



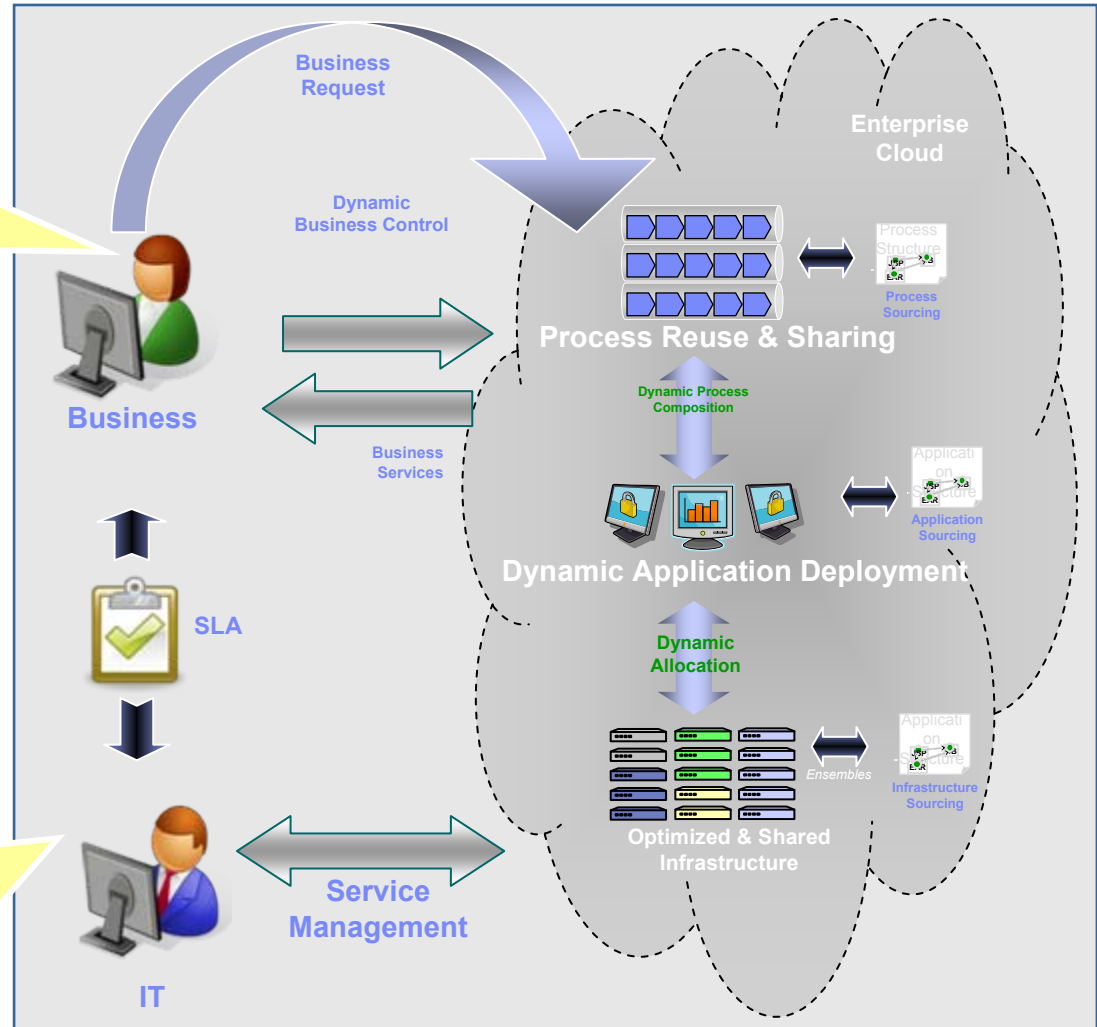
Soluzioni Software IBM Tivoli a supporto del cloud computing

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The general market trends towards more flexible, responsive and dynamic IT services impose new or enhanced customer requirements

- Need to get access to IT services more rapidly
- Need better responsiveness for change requests
- Need better availability of services
- Need a shorter turn-around time for problem resolution
- Need lower cost per service

