ORACLE

Governing Transformation to SOA

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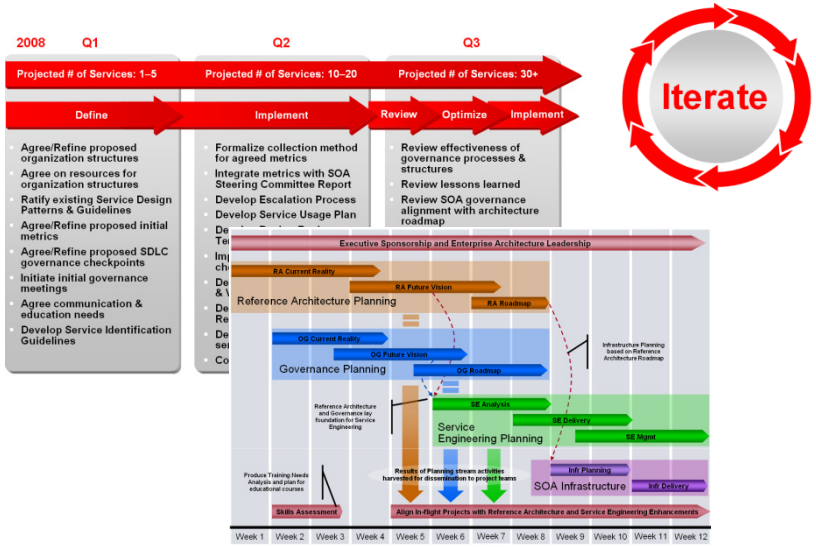
SOA Roadmap

Providing Guidance and Coordination

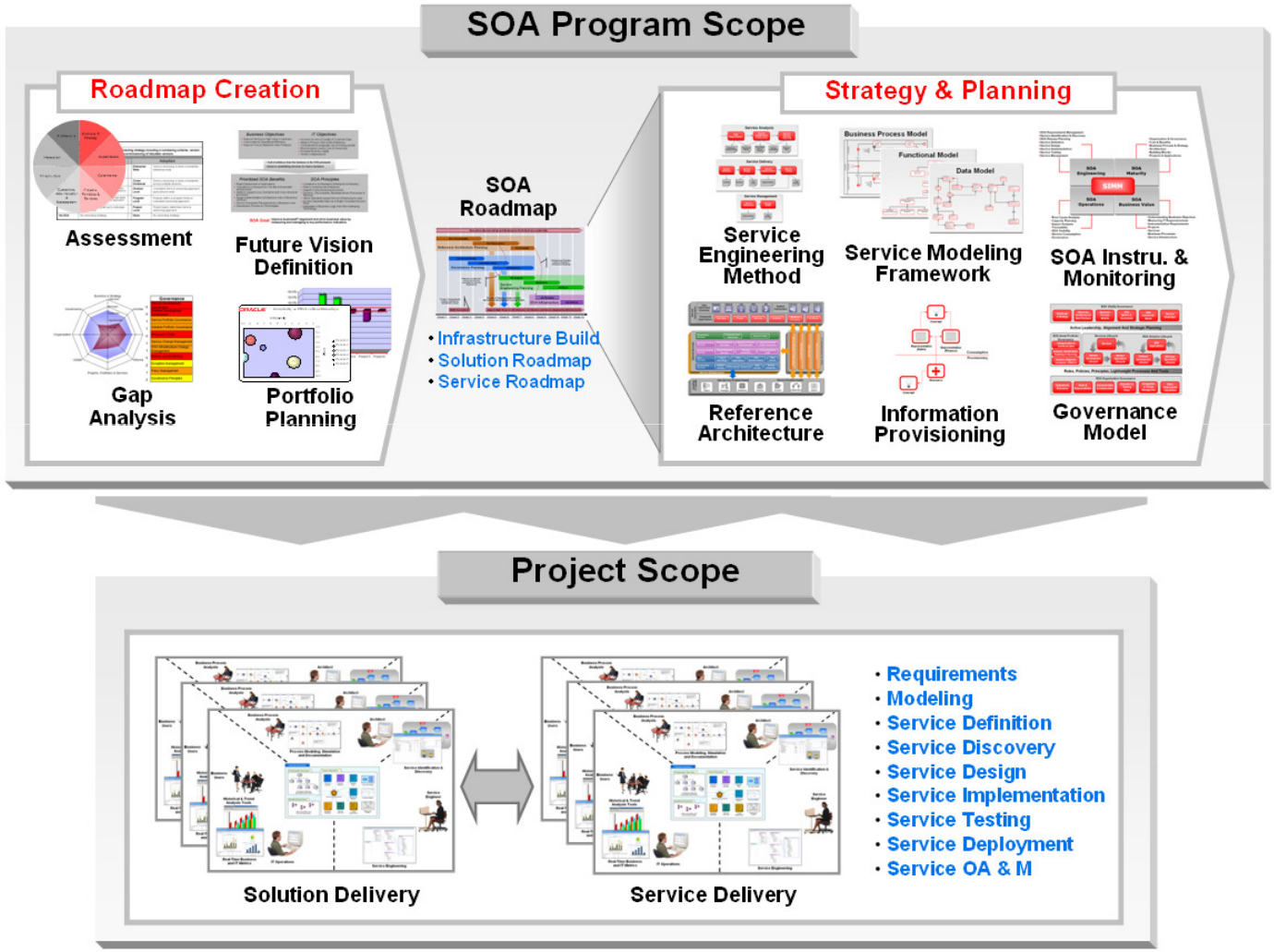
- Allow multiple projects to progress in parallel and remain coordinated
- Generally, time horizon is 2-3 years
  - Depends on enterprise planning cycles
  - Greater detail in near-term phase
- Regularly reviewed and updated
- Incremental improvement
- Course correction



- SOA Roadmap consists of 3 fundamental parts
  - Program-level efforts
  - Portfolio of projects that build specific business solutions
  - Portfolio of shared services

SOA Roadmap

Three Fundamental Parts



Building an SOA Roadmap

All roadmap building follows the same four steps:

- Where are we now?
- Where do we want to be?
- What is the gap between the two?
- What is the path to get to where we want to be?

These steps require a consistent measurement to assess current state and progress toward the goal.

→ **SOA Maturity Model**

Oracle's SOA Maturity Model

Key Concepts

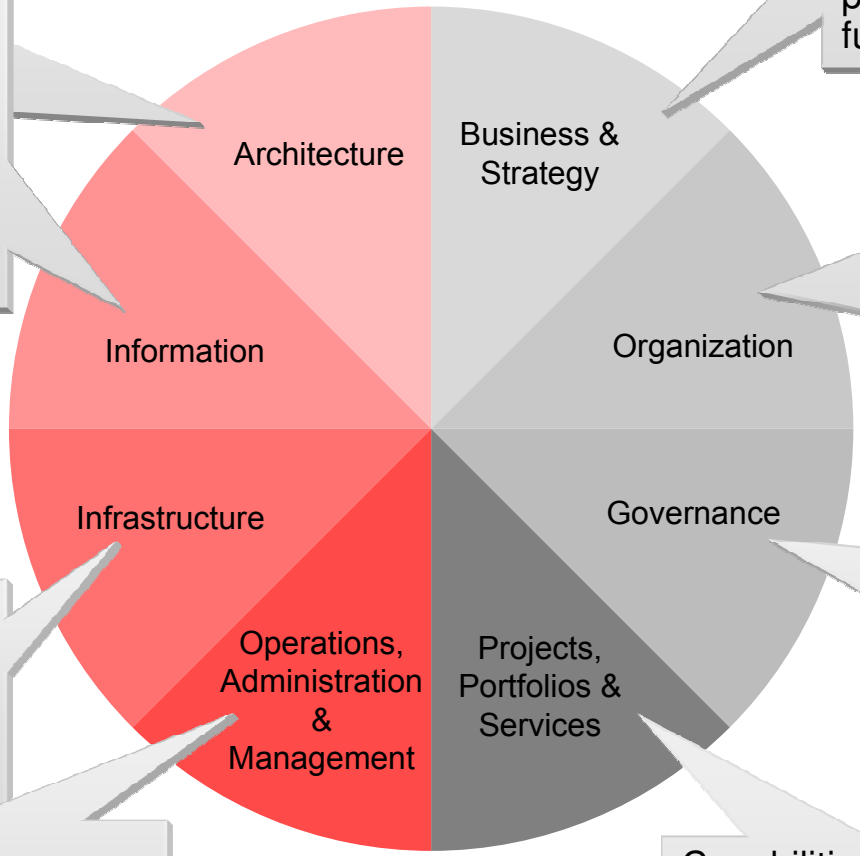
- Oracle's SOA Maturity Model includes the following key concepts:
  - Capabilities
  - Domains
  - Maturity
  - Adoption
- SOA Maturity Model remains technology, standards and product agnostic.
- SOA Maturity Model includes over 90+ capabilities.
- Capabilities capture best practices that Oracle has collected over many years working with a wide variety of companies
- Additional capabilities are added as more best practices emerge
- 8 Domains classify & organize related capabilities
- Capabilities include a description for each level of maturity and each level of adoption

