Smart Work for a Smarter Planet:

Business Aligned IT Discovery Series 2009.

Get Instrumented, Intelligent, and Interconnected.
And Ready for a Smarter Planet.

Deploying a Dynamic Infrastructure

Service Management – A Program for Success

In our businesses today there are over $170 Trillion worth of assets in use

Production Equipment	$5.8 Trillion in the utilities industry alone
Facilities	$162 Trillion
Transportation Assets	Over $4 Trillion
Linear Assets	Over $10 Trillion
Communication Infrastructure	Over $250 Billion in Top 15 Telco's alone
IT Hardware and Software	$52 Billion in the Fortune 500 alone, HW only

Today's smart assets are enabling new levels of service innovation, differentiation and a new economy …

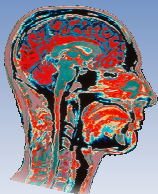**In-flight Broadband**

Just in time Production

Cost-efficient Power

Anytime Assistance

Quality Health Care

Real-time information

Access On-demand

User-initiated Cloud Services

…where everything is a service.

As products and services become smarter, so must our approach to creating and managing them…

Aligning Assets and Tools with Standard Processes

Lines of business

Datacenter Operations

Business Partners

Security Operations

Customer Relations

Network Operations

Facilities & Production

Research & Development

Across Organizational Entities

To Deliver High-Quality, Differentiated Services & Products

…to ensure maximum value to the business and our customers.

Best practices in Service Management today focus on the things that matter most to the business...

Visibility

- *See Your Business Services and Processes*
  Establish a clear, aligned and differentiated service strategy, and gain the real-time intelligence needed to measure and improve delivery against business and IT objectives.

Control

- *Manage and Secure Your Investments*
  Ensure effective governance of assets, information, processes and services through enhanced change and security controls, and compliance reporting.
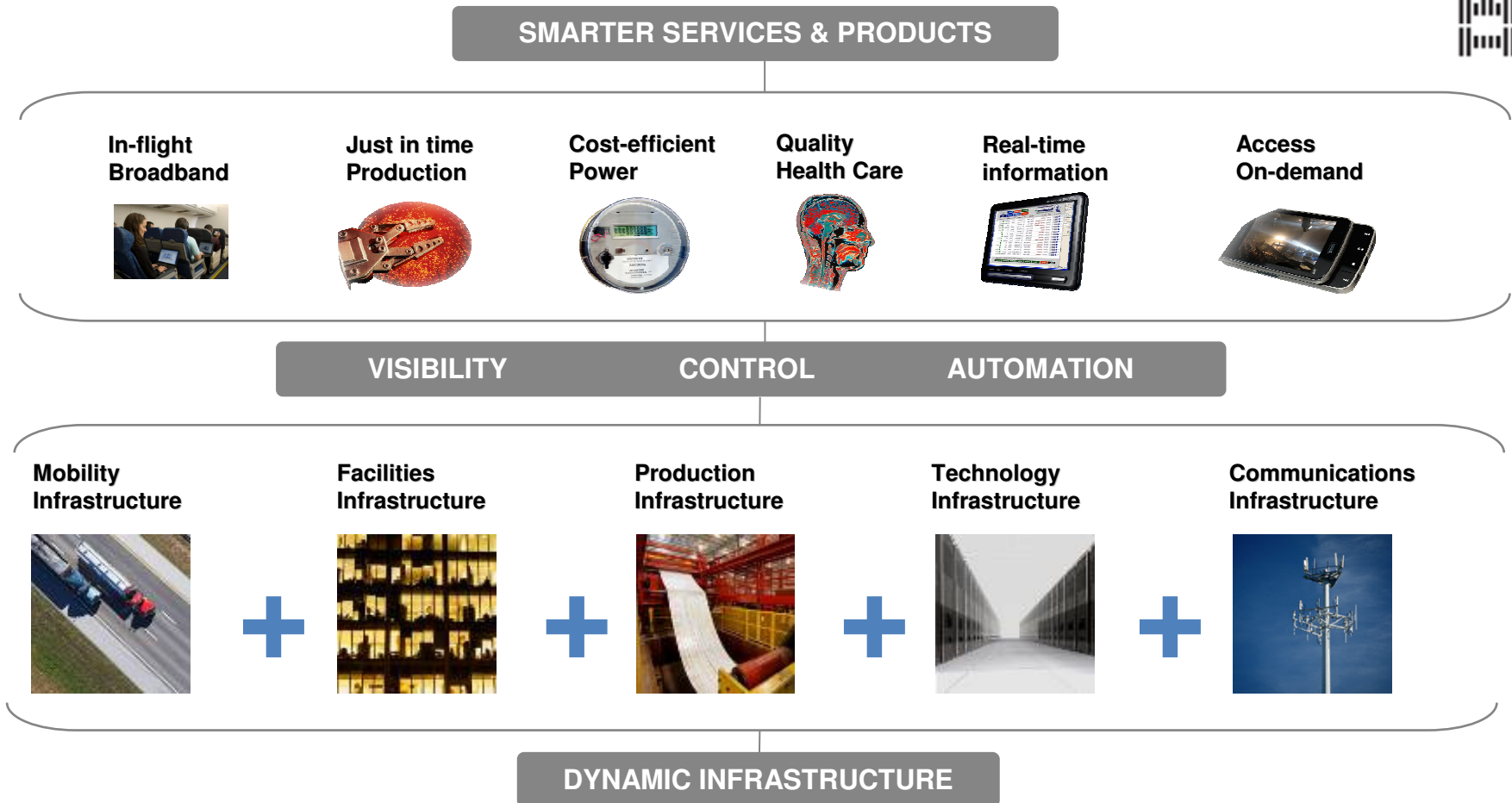
Automation