- Need a higher degree of standardization and automation for deployment and management of services
- Need to maintain or improve quality and cost per service
- Need management stack that's easier to handle
- Need smoother transition from pre-production to production
- Need to be audit proof and integrated within my process governance



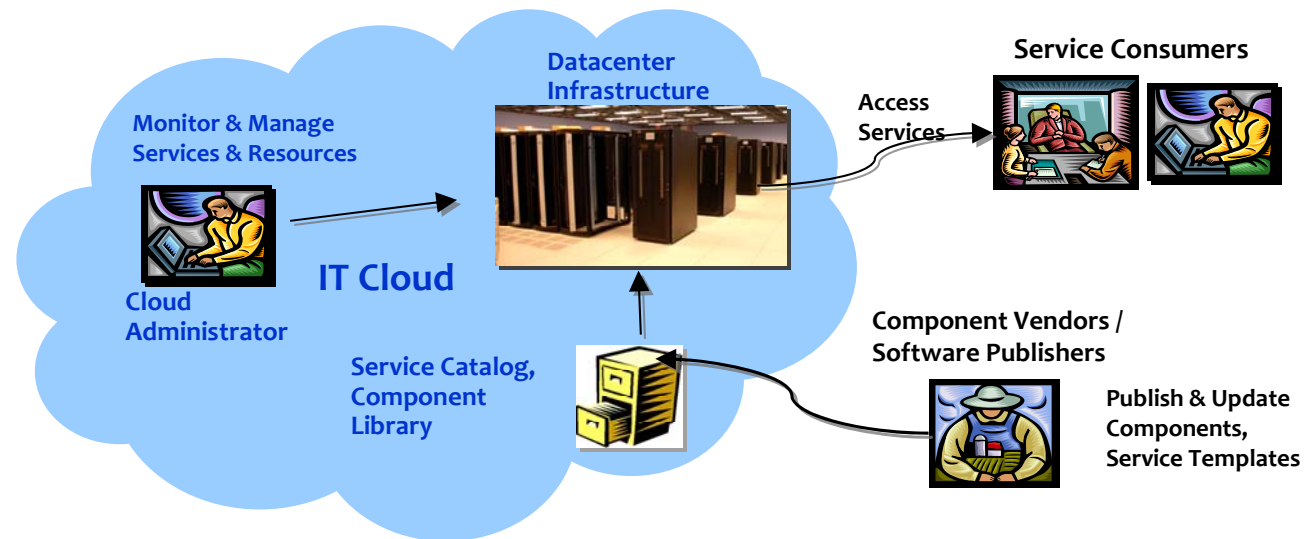
What is Cloud Computing?