SOA Capability Maturity Levels

Higher the Level – Higher the Capabilities

Strategic Goals		Tactical Plans
Able to support business initiatives in a timely and cost-effective manner.	OPTIMIZED - 5 -	Refine and improve standards and processes Exploit new business opportunities enabled by SOA
Processes and procedures quantitatively managed to drive business value.	MANAGED - 4 -	Establish key performance indicators and manage to those metrics Leverage BAM to improve business processes.
SOA concepts consistently applied facilitating sharing and reuse	SYSTEMATIC - 3 -	Standardize approach and products Drive widespread adoption Establish governance
Focused on simple quick win projects to demonstrate value	OPPORTUNISTIC - 2 -	Apply SOA to simple integrations Select business-driven projects amenable to SOA (e.g. simple portals) Build confidence with business owners
Experimenting with and learning SOA concepts	AD HOC - 1 -	Get experience building, deploying, and consuming services
SOA not being pursued	NO SOA - 0 -	Investigate applicability of SOA

SOA Capability Domains



Capabilities concerned with the definitions of the overall

Capabilities concerning information aspects of SOA, e.g. Information as a Service. This includes shared data models, message formats, schemas, MDM, content management, etc.

Capabilities that provide the high-level constructs that allow SOA initiative to proceed, i.e. Business motivation, guiding principles, expected costs, funding model, etc..

Capabilities concerning the development of corporate competency around SOA including the organizational structure and skills development

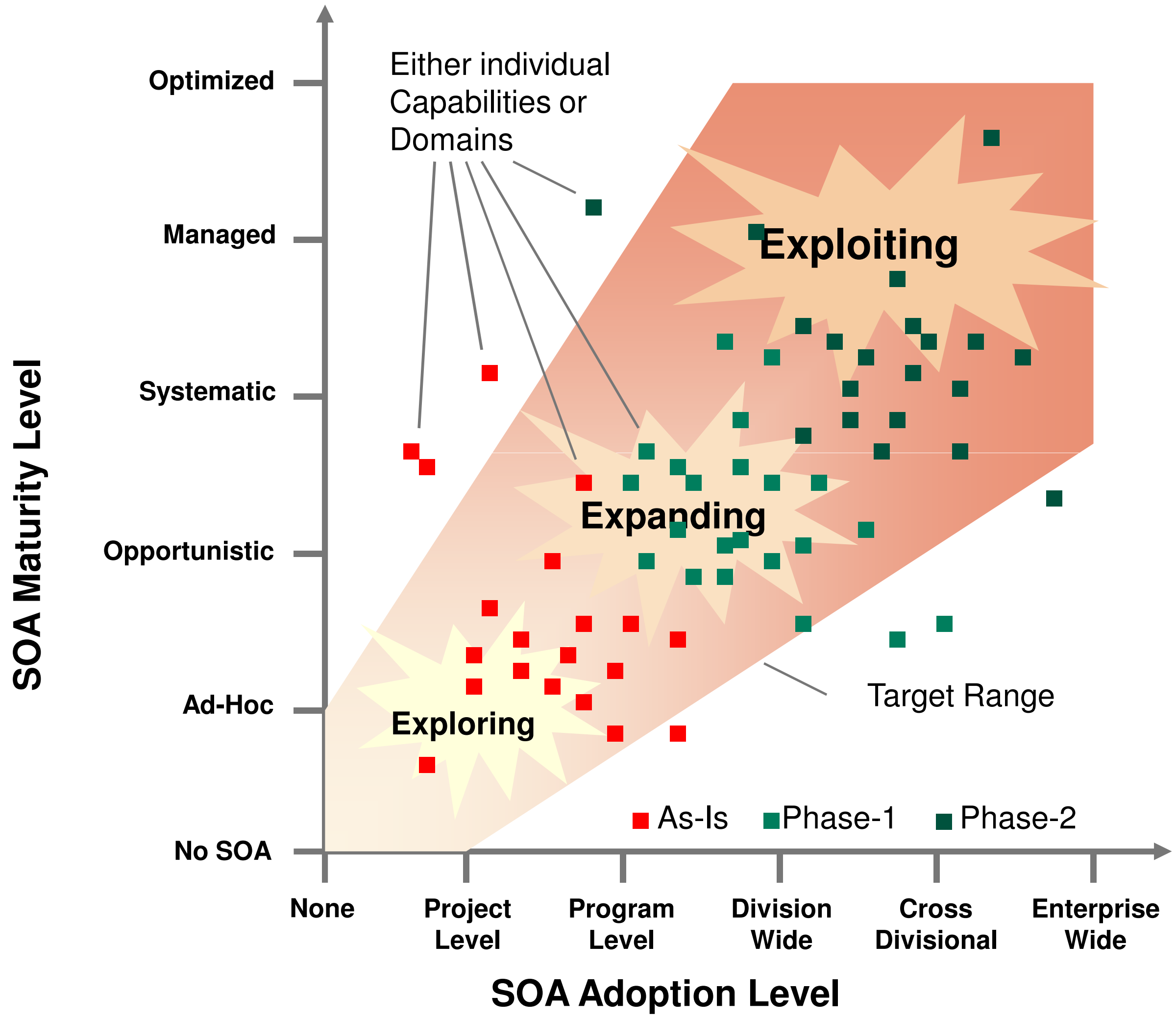
Capabilities concerning the governance structures and processes that support and guide the SOA efforts.

Capabilities concerning the service infrastructure and tools that provide the technical foundation for the SOA initiative.

Capabilities concerning post deployment aspects of solutions based on SOA.

Capabilities concerning the planning and building of services and the service usage guidelines of service consumers

