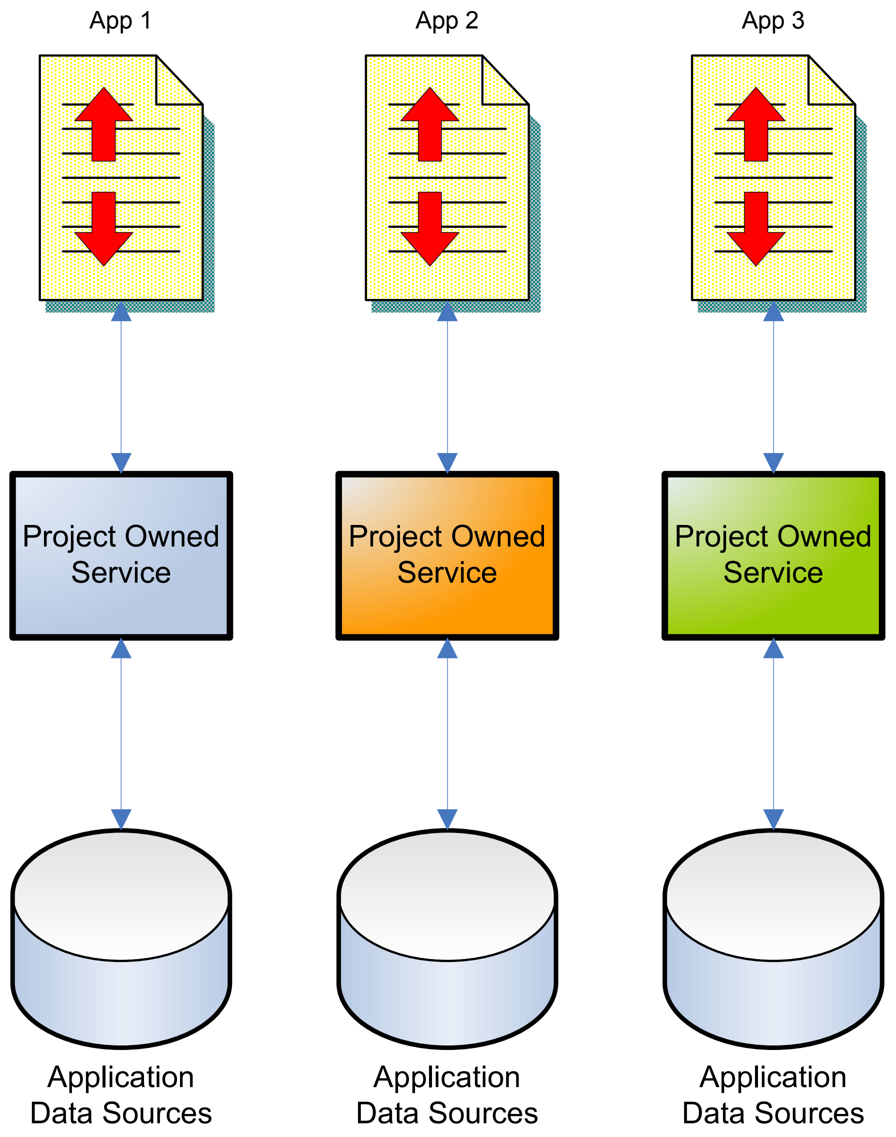


Organizational Reality



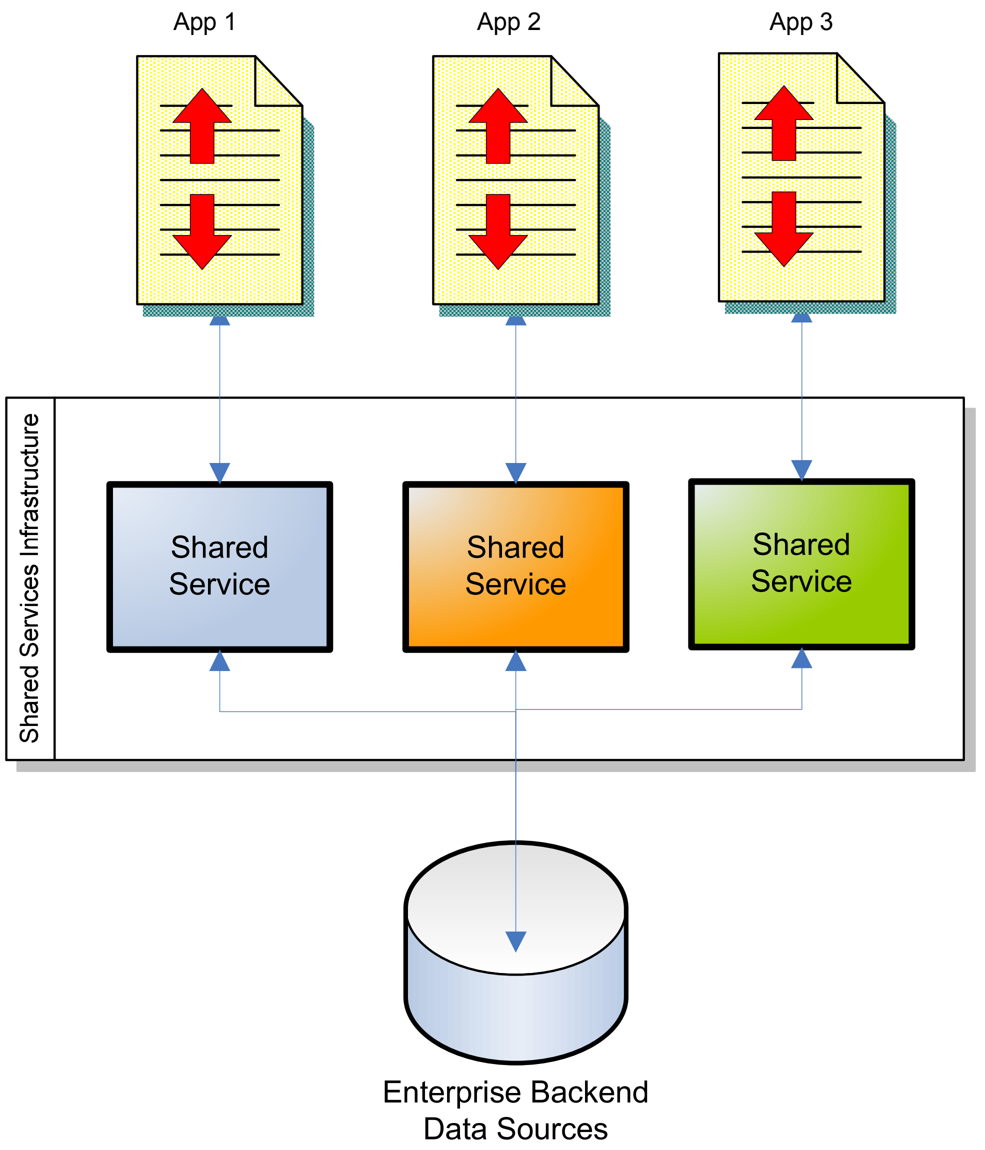
- **Projects are incompatible with SOA Programs**
- **Projects**
  - Time-bound
  - Focused on delivering specific outcomes to limited audiences
  - Concentrate only on their own requirements
  - Funding comes from a Line of Business
- **SOA Programs**
  - Span multiple groups and organizational silos
  - Goal is to establish reusable services for all
  - Services have their own lifecycle
  - Must have central funding