It is a user experience and a business model

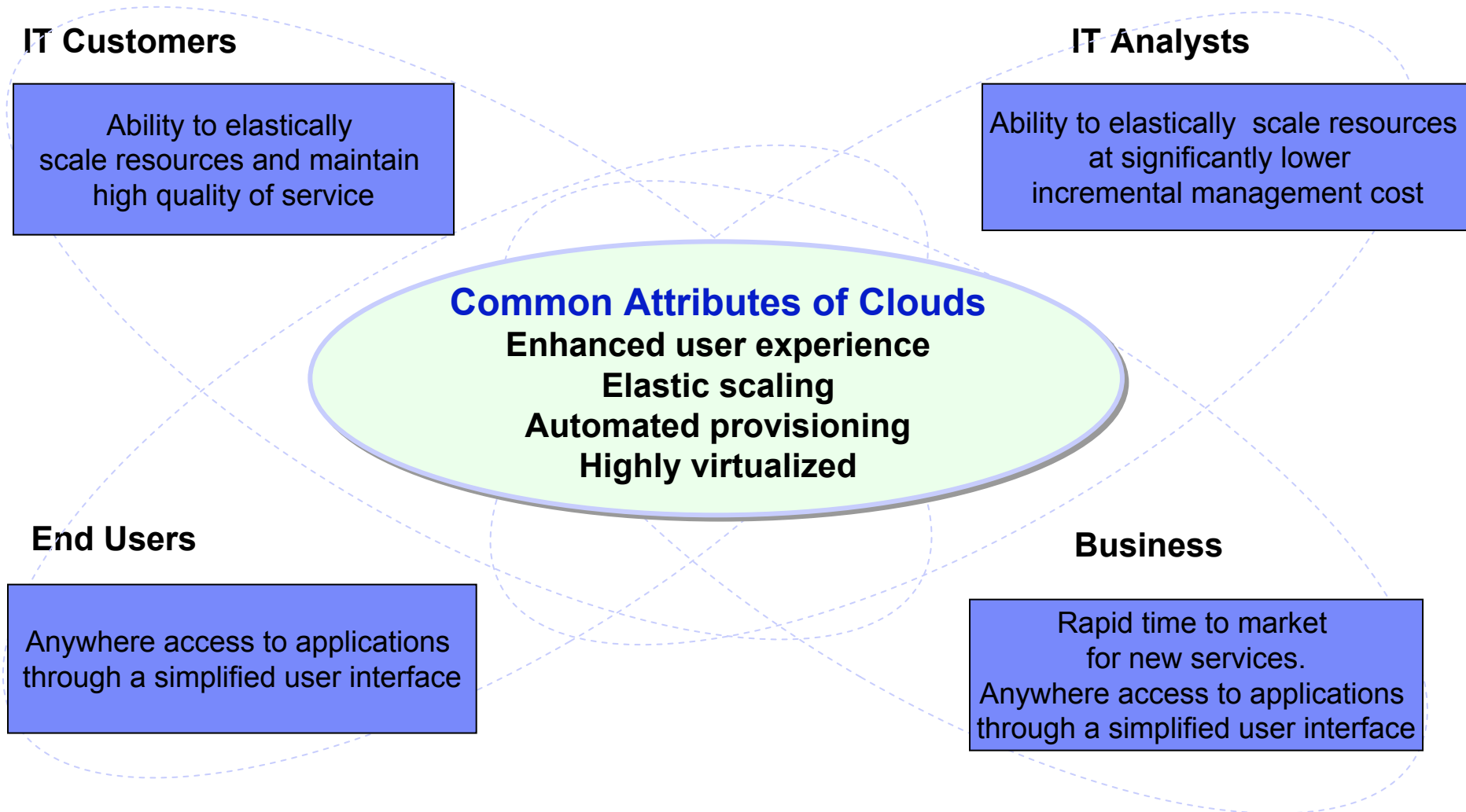
Cloud computing is an emerging style of computing in which applications, data, and IT resources are provided as services to users over the web.

Cloud principles will bring a level of standardization to infrastructure management methodology

Cloud computing drives cost reduction and simplification, by consolidation and more efficient utilization of existing resources



The Emergence of Cloud Computing



The evolution to Cloud Computing

A "cloud" is an IT service delivered to users that has:

- A user interface that makes the infrastructure underlying the service transparent to the user
- Reduced incremental management costs when additional IT resources are added
- Services oriented management architecture
- Massive Scalability

Grid Computing

- Solving large problems with parallel computing



Utility Computing

- Offering computing resources as a metered service



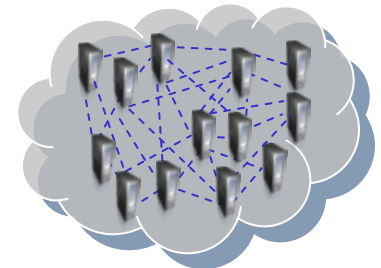
Software as a Service

- Network-based subscriptions to applications



Cloud Computing

- Anytime, anywhere access to IT resources delivered dynamically as a service.



Cloud computing – *two different implementation options*

Private Cloud

- Enterprise owned and managed.
- Access limited to client and its partner network.
- Drives efficiency, standardization and best practices while retaining greater customization and control.

Public Cloud

- Service provider owned and managed.
- Access by subscription.
- Delivers select set of 3rd party owned and managed business process, application and/or infrastructure services on a flexible “pay per use” basis.