SOA Maturity Model
Measures Maturity and Adoption



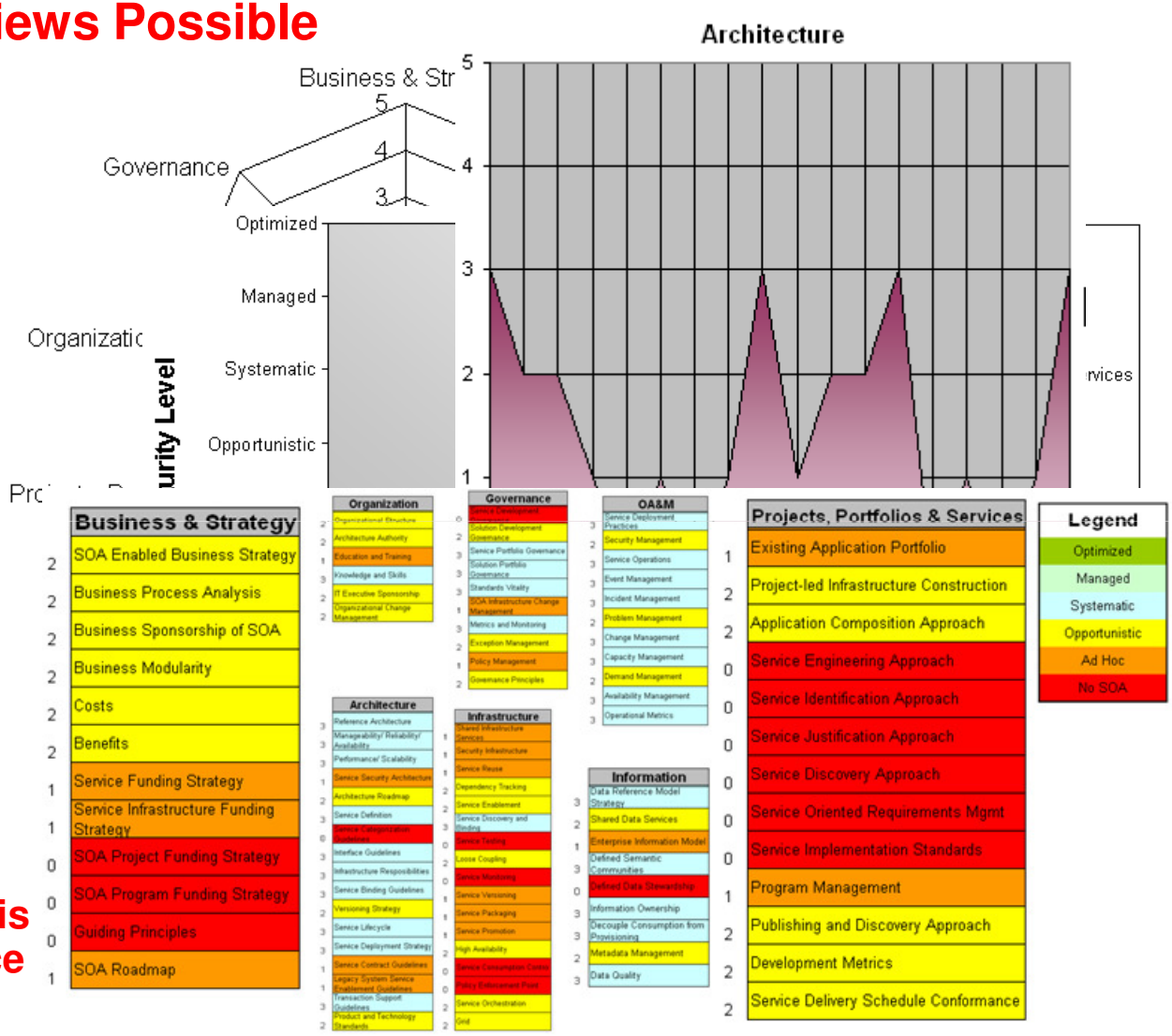
- Measures how widely SOA is being adopted, embraced, and applied within the enterprise
- Defines the path an organization takes to go toward SOA maturity.
- In large enterprises, it is common to have multiple divisions at different levels of adoption.
- SOA requires coordination, cooperation, and a common vision to be successful.
- For smaller enterprises,
- It may be desirable to ignore the adoption dimension and simply measure maturity
- Necessary to define the strategy before it is possible to be truly successful at repeating it

Graphing SOA Assessment Results

Many Different Views Possible

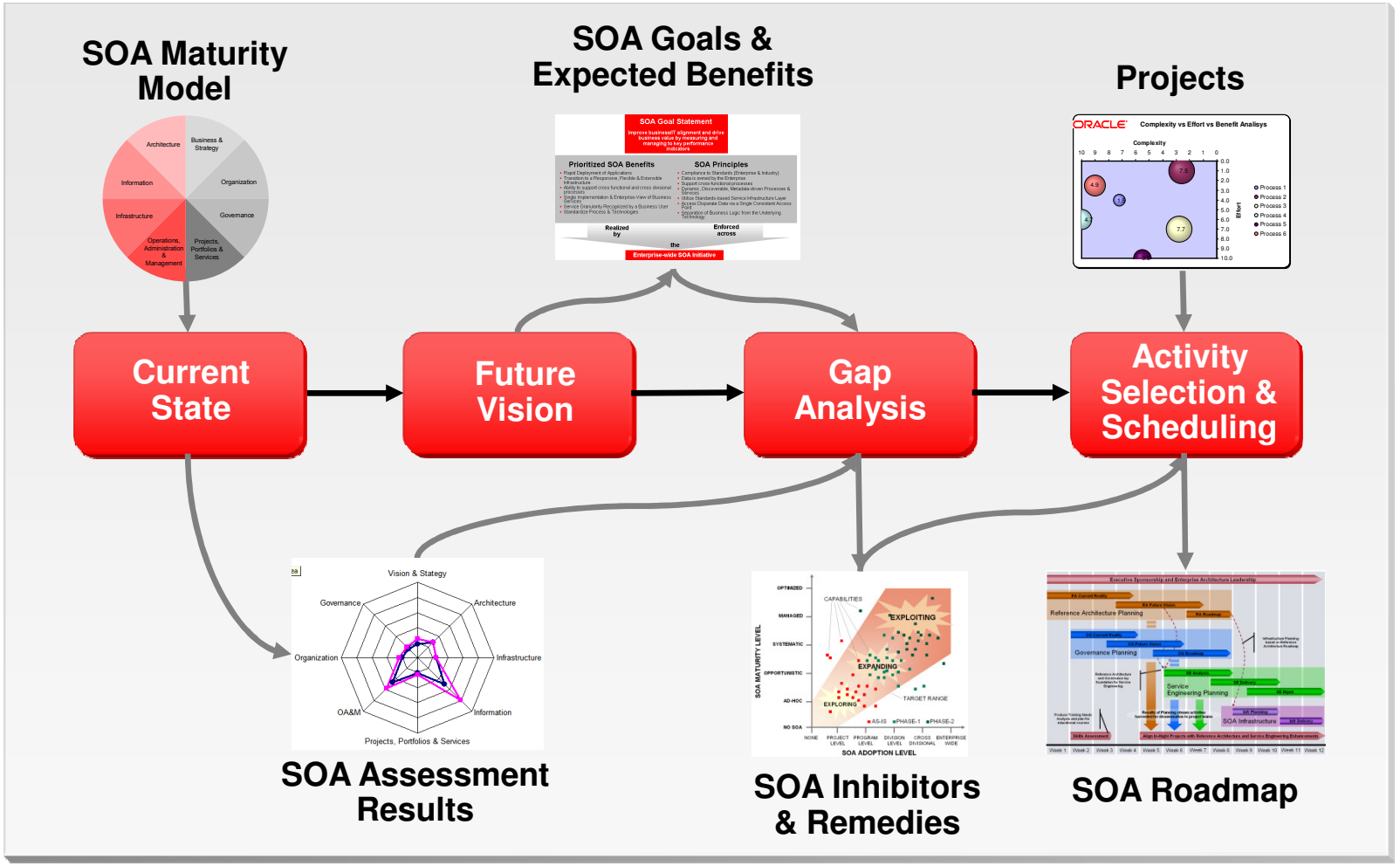
- Spider Graph
- Scatter Plot
- Domain Detail
- Heat Maps
- Etc…

Select the graphics that convey the information that is most relevant to the audience