Service Ownership Problem



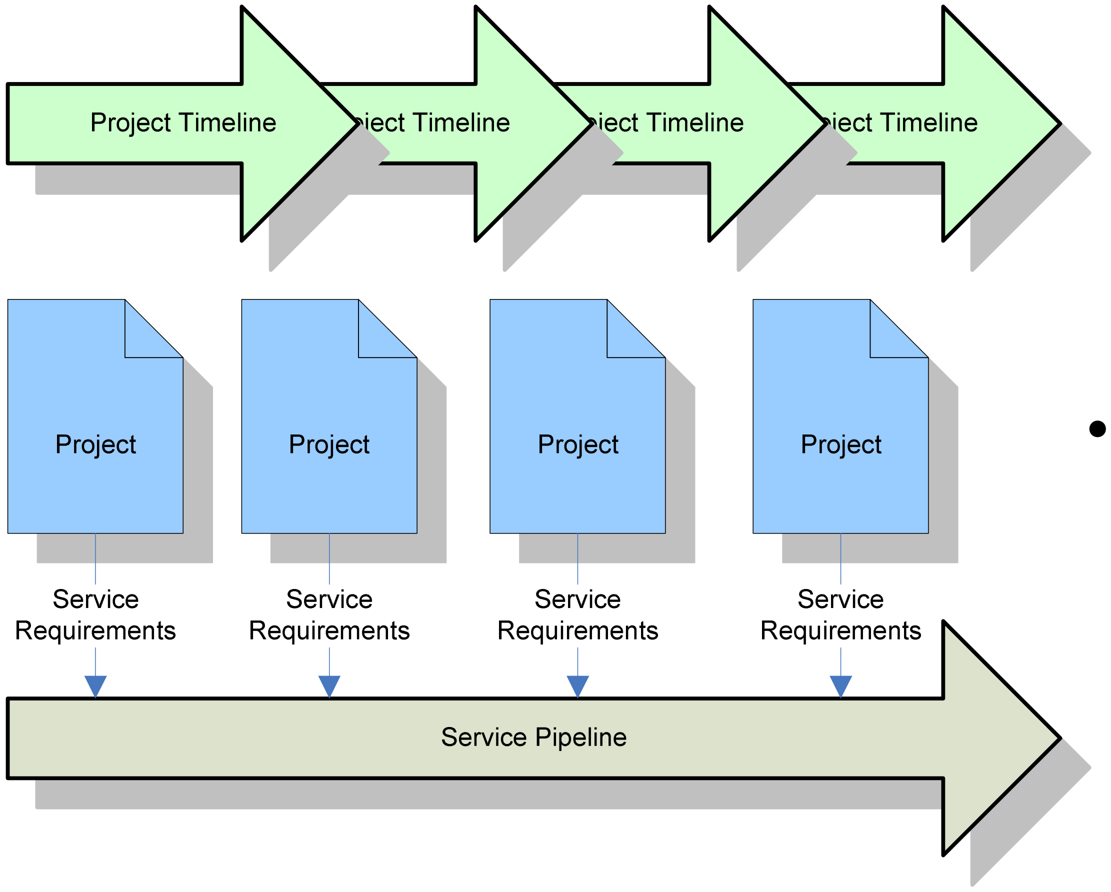
- **Project teams consider business logic their domain**
  - Consider themselves experts
  - Distrust others
  - NIH syndrome
- **Ownership**
  - Sensitive subject
  - Many IT managers have silo mentality
    - Assume they own the whole stack
    - Like to have control over every application component
    - Do not like to share control
    - Any perception of losing control can trigger irrational response
  - Beware of empire building
- **Problem**
  - Projects are not structured to support shared services
  - Would have little incentive to address other projects' requirements

Service Ownership Problem


App 1
App 2
App 3
Shared Services Infrastructure
Shared Service
Shared Service
Shared Service
Enterprise Backend Data Sources