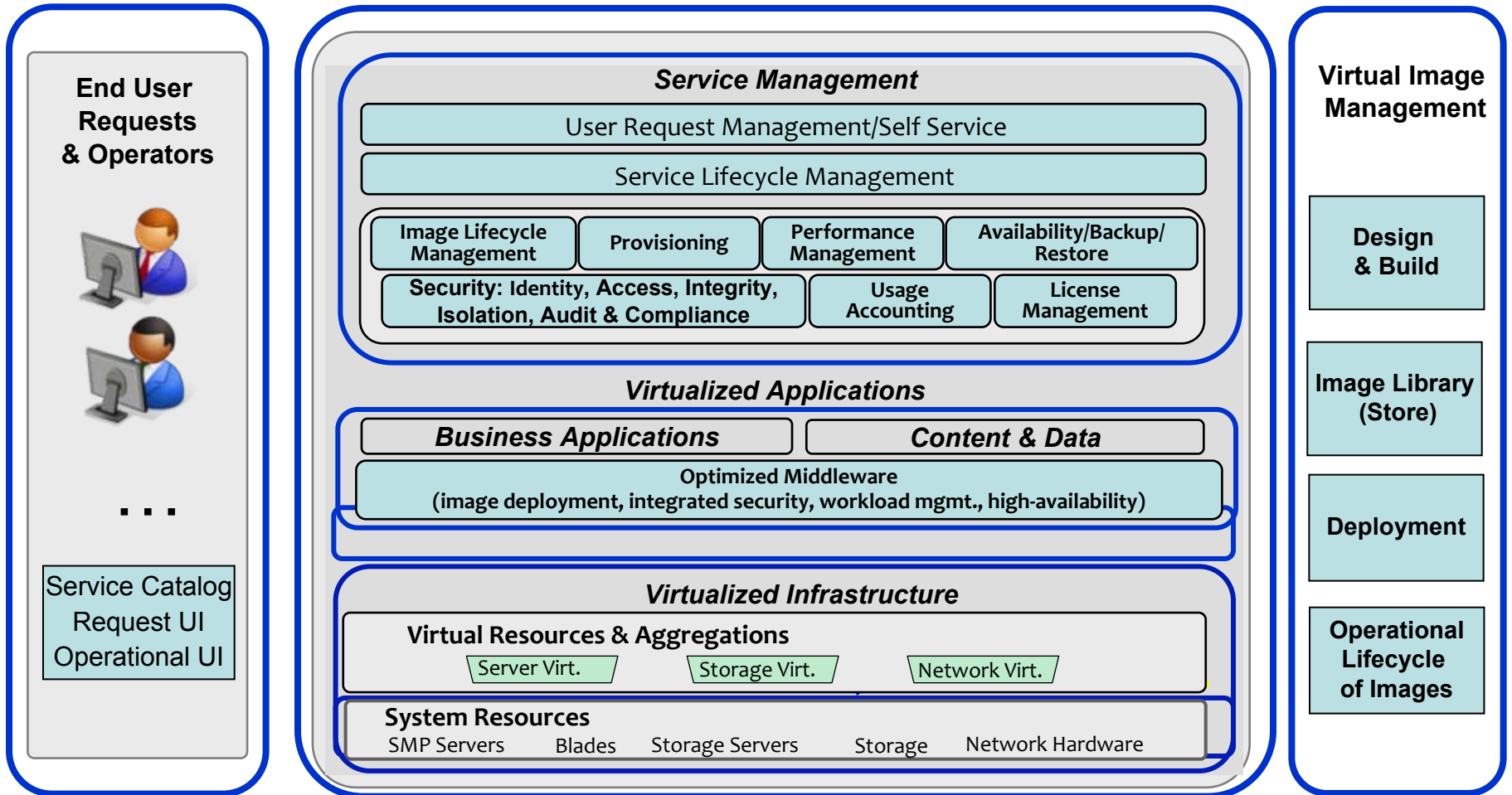


IBM Architectural Model for Cloud Computing

Service Request & Operations

IT Infrastructure & Application Provider

Service Creation & Deployment



Core Attributes of IBM Service Management

Visibility



See My Business

**Respond faster
and make better
decisions**

Control



**Manage My
Business**

**Improve quality
and reduce risk**