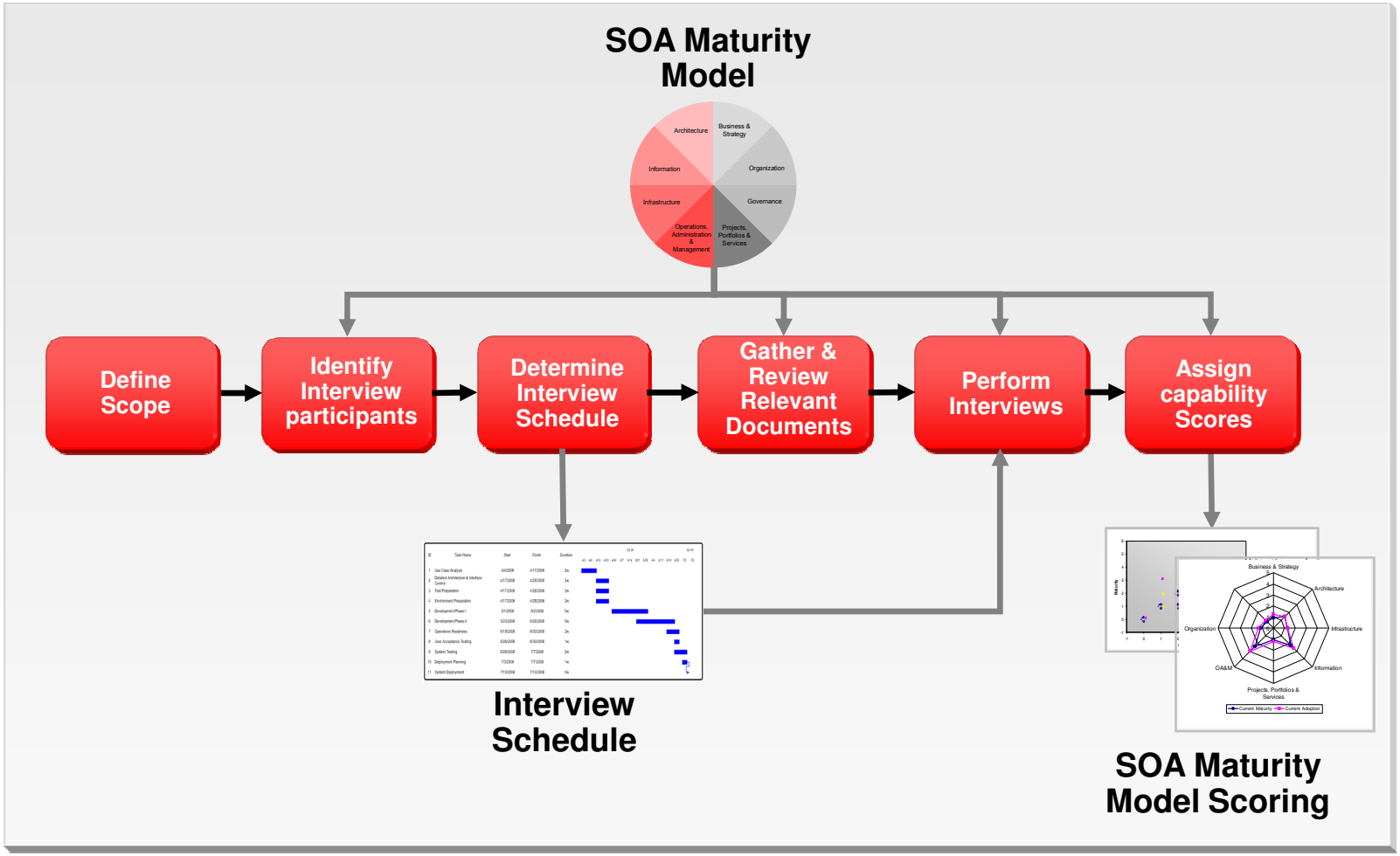


Roadmap Creation Process

Overview

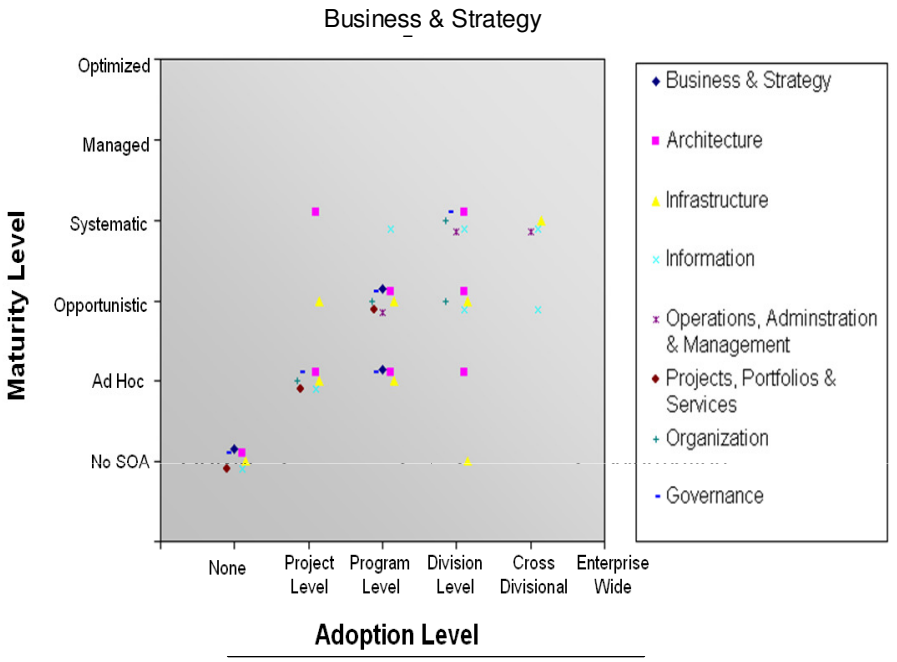


Current State
Assessment



Understanding of the Current State

- Define the scope of the assessment
  - Ultimately the scope of the roadmap as well
- Participants are chosen to ensure that all capabilities within the SOA Maturity Model can be accurately scored
- Existing IT and SOA documents are reviewed
  - Ask more intelligent questions during interviews
  - Resolve inconsistencies via interviews
- Score each capability in the SOA Maturity Model for maturity and adoption



- Scores are analysed in the gap analysis phase

Future Vision

SOA Vision Definition

- The SOA vision definition phase focuses solely on the high level goals and principles that will be used to guide and entire SOA initiative
- Detailed future vision is not something that must be created prior to creating an SOA Roadmap
  - Initial phases of the SOA Roadmap can create detailed vision

- What is goal of the SOA initiative?
- What is the organizational scope of the SOA initiative?
- What are the benefits that SOA is expected to deliver to the organization?
- What are the guiding principles for the SOA initiative?

Future Vision

SOA Goal

SOA Goal Statement

Improve business/IT alignment and drive business value by measuring and managing to key performance indicators

Prioritized SOA Benefits

- Rapid Deployment of Applications
- Transition to a Responsive, Flexible & Extensible Infrastructure
- Ability to support cross functional and cross divisional processes
- Single Implementation & Enterprise-View of Business Services
- Service Granularity Recognized by a Business User
- Standardize Process & Technologies

SOA Principles

- Compliance to Standards (Enterprise & Industry)
- Data is owned by the Enterprise
- Support cross-functional processes
- Dynamic, Discoverable, Metadata-driven Processes & Services
- Utilize Standards-based Service Infrastructure Layer
- Access Disparate Data via a Single Consistent Access Point
- Separation of Business Logic from the Underlying Technology