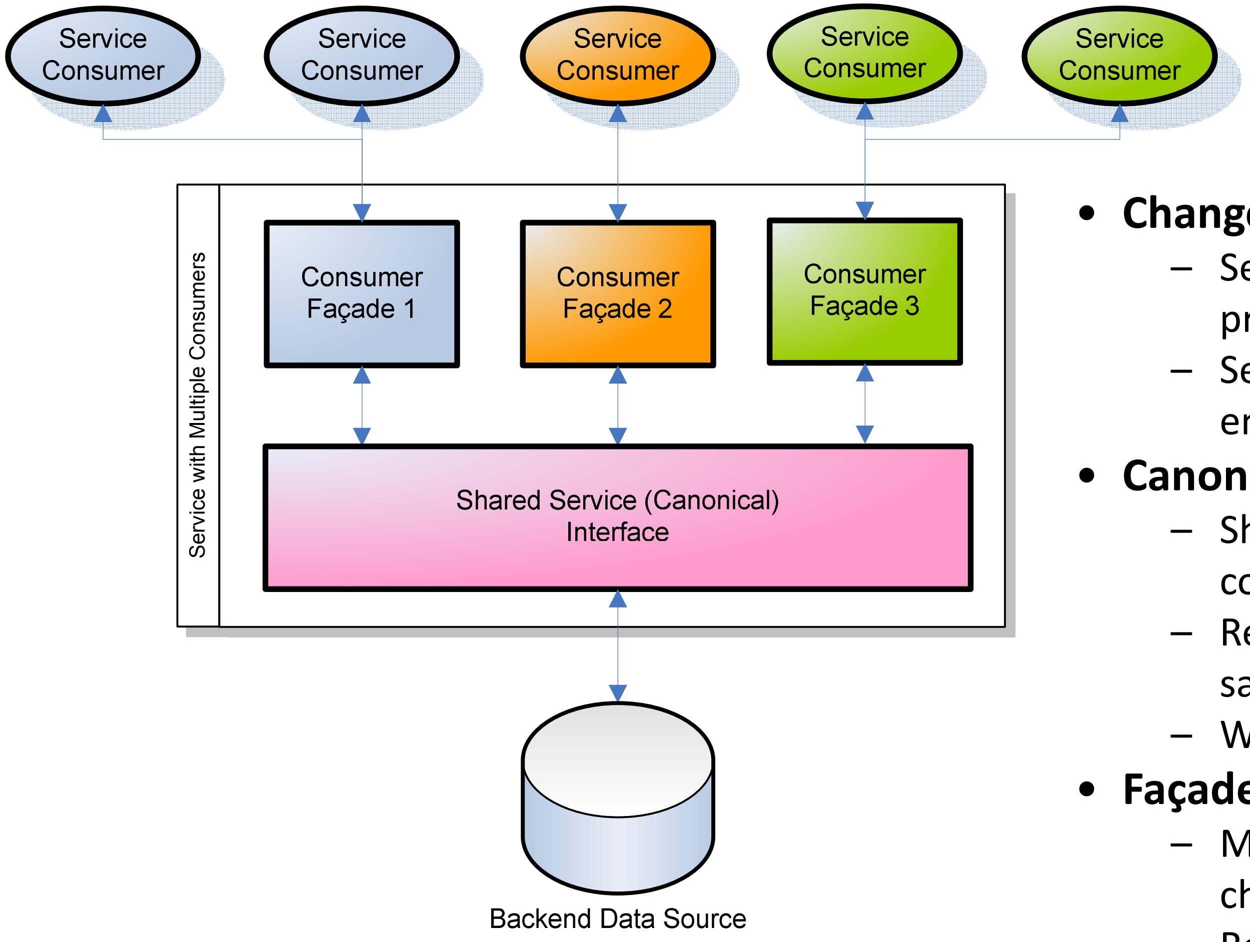
- **Services must be centrally managed**
  - Lifecycle different from that of a project
  - Code must be stored and versioned separately
  - Must reside on dedicated, independently scalable infrastructure
- **Ownership**
  - Enterprise shared services should be managed by a central team
  - Charged with reconciling all requirements and increasing service leverage
  - Central funding

Service Lifecycle Management



- **Service lifecycle**
  - Services created in response to project demand
  - New projects introduce additional requirements that need to be addressed
  - Service evolves independent of an individual project
- **Process**
  - Service lifecycle should be centrally managed
  - Central team should be charged with service identification, lifecycle management, and pipelining activities
  - All new requirements are incorporated into the services as they are discovered