- *Build Agility into Your Operations*
  Improve integration and automation of workflow across operational silos, tools, and processes for reduced cost and improved time to market.

Implementing an integrated service delivery platform provides the visibility, control & automation needed to achieve a dynamic infrastructure...

SMARTER SERVICES & PRODUCTS

In-flight Broadband	Just in time Production	Cost-efficient Power	Quality Health Care	Real-time information	Access On-demand

VISIBILITY   **CONTROL**   **AUTOMATION**

Mobility Infrastructure	Facilities Infrastructure	Production Infrastructure	Technology Infrastructure	Communications Infrastructure

DYNAMIC INFRASTRUCTURE

...enabling new efficiencies and opportunities for competitive differentiation.

Service Management and Virtualization

Virtualization adoption can take many forms from physical consolidation to abstraction and pooling to cloud computing – all of which must be monitored, provisioned, controlled and updated.

IMPROVE SERVICE
REDUCE COST
MANAGE RISK

Virtualization
Energy Efficiency
Security
Service Management
Business Resiliency
Asset Management
Information Infrastructure

- Monitor health and performance with visibility to capacity trends and available resource pools
- Achieve dynamic discovery, change management and provisioning for just-in-time capacity allocation
- Manage and align virtual systems and storage resources with business objectives
- Automate workloads and system functions to optimize and balance across virtual systems
- Accurately assess usage in virtualized environments to better determine IT resource and expense justification

Reduce costs, improve service quality and achieve a higher degree of automation across your organization

Service Management and Energy Efficiency

Data Center energy use has doubled in the last 5 years and now accounts for 1.5% of all energy used in the U.S. If this trend continues, the IT industry could have a larger carbon footprint than the aviation industry.


Single solution across IT and facilities:

- Monitoring for energy management
- Energy usage tracking, cost accounting & chargeback
- Asset & facilities management
- Energy aware provisioning

- *Optimize energy costs* and deliver new services with existing footprint
- Gain intelligent *realtime and predictive* energy management decisions
- React quickly to energy spikes – and take automated actions based on service levels

Reduce costs, optimize power consumption and better manage system and facilities power usage.

Service Management and Asset Management

Proliferation of smart assets and on-board IT has increased asset sophistication and is driving the convergence of the digital and physical worlds.
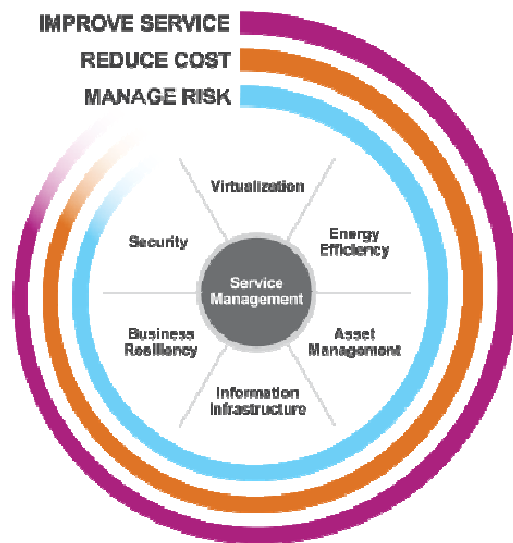
- Manage all critical assets throughout their life, extend their life and maximize their value to the enterprise

- Mitigate license, regulatory, environmental and safety compliance risk while reducing associated cost

- Improve *total cost of ownership* by continuously reducing asset costs throughout their lifecycle

- Gain a single solution to manage *all types of assets*: Production, Delivery, Transportation, Facilities, Infrastructure and IT

Manage the IT and non-IT assets across their entire lifecycle to lower cost, mitigate risk, and better align assets with business goals.

Service Management and Information Infrastructure

Dynamic Infrastructure drives staggering volumes of information. 4 Exabytes in 2008. 200 Million MySpace Users. 31 Billion Searches per month.