Realized by

Enforced across

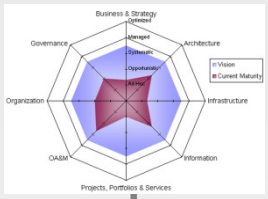
the

Enterprise-wide SOA Initiative

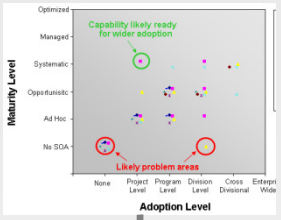
Gap Analysis

Analyze Gap and Determine Remediation

Domain Spider Graph

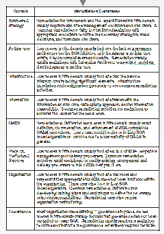


Capability Scatter Plot



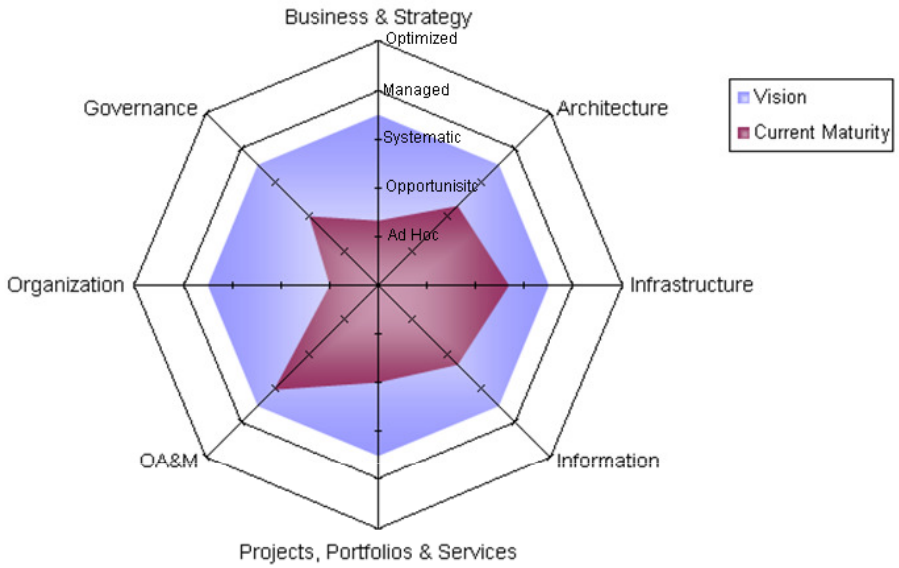
Capability Heat Maps

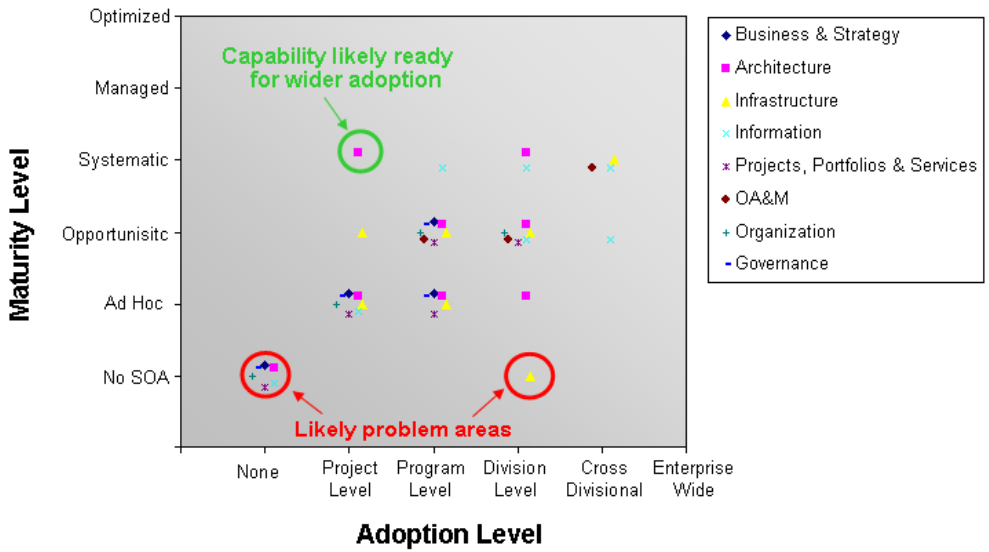
Identify Problem Domains → **Identify Outlier Capabilities** → **Identify Lagging Capabilities** → **Determine Remediation Activities**



Remediation Activities

Problem Domains and Outlier Capabilities





- Identify the domains that exhibit the largest gap between current maturity and the maturity needed to achieve the SOA goal

- Outlier capabilities are capabilities where the maturity and the adoption are significantly out of sync
- Usually indicates a capability that should receive attention early in the roadmap

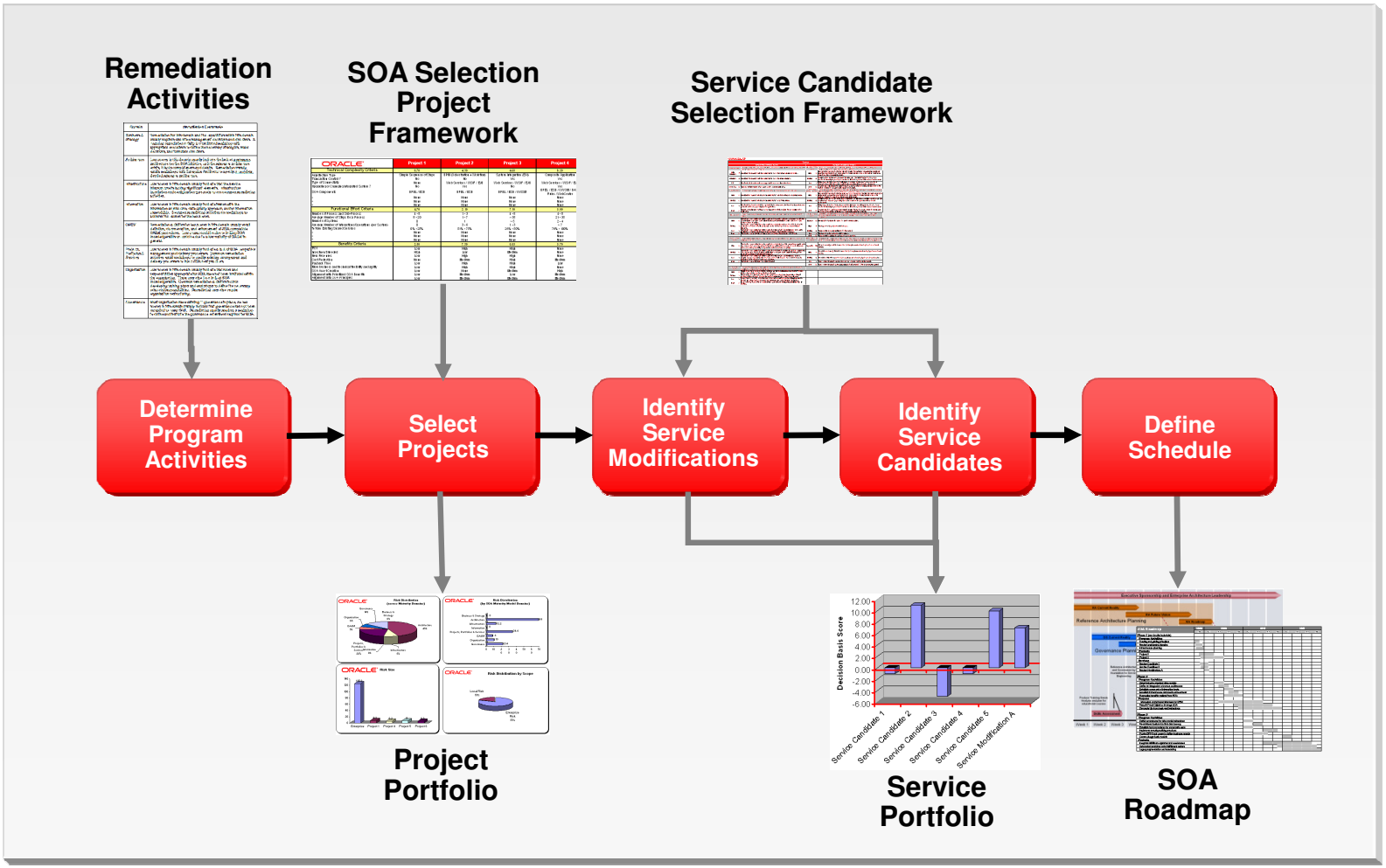
Lagging Capabilities and Remediation

- Capability heat maps can be used to visually identify low maturity capabilities
  - Not all capabilities are of equal importance for a particular organization
  - Capabilities may be deemed unimportant or not applicable
- Remediation activities have been identified to address the lagging domains and capabilities
- Remediation activities provide a primary input into the roadmap creation process

Infrastructure Architecture

Domain	Remediation Comments
Business & Strategy	Remediation for this domain and the capabilities within this domain usually requires executive management decisions and directives. A common remediation activity is a facilitated workshop with appropriate executives to define the necessary strategies, make decisions, and formulate directives.
Architecture	Low scores in this domain usually indicate the lack of a reference architecture for the SOA initiative, or if the reference architecture exists, it lacks completeness and details. Remediation usually entails workshops with Enterprise Architects to specify a complete, detailed reference architecture.
Infrastructure	Low scores in this domain usually indicate that the service infrastructure is lacking significant elements. Infrastructure installation and configuration type projects are common remediation activities.
Information	Low scores in this domain usually indicate issues with the information architecture, data quality approach, and/or information stewardship. Common remediation activities are workshops to address the causes for the low scores.
OA&M	Remediation activities for low scores in this domain usually entail definition, documentation, and enforcement of SOA compatible OA&M procedures. Low scores could be due to lacking SOA knowledge/skills or could be due to a low maturity of OA&M in general.
Projects, Portfolios & Services	Low scores in this domain usually indicate a lack of SOA compatible management and delivery processes. Common remediation activities entail workshops to modify existing management and delivery processes to inject SOA best practices.
Organization	Low scores in this domain usually indicate that roles and responsibilities appropriate for SOA have not been instituted within the organization. There may also be a lack of SOA knowledge/skills. Common remediation activities include developing training plans and workshops to define the necessary roles and responsibilities. Remediation may also require organization restructuring.
Governance	Most organization have existing IT governance in place, so low scores in this domain usually indicate that governance has not been extended to cover SOA. Remediation usually requires a workshop to define and institute the governance extensions required for SOA.