Minimizing Impact of Changes and Maximizing Reuse

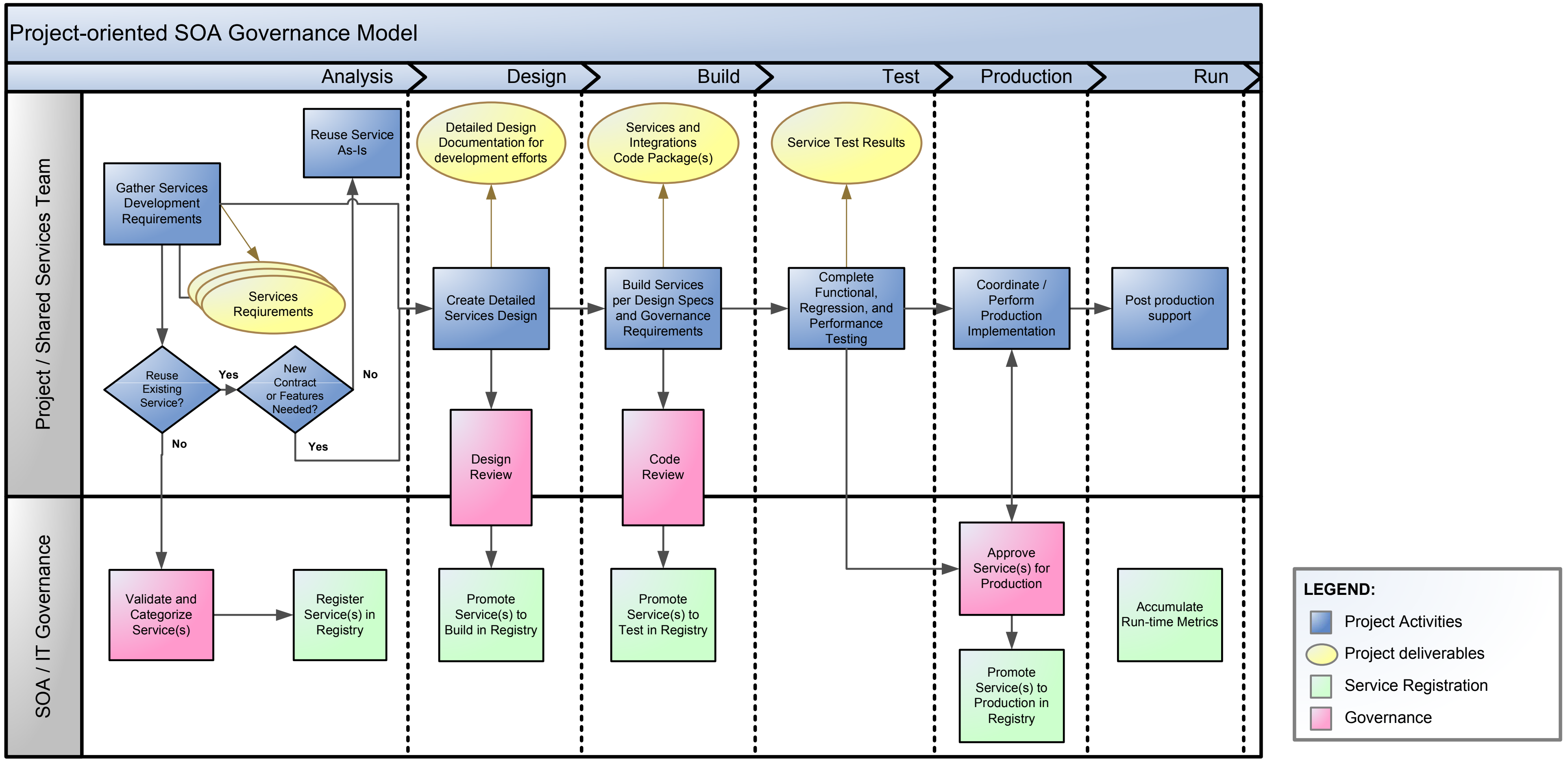


- **Changes are inevitable**
  - Services continue to change due to project demand
  - Service architecture must be flexible enough to accommodate changes
- **Canonical model**
  - Should be used to represent a consistent view of data
  - Reconciles differences between the same entities across organization
  - Will change with service changes
- **Façade pattern**
  - Minimizes impact of internal service changes on consumers
  - Represents service contract specific to each consumer
  - Hides canonical model complexity

SOA Governance

- SOA Governance is critical to SOA program success
  - Maximizes service reuse
  - Encourages right behavior
- SOA Governance success factors
  - Align with internal Software Development Methodology
  - Minimize overhead
  - Maximize synergy with existing IT governance processes
  - Gain visibility of project pipeline as early as possible
  - Prefer influence over enforcement
- Process
  - Establish frequent governance checkpoints
  - Ensure project's compliance with previous recommendations and established best practices
  - Formal approval must be given before moving changes into Production

SOA Governance


Project-oriented SOA Governance Model
Analysis
Design
Build
Test
Production
Run
Project / Shared Services Team
SOA / IT Governance
Reuse Service As-Is
Gather Services Development Requirements
Services Requirements
Reuse Existing Service?
Yes
No
New Contract or Features Needed?
No
Yes
Detailed Design Documentation for development efforts
Create Detailed Services Design
Design Review
Services and Integrations Code Package(s)
Build Services per Design Specs and Governance Requirements
Code Review
Service Test Results
Complete Functional, Regression, and Performance Testing
Coordinate / Perform Production Implementation
Post production support
Validate and Categorize Service(s)
Register Service(s) in Registry
Promote Service(s) to Build in Registry
Promote Service(s) to Test in Registry
Approve Service(s) for Production
Promote Service(s) to Production in Registry
Accumulate Run-time Metrics
LEGEND:
Project Activities
Project deliverables
Service Registration
Governance

SOA Funding

Funding Options

- Make the first project to build a service provide the complete funding
- Establish a central funding source that will cover all service design and construction expenses
- Provide supplementary funding to projects building services

Project- Based Funding

- Unfairly burdens the project
- Incompatible with SOA Program goals
- Will result in project-owned or hard to reuse services

Central Funding

- The easiest approach
- Hard to convince IT management
- Presents opportunities for abuse
- Strong governance needed
- May require a chargeback mechanism to be established

Supplementary Funding

- Most pragmatic
- Central fund established and made available to projects
- Centrally managed
- To cover costs outside of project scope