- Gain rapid *recovery, data reliability and integrity* across the Information Infrastructure
  - Data protection
  - Data replication
  - Storage resource mgmt
  - Storage infrastructure mgmt
- Achieve policy-based management of information access, retention, and disposal of data aligned to business controls.
- Create *complete transparency* across the information lifecycle for all business data and records.
- Effectively *prevent disruptions* due to data loss

Cost effectively manage, backup, store and protect massive volumes of data. Tap information for competitive advantage.

Service Management and Business Resiliency

Information growth continues unabated making it more critical than ever to ensure a secure, resilient infrastructure.

Unlock the business value of information with a resilient infrastructure for securely storing information and mitigating business risks

- Lay a *foundation for system recovery* and continuous service availability in the event of a disaster

- *Comply with regulatory standards* by demonstrating ability to recover from system interruptions

- Service management for business resiliency provides:
  – Continuous availability of data and services
  – Reduced backup times
  – Performance and availability solutions
  – Security and hardware availability

Cost-effectively support regulatory measures.   Ensure service availability and facilitate better planning.
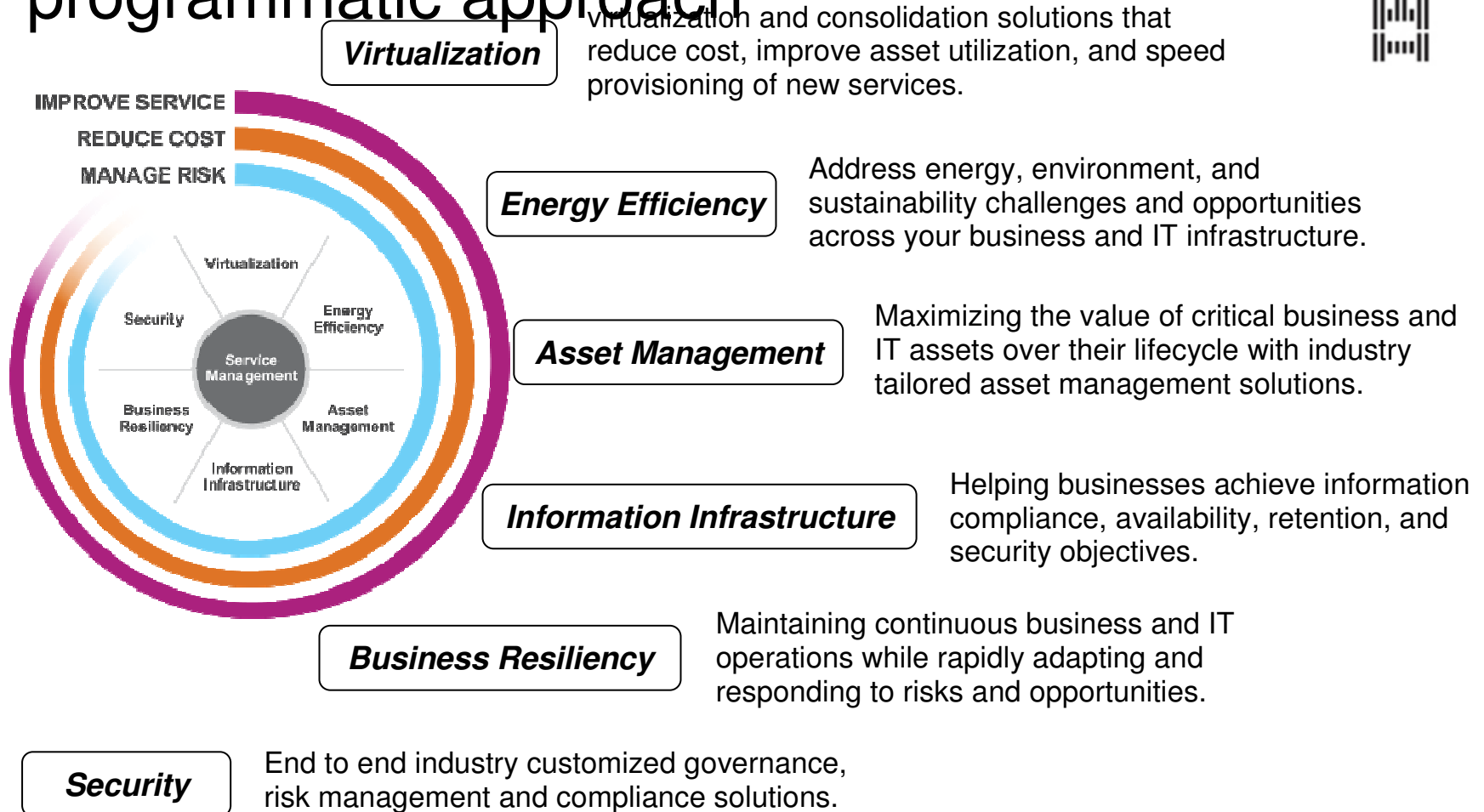
Service Management and Security

Not all risks are created equal and organizations must secure the enterprise against a barrage of new and evolving sophisticated threats – which can be data, business or event driven.