Activity Selection & Scheduling



Roadmap Creation

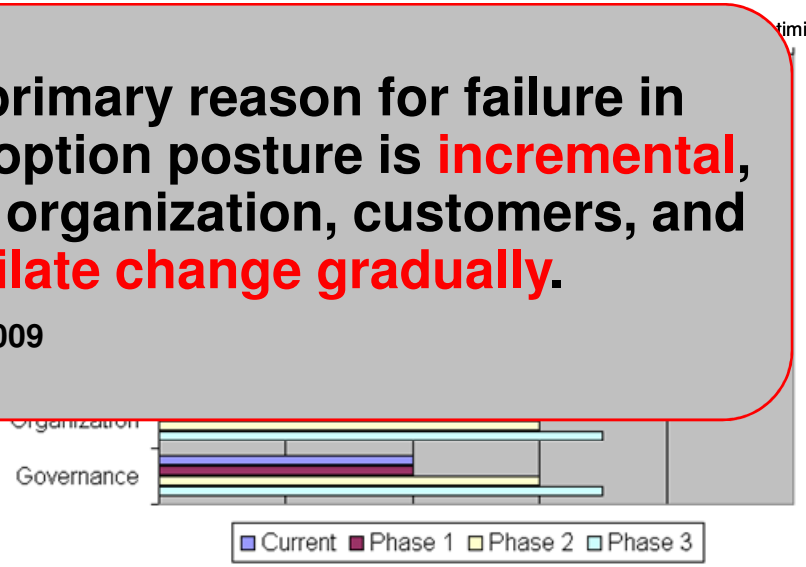
Determine Program Activities

Cultural resistance is often the primary reason for failure in enterprise IT endeavors. If your adoption posture is incremental, you will lessen the impact on your organization, customers, and partners so they can assimilate change gradually.

***The Seven Steps to SOA Nirvana*, Tom Termini, January 2009**

must

- Be long enough to accomplish some meaningful progress
- Be short enough to minimize risk
- Maintain a continuous pace of incremental progress

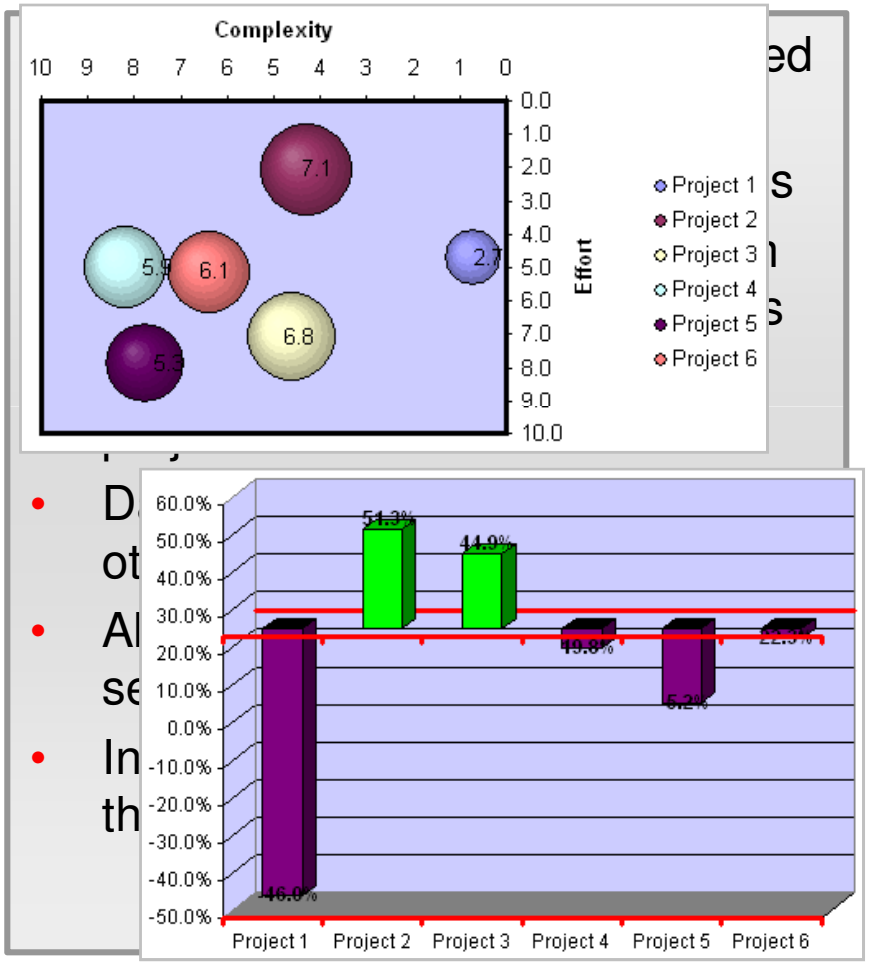


- Iteration must not exceed organization's ability to absorb that change

Provide Business Value

Project Selection

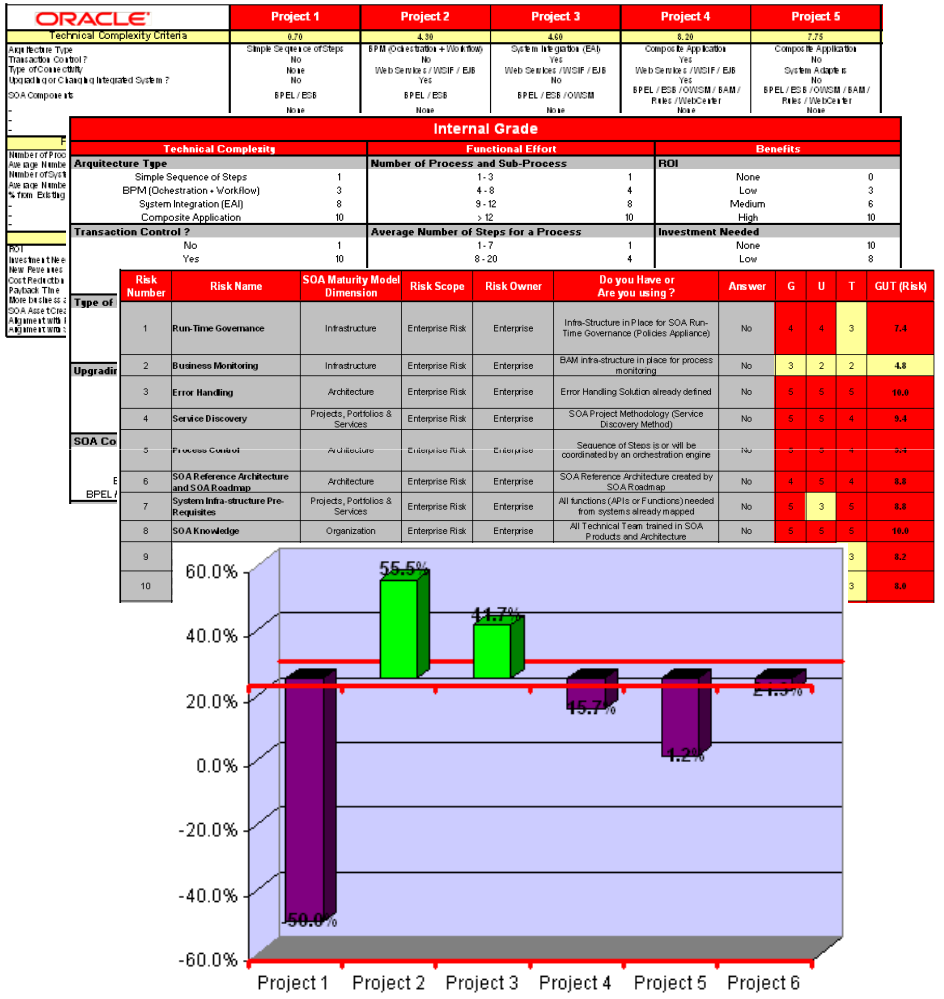
- SOA Roadmap must select projects that:
  - Provide measureable business value
  - Are amenable to a service-oriented approach
  - Advance the SOA initiative
- Extend traditional project portfolio planning with additional SOA criteria to rank projects
- Consider any new risks
- Select projects considering costs, complexity, benefits, and risks



Project Selection

SOA Project Selection Framework

- The Oracle SOA Project Selection Framework evaluates project
  - Effort
  - Complexity
  - Benefits
  - Risks
- Generates a numeric score used to select projects for the SOA Roadmap
- The framework is **not** intended to replace existing project portfolio planning



ORACLE	Project 1	Project 2	Project 3	Project 4	Project 5
Technical Complexity Criteria	0.70	4.30	4.60	8.20	7.75
Architecture Type	Simple Sequence of Steps	BPM (Orchestration + Workflow)	System Integration (EAI)	Composite Application	Composite Application
Transaction Control ?	No	No	Yes	Yes	No
Type of Connectivity	None	Web Services / WSIF / EJB	Web Services /WSIF / EJB	Web Services / WSIF / EJB	System Adapters
Upgrading or Changing Integrated System ?	No	Yes	No	Yes	No
SOA Components	BPEL / ESB	BPEL / ESB	BPEL / ESB /OWSM	BPEL / ESB /OWSM / BAM / Rules / WebCenter	BPEL / ESB /OWSM / BAM / Rules / WebCenter
-	None	None	None	None	None
-					
-					

Internal Grade

Technical Complexity		Functional Effort		Benefits	
Arquitecture Type		**Number of Process and Sub-Process**		**ROI**	
Simple Sequence of Steps	1	1 - 3	1	None	0
BPM (Ochestration + Workflow)	3	4 - 8	4	Low	3
System Integration (EAI)	8	9 - 12	8	Medium	6
Composite Application	10	> 12	10	High	10
Transaction Control ?		**Average Number of Steps for a Process**		**Investment Needed**	
No	1	1 - 7	1	None	10
Yes	10	8 - 20	4	Low	8

Risk Number	Risk Name	SOA Maturity Model Dimension	Risk Scope	Risk Owner	Do you Have or Are you using ?	Answer	G	U	T	GUT (Risk)
1	Run-Time Governance	Infrastructure	Enterprise Risk	Enterprise	Infra-Structure in Place for SOA Run-Time Governance (Policies Appliance)	No	4	4	3	7.4
2	Business Monitoring	Infrastructure	Enterprise Risk	Enterprise	BAM infra-structure in place for process monitoring	No	3	2	2	4.8
3	Error Handling	Architecture	Enterprise Risk	Enterprise	Error Handling Solution already defined	No	5	5	5	10.0
4	Service Discovery	Projects, Portfolios & Services	Enterprise Risk	Enterprise	SOA Project Methodology (Service Discovery Method)	No	5	5	4	9.4
5	Process Control	Architecture	Enterprise Risk	Enterprise	Sequence of Steps is or will be coordinated by an orchestration engine	No	5	5	4	9.4
6	SOA Reference Architecture and SOA Roadmap	Architecture	Enterprise Risk	Enterprise	SOA Reference Architecture created by SOA Roadmap	No	4	5	4	8.8
7	System Infra-structure Pre-Requisites	Projects, Portfolios & Services	Enterprise Risk	Enterprise	All functions (APIs or Functions) needed from systems already mapped	No	5	3	5	8.8
8	SOA Knowledge	Organization	Enterprise Risk	Enterprise	All Technical Team trained in SOA Products and Architecture	No	5	5	5	10.0
9									3	8.2
10									3	8.0

Identify Service Modifications and Candidates

Service Modification

- Functionality already available from existing services
  - Increase the performance or capacity
  - Implement functional enhancements
- Service modifications need to be incorporated into the SOA Roadmap

Service Candidates

- Projects need to be analyzed to identify the service candidates.
- Three primary areas to analyze:
  - Functional overlap between projects
  - Business process tasks that are common across projects
  - Common data requirements across projects

Service Selection

SOA Service Candidate Selection Framework

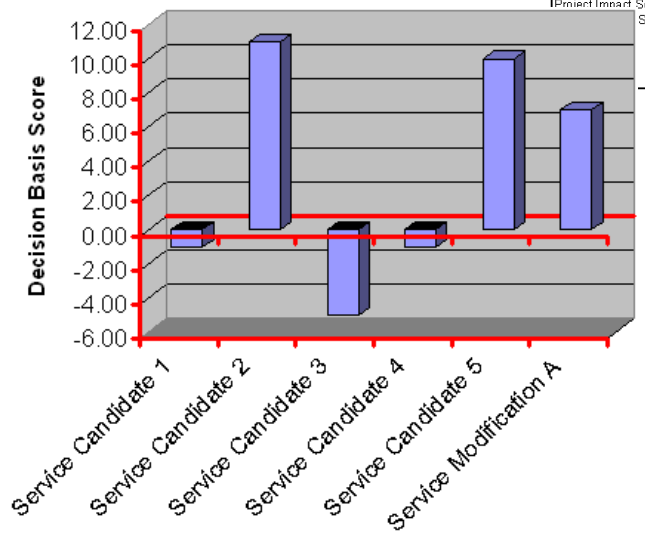
- The Oracle Service Candidate Selection Framework measures
  - Benefits of realization
  - Inhibitors to realization
- Generates a numeric score used to justify Services Candidates for realization
- Does not determine if the functionality should be built
  - Justifies extra effort to buid a reusable service
  - If not justified, functionality build by the project

ORACLE	Service Candidate 1	Service Candidate 2	Service Candidate 3	Service Candidate 4	Service Candidate 5	Service Modification A
Realization Benefits Scores	9.00	12.00	1.00	6.00	12.00	11.00
Scope Score	Enterprise	Enterprise	Application	LOB	Multi-Enterprise	Multi-Enterprise
Reuse Score	Low	High	Low	Medium	High	Low
Agility Score	Low	High	None	Medium	High	High
Compliance Score	Medium	High	None	Low	High	Low
Enablement Score	High	Low	None	None	None	High
	None	None	None	None	None	None

Scores

Realization Benefits Score			Realization Inhibitor Score		
Scope Score		The scope score weighs the benefit that the intended scope of the service candidate will have on the enterprise if realized.	Skill-set Impact Score		The skill-set impact score weighs the additional skill-set necessary to realize the functions proposed by the service candidate in a shared manner.
Multi-Enterprise	3	If realized, this shared asset has usage potential across the partner/supplier ecosystem.	High	3	The organization does not have the skill-set to realize this service in a shared environment and meet the expected functional and non-functional demands proposed by the service candidate for operation within a shared environment.
Enterprise	2	If realized, this shared asset has usage potential across the entire enterprise.	Medium	2	Significant gaps in skill-set would need to be filled prior to realizing the functional and non-functional demands proposed by the service candidate for operation within a shared environment
LOB	1	If realized, this shared asset has usage potential across one line-of-business.	Low	1	Minimal gaps in skill-set need to be filled prior to realizing the functional and non-functional demands p
Application	0	The only identified usage of this shared asset is a single application.	None	0	All necessa service ca
Reuse Score		The reuse score weighs the potential reuse levels for the service candidate if realized.	Technology Capability Score		The techno functions p
High	3	If realized this shared asset will have a large potential for both short-term and long-term reuse.	High	3	The organ environme service ca
Medium	2	If realized this shared asset will have a large potential for short-term reuse.	Medium	2	Significant non-functio environme
Low	1	If realized this shared asset will have potential for long-term reuse, but there is no immediate reuse potential outside the proposed project or application.	Low	1	Minimal ga functional
None	0	There is no identifiable short-term or long-term reuse potential outside the proposed project or application.	None	0	All necessa proposed h

Weight Distribution	
Realization Benefits Scores	100%
Scope Score	20%
Reuse Score	20%
Agility Score	20%
Compliance Score	20%
Enablement Score	20%
-	0%
-	0%
-	0%
Realization Inhibitor Scores	100%
Skill-set Impact Score	25%
Technology Capability Score	25%
Project Impact Score	25%
Score	25%
	0%
	0%
	0%
	0%



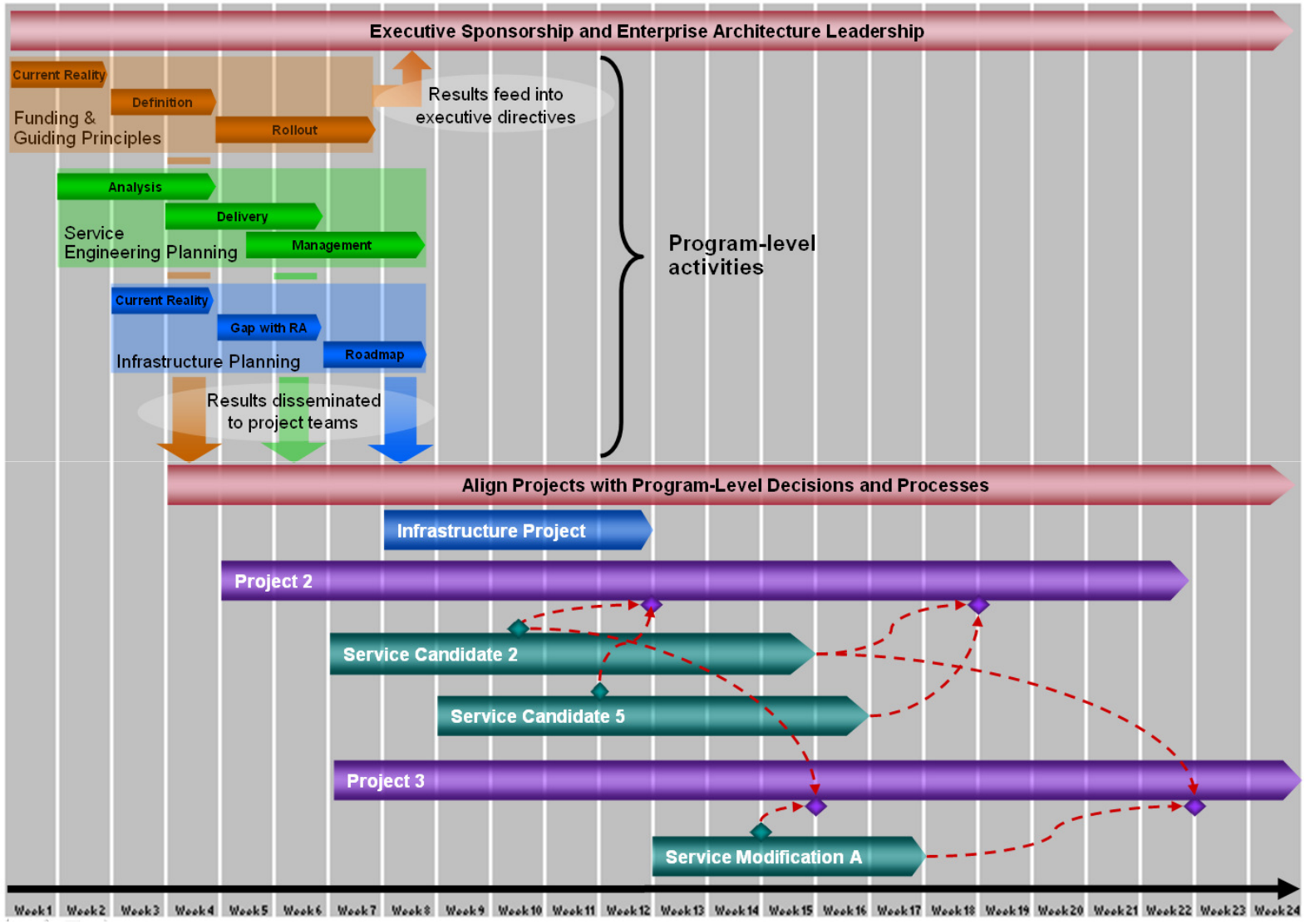
Define Schedule

- The high-level schedule defined is the schedule for the entire SOA initiative that illustrates the ordering and dependency relationships

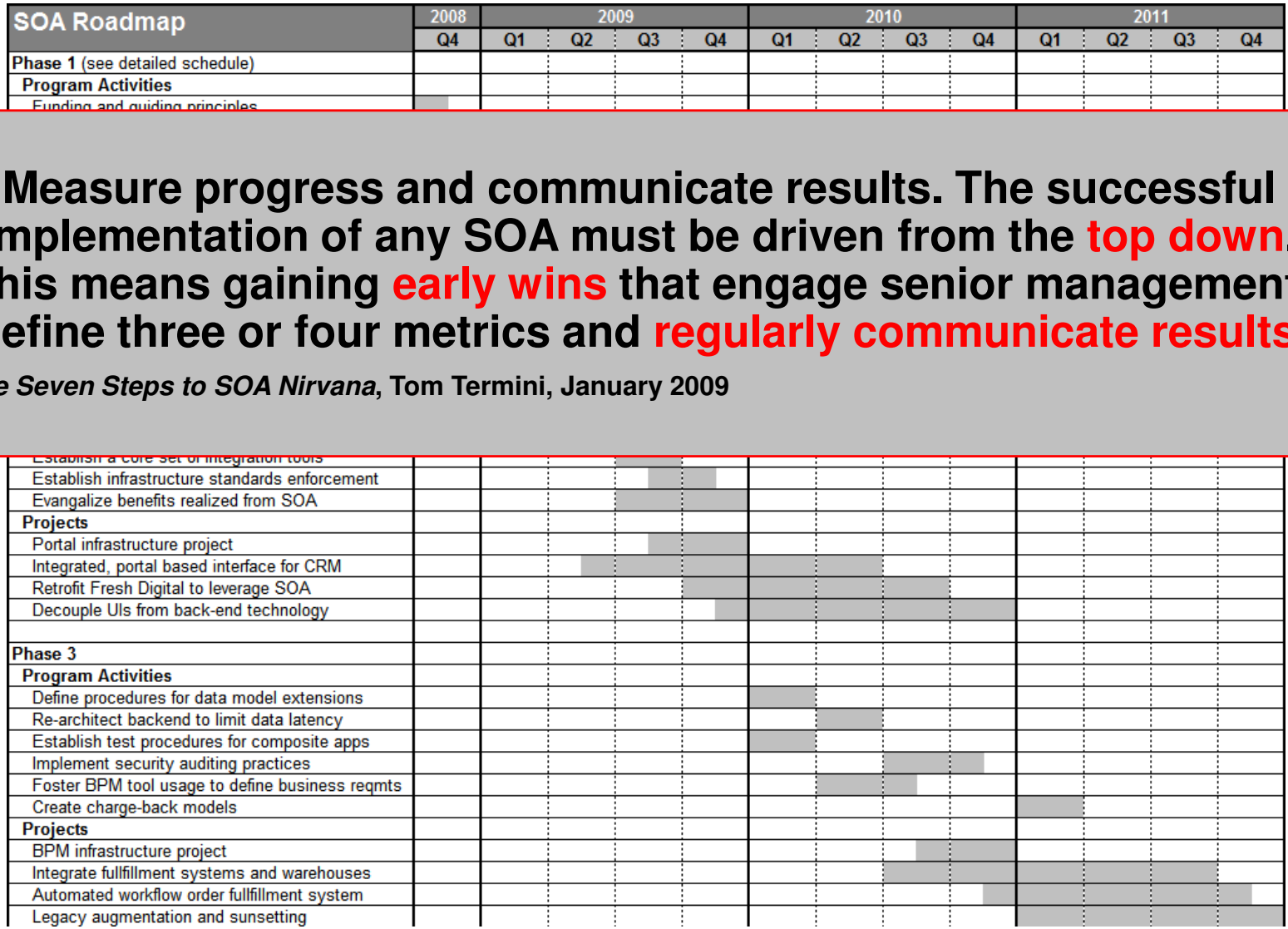
- **Program-level activities**
- **Selected projects**
- **Service modifications**
- **Selected service candidates**

1. ***Determine start date and duration of the program level activities***
2. ***Determine start dates for selected projects***
   - Should not begin in earnest until program-level activities complete. (Some overlap is allowed)
   - End date is determined by effort, complexity, resource availability, and business needs.
3. ***Determine delivery dates for service modifications***
   - Generally service modifications must be available in time for project integration testing
4. ***Determine delivery dates for service candidates***
   - Driven by the needs of the projects requiring the new service

Example SOA Roadmap Phase 1 Schedule



Example SOA Roadmap Subsequent Phases



Measure progress and communicate results. The successful implementation of any SOA must be driven from the top down. This means gaining early wins that engage senior management. Define three or four metrics and regularly communicate results.

***The Seven Steps to SOA Nirvana*, Tom Termini, January 2009**

Conclusion

- SOA Roadmap encompasses
  - Program level activities
  - Project activities
- SOA Roadmap should be based on facts
  - Ensures that the roadmap is accomplishing the goal of the SOA initiative
  - Tackle largest inhibitors early
  - Focus on early wins to build momentum
- SOA is a journey of discovery and learning
  - Iterative approach required
  - Evaluate and adjust regularly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