SOA Metrics

- Metrics are needed to:
  - Measure SOA Program effectiveness and level of adoption
  - Communicate results
  - Meet established goals
- Steps to capture appropriate metrics
  - Capture all the services being created
  - When completed, determine the cost to build each service
  - Capture all reuse opportunities

Most Popular SOA Metrics

- **# of services created**
- **Amount of service reuse**
- **Cost avoidance/savings**
- **Projects using services**
- **ROI**

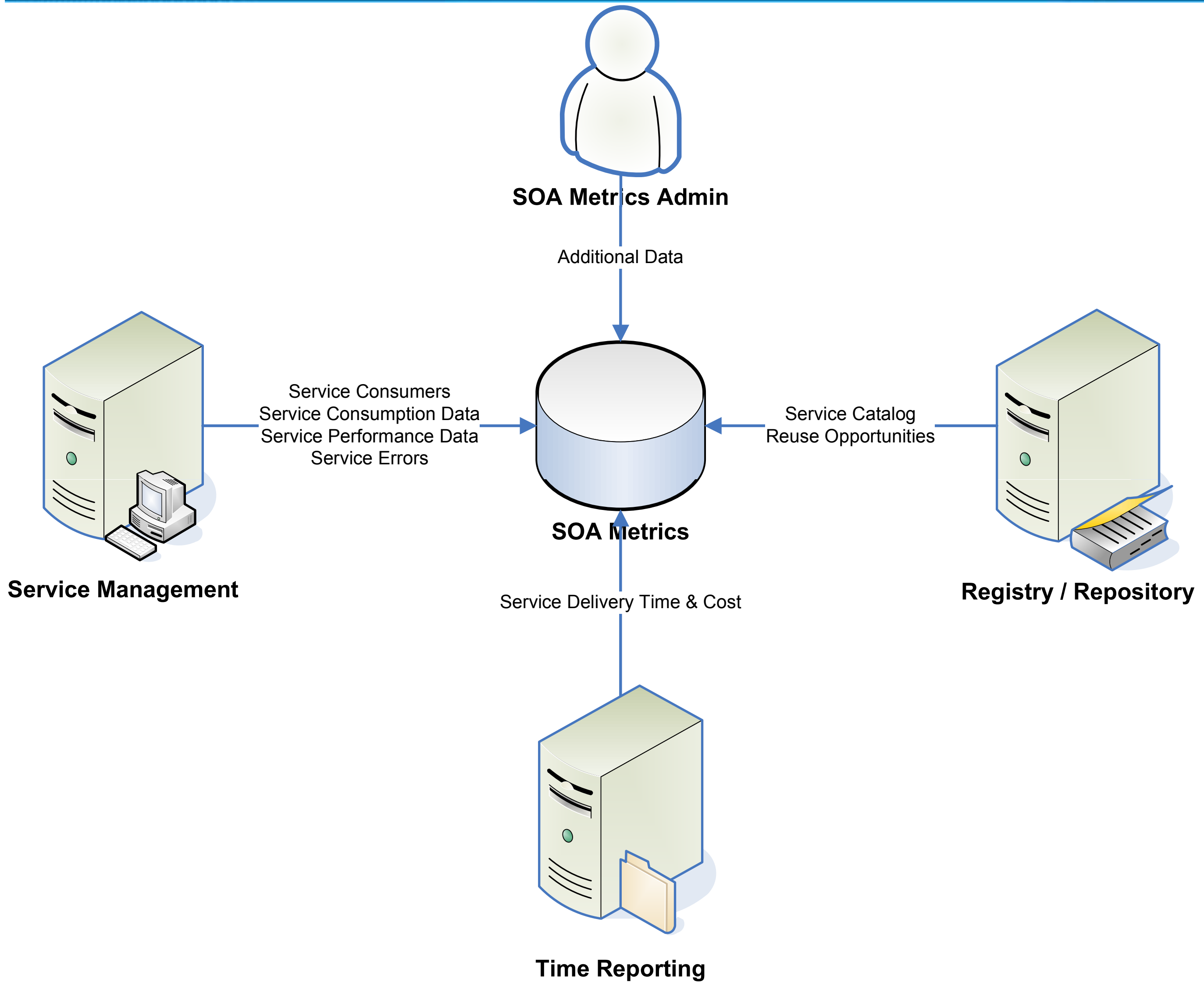
Calculating Service Cost Avoidance

Service Cost Avoidance = Service Build Cost – Project's Service Integration Cost

Where

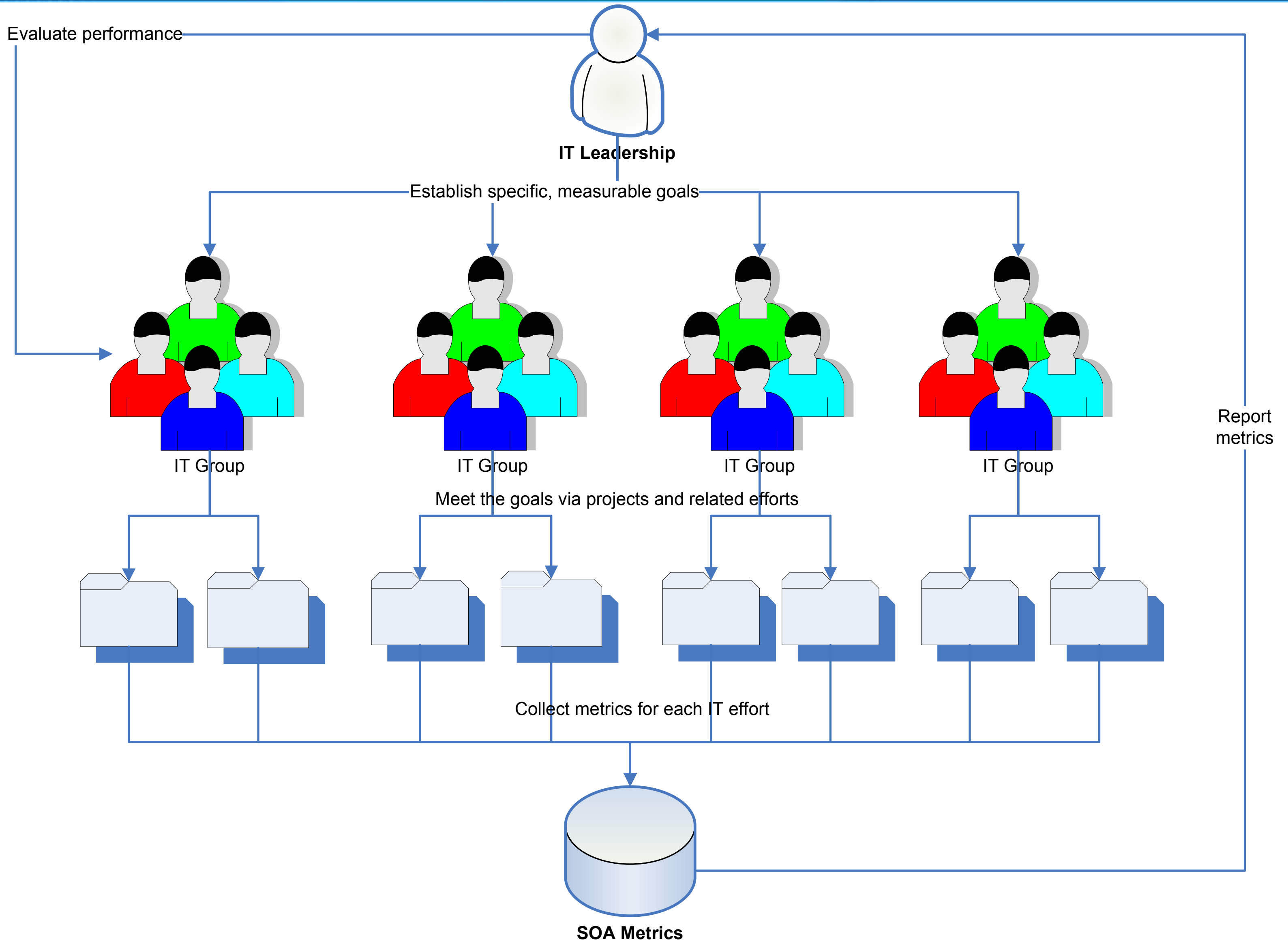
Service Build Cost = Initial Service Build Cost + Cost of all Subsequent Changes