- Strategically manage risk end-to-end across all security domains. IBM's framework-based security offerings provide the solutions and expertise you need to:
  - Enable business change through a foundation of *flexible security control*
  - Reduce the complexity of security controls
  - Ensure *secure service delivery*
  - Protect against internal and external threats
  - Meet operational requirements to *address compliance measures*

Deliver improved agility and cost–effective control over your risk posture and incident response.

Deploying a dynamic infrastructure…. requires a programmatic approach

IMPROVE SERVICE
REDUCE COST
MANAGE RISK

Virtualization

Virtualization and consolidation solutions that reduce cost, improve asset utilization, and speed provisioning of new services.

Energy Efficiency

Address energy, environment, and sustainability challenges and opportunities across your business and IT infrastructure.

Asset Management

Maximizing the value of critical business and IT assets over their lifecycle with industry tailored asset management solutions.

Information Infrastructure

Helping businesses achieve information compliance, availability, retention, and security objectives.

Business Resiliency

Maintaining continuous business and IT operations while rapidly adapting and responding to risks and opportunities.

Security

End to end industry customized governance, risk management and compliance solutions.

IBM uses a collaborative approach is used to better understand objectives, define an architecture, roadmaps and program plan for deploying a Dynamic Infrastructure
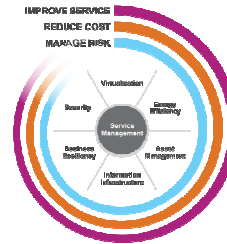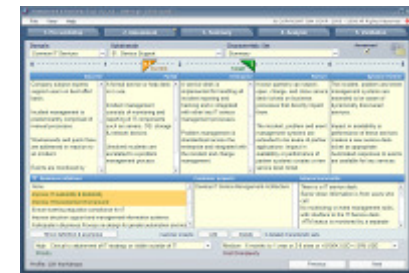
1. Understand Strategy and Plans

Provider Relationship Model

Enabler
Partner
Utility
Commodity
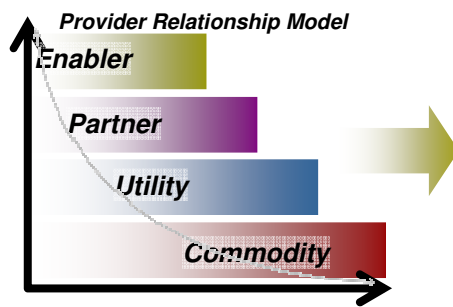
Understand IT and Business Objectives

2. Understand Current Capabilities

Evaluate Current State to Identify Capability Gaps and Improvements

3. Develop Management Vision

Define Service Management Capabilities required to have achieve objectives

4. Identify Solution Architecture

Establish the conceptual architectural framework

5. Define Implementation Roadmap
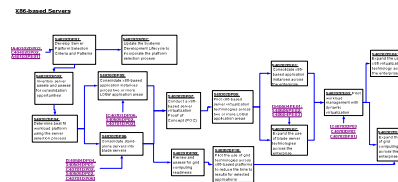
Prioritize and Sequence Design and Implementation Initiatives

6. Develop Business Case
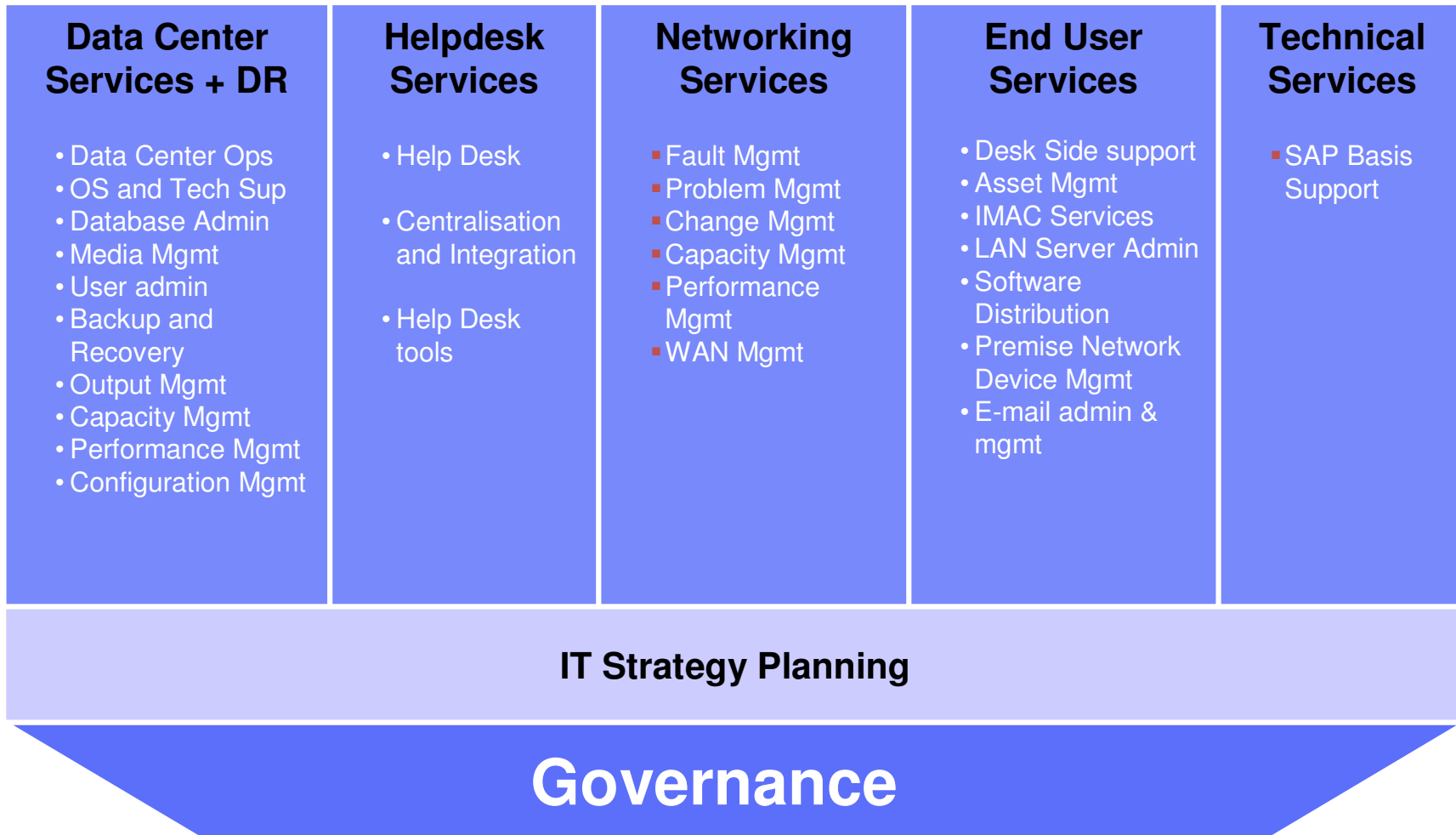

Justify Initiatives and Develop Business Case

Client Case Study

Deploying a Dynamic Infrastructure

Service Management – A Program for Success

Client Services – Enterprise View

Data Center Services + DR	Helpdesk Services	Networking Services	End User Services	Technical Services
• Data Center Ops • OS and Tech Sup • Database Admin • Media Mgmt • User admin • Backup and Recovery • Output Mgmt • Capacity Mgmt • Performance Mgmt • Configuration Mgmt	• Help Desk • Centralisation and Integration • Help Desk tools	▪ Fault Mgmt ▪ Problem Mgmt ▪ Change Mgmt ▪ Capacity Mgmt ▪ Performance Mgmt ▪ WAN Mgmt	• Desk Side support • Asset Mgmt • IMAC Services • LAN Server Admin • Software Distribution • Premise Network Device Mgmt • E-mail admin & mgmt	▪ SAP Basis Support

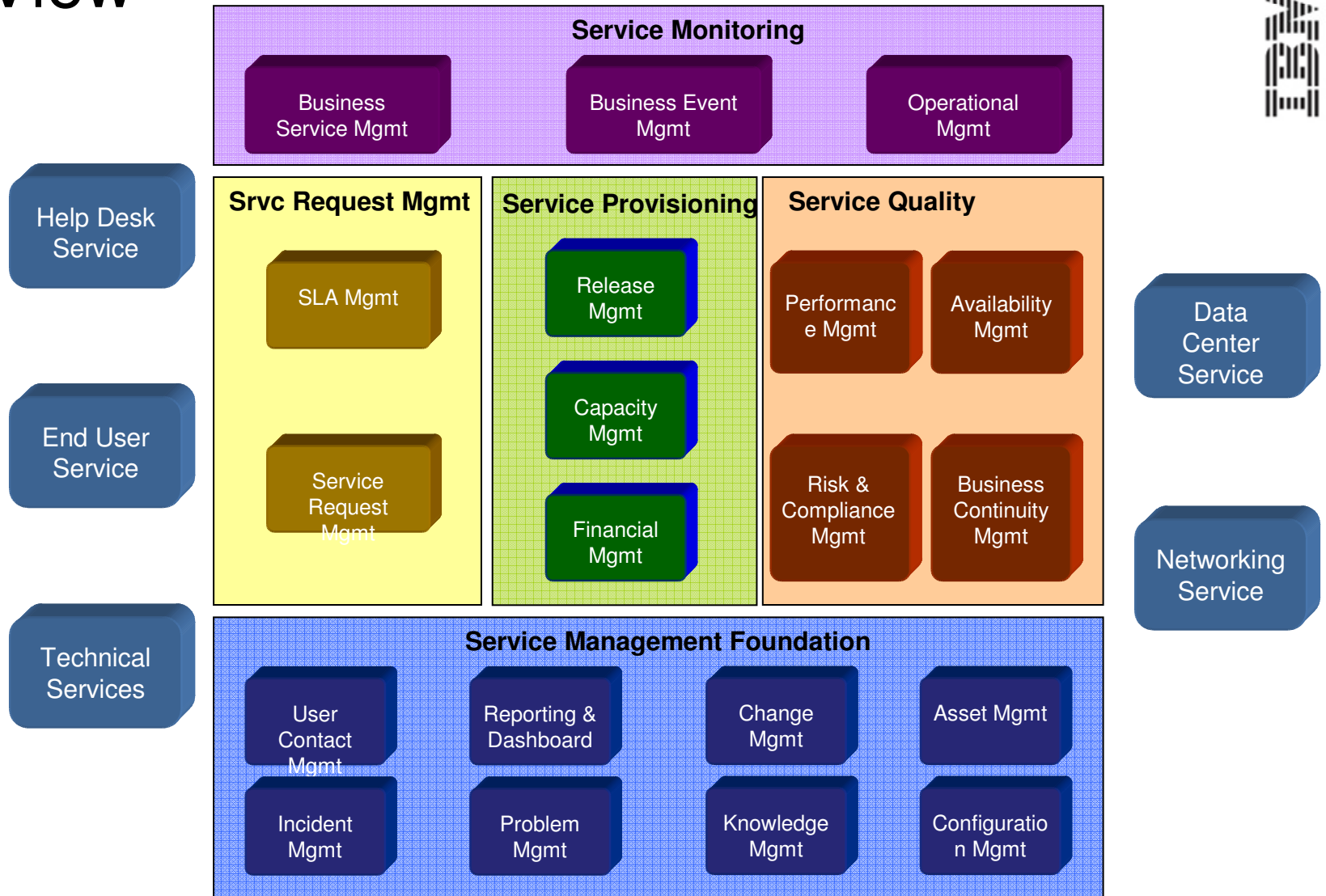**IT Strategy Planning**

Governance

Client – Infrastructure View

- Data center services
  - 250+ AIX / Wintel servers across 5 locations
  - 60 Service mgmt personnel
  - ERP, Mail, customer applications
- End-user services
  - 10000 PCs and laptops, 2000 printers
  - Call-center – 24 agents
  - Desk-side – 65 engineers
  - Remote management – 12 engineers

- Network management services
  - Device heterogeneity
    - Routers, L2/L3 Switches, Firewalls, Concentrators, SSL VPN Devices, Load balancers, Wan Accelerators, Wireless Access Point
    - From Cisco, Juniper, 3COM, Allied
  - Network heterogeneity
    - IBM Intranet, Client Intranet, VSNL, Internet

  - Service mgmt personnel – 11

Client Architecture – IT Capability View

Service Monitoring

- Business Service Mgmt
- Business Event Mgmt
- Operational Mgmt

Help Desk Service

End User Service

Technical Services

Srvc Request Mgmt
- SLA Mgmt
- Service Request Mgmt

Service Provisioning
- Release Mgmt
- Capacity Mgmt
- Financial Mgmt

Service Quality
- Performance Mgmt
- Availability Mgmt
- Risk & Compliance Mgmt
- Business Continuity Mgmt

Data Center Service

Networking Service

Service Management Foundation
- User Contact Mgmt
- Reporting & Dashboard
- Change Mgmt
- Asset Mgmt
- Incident Mgmt
- Problem Mgmt
- Knowledge Mgmt
- Configuration Mgmt

Requirements summary

- End-user services**
  - Regular back-up of end-user (VIP users) data from desktop / laptop in a secure manner
  - Generate Incident Report in a scheduled manner
  - Support self-help for end-users to perform repetitive tasks such as 'reset password'.
  - Analyze & report the incident per configuration-item
  - Analyze the trends in end-user incidents - by category, by severity, by Age..
  - Remotely monitor and perform preventive maintenance of the network printers

- Data-center services**
  - Fine-tune the threshold and other reactive alert configuration settings in the existing monitoring tools
  - Monitor SAP backups and reduce the backup window increasing availability of SAP application
  - Real-time dashboard for performance & availability events/metrics (originating from systems, & applications)
  - Increase the coverage for performance and availability metrics / alerts to SAP
  - Proactive alerting (trending & predictive analysis)
  - SLA monitoring
  - Capacity planning using the information from SRM reports

- Data-center services – Storage**
  - Monitor and alert for storage system's usage
  - Manage / administer the storage systems – such as creating volumes, dynamically allocating to systems, etc..)
  - Generate report on the usage trend of the storage systemz

*** Only the Critical & High priority requirements from each tower*

Solution Design – Guiding principles…

- Use the plusOne to deliver client value "one product" at a time.

  – plusOne Adoption route: Best practices & proven approaches for deploying Tivoli software to support the business scenarios.

- plusOne Approach - Client will realize business-value incrementally

  – Start a **scenario** with the description of the Client's business destination, and the technology for achieving it.

  – An **adoption routes** will guide Client to the end state.

  – In each **phase** (in the adoption route) a new product ("+1") is added.

  – Proceed on the route until the destination ("scenario") is reached.
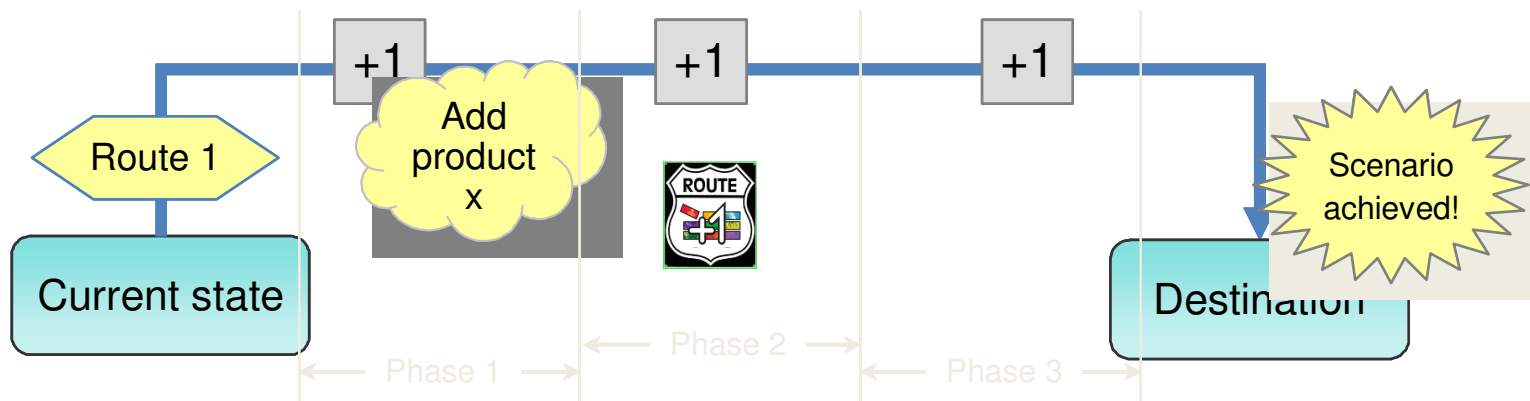
Data-center storage services

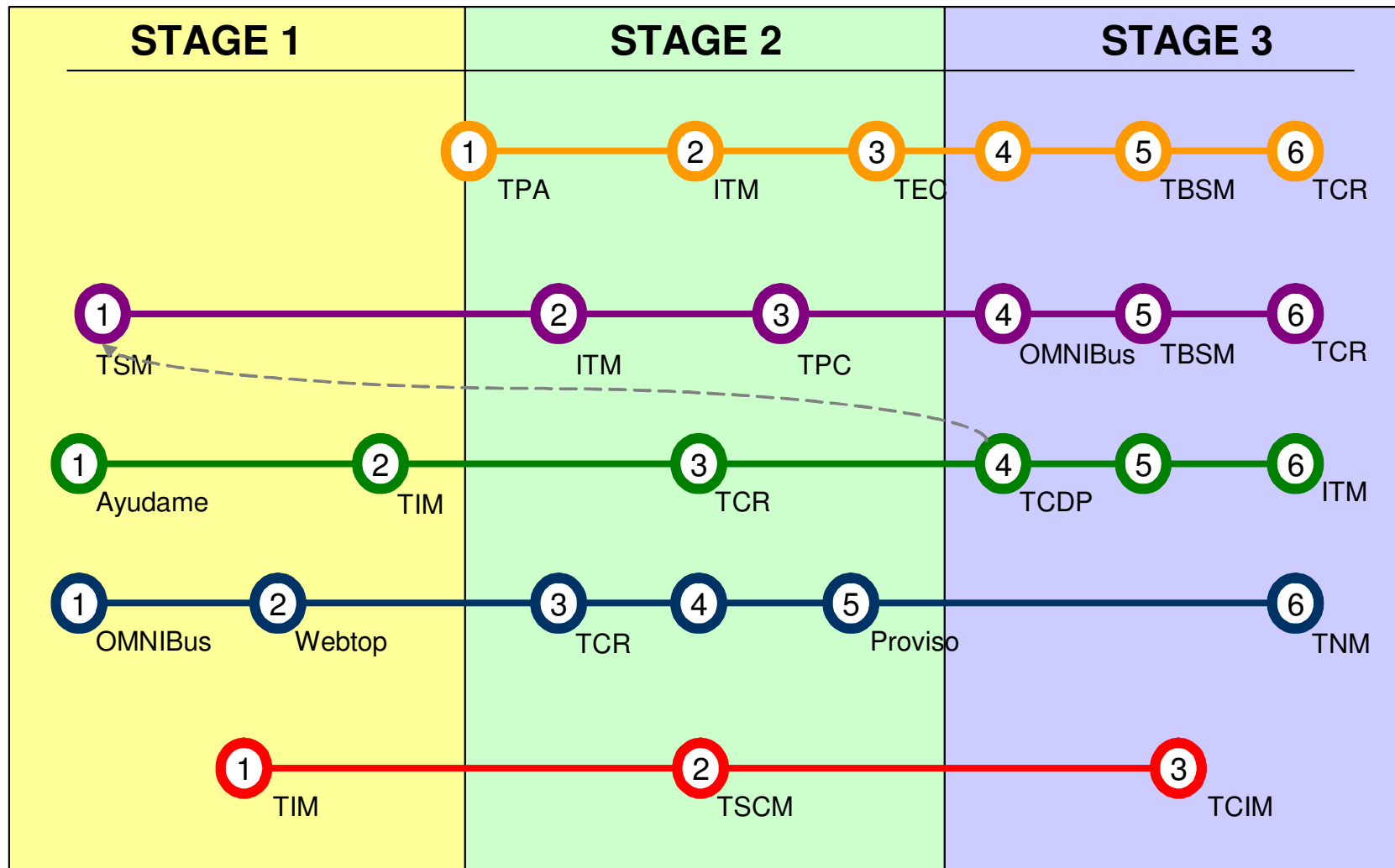| Before Transformation	After Transformation
14-15 hrs to backup 8TB of filesystems/ databases. Off-line backups for 24 hrs, once a month.	Reduce the time-taken to take offline backup Increase SAP system availability **(50-60% reduction in backup window for SAP & filesystem)**
50% of false calls Less no. of events are captured	Increase in the number of systems & business processes monitored **(All the valid alerts)** **(Increase the no. of events monitored)**
30% effort to generate weekly storage report per application usage,	Management & day-to-day administer the Storage systems. Monitoring Storage usage & avert major incidents **(reduce from 30% to 10% effort)**

Data-center storage services

- Adoption Route
  - Start – Improve the throughput of the backup operation for SAP; Provide availability monitoring of SAP applications & business processes
  - Proceed – Support availability & performance monitoring of storage systems; Automatically raise incidents based on events from SAP or storage system;
  - Conclude – Support for SLA monitoring, & predictive capacity planning for storage system

	Phase Name	Software added this phase	Route accumulation	Current baseline	Resulting business value
1	Improve the throughput of SAP backup operations	TSM	TSM	14-15 hrs to backup 8TB of filesystems/ databases. Off-line backups for 24 hrs, once a month.	Reduce the time-taken to take offline backup Increase SAP system availability **(50-60% reduction in backup window for SAP & filesystem)**
2	Monitor SAP for availability metrics	IBM Tivoli Monitoring (ITM) with Tivoli data-Warehouse (TDW)	TSM + ITM	50% of false calls Less no. of events are captured	Increase in the number of systems & business processes monitored **(All the valid alerts)** **(Increase the no. of events monitored)**
3	Monitor & managing the Storage systems	TotalStorage Productivity Center (TPC)	TSM + ITM + TPC	30% effort to generate weekly storage report per application usage,	Management & day-to-day administer the Storage systems. Monitoring Storage usage & avert major incidents **(reduce from 30% to 10% effort)**
4	Automatically raise incidents for alerts from SAP & Storage systems	Netcool/OMNIBus	TSM + ITM + TPC+ OMNIBus		Improve problem resolution cycle time
5	SLA Monitoring	Tivoli Business Service Manager (TBSM)	TSM + ITM + TPC+ OMNIBus + TBSM		Dynamically optimize the 'SLA impact' to 'Operational cost' ratio Reduce in the number of escalations
6	Capacity Planning	Tivoli Common Reporting (TCR)	TSM + ITM + TPC+ OMNIBus + TBSM + TCR		Reduce staff time spent in costing activities Reduce dependencies on people instinct

Composite Approach

Solution Design Scope

Technology	Understand Client Environment		Define Managed Elements		Design Service Management Architecture				
Process & Information	Conduct Capability Assessment	Identify Key IT Services / Define Service Management Governance		Identify Solution Requirements	Design Process Solution / Design Information Solution	Design Services Solution	Design Service Management Solution	Perform Scenario Walkthroughs	Define High Level Implementation Plan
Organization					Design Organizational Solution				

| **Design Requirements** | **Design Strategy** | **Solution Requirements** | **Solution Design** | **Implementation Planning** |

Deliverables:

| Requirements Document | Solution Requirements Document | Architecture Description | Implementation Plan |