Collecting SOA Metrics

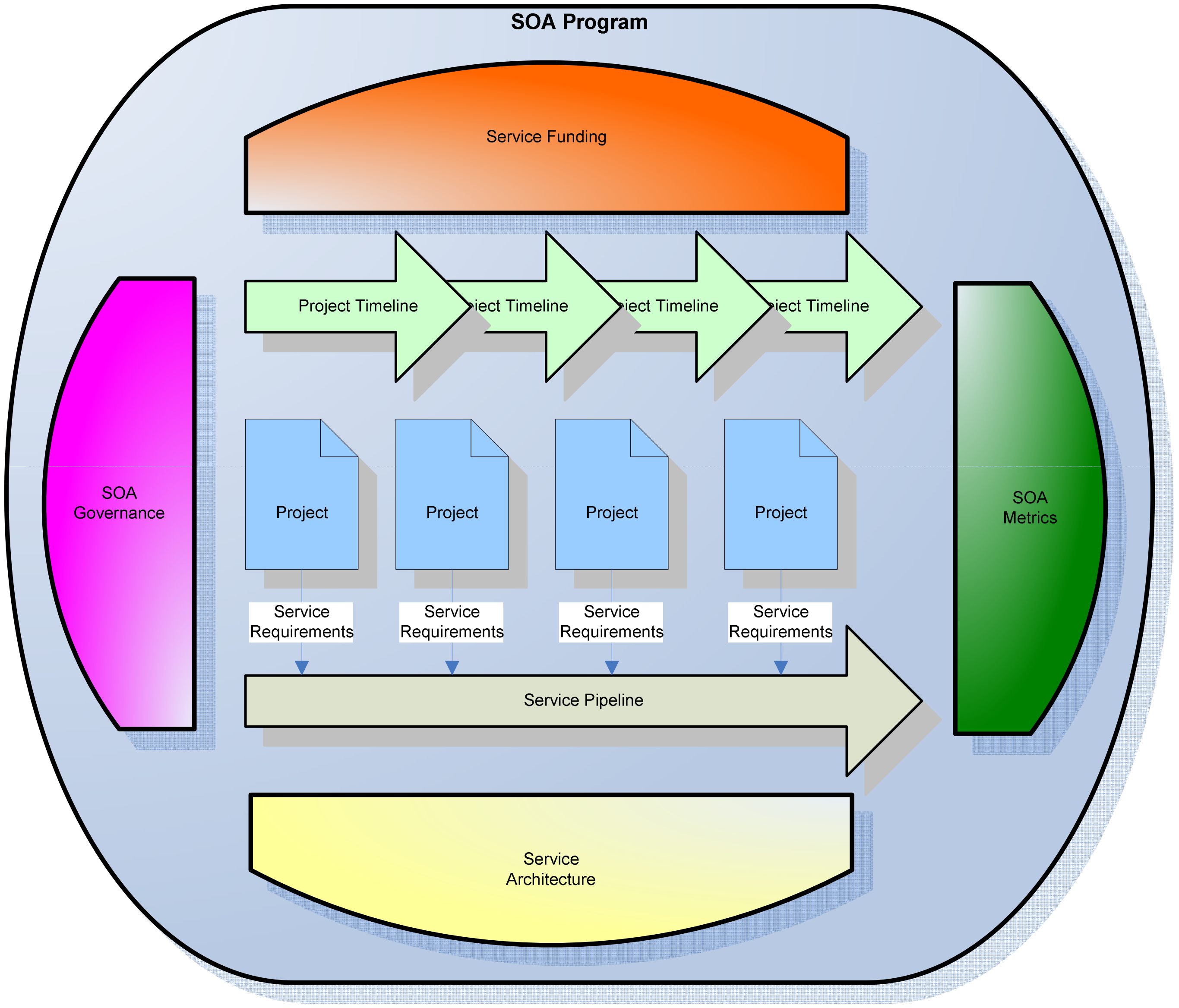


- **Automation is key**
  - Eliminates errors
  - Ensures consistency of data
  - Reduces manual data entry and administration efforts
- **Leverage existing technology**
  - Many products will help in metrics collection
  - Extract data directly if possible
- **Time tracking is tricky**
  - Need to track design, development and testing time by service
  - Time reporting software should be set up appropriately

Improving Service Reuse via SOA Metrics


Evaluate performance
IT Leadership
Establish specific, measurable goals
IT Group
IT Group
IT Group
IT Group
Report metrics
Meet the goals via projects and related efforts
Collect metrics for each IT effort
SOA Metrics

Delivering SOA Vision



References & Questions

- *Project-oriented SOA*: http://www.soamag.com/I21/0808-2.asp
- *Making SOA ROI Real*: http://soa.sys-con.com/node/847118
- Façade pattern: http://en.wikipedia.org/wiki/Facade_pattern
- SOA Patterns: http://www.soapatterns.com/
- Leo’s blog: http://leoshuster.blogspot.com/
- E-mail: leo@stratos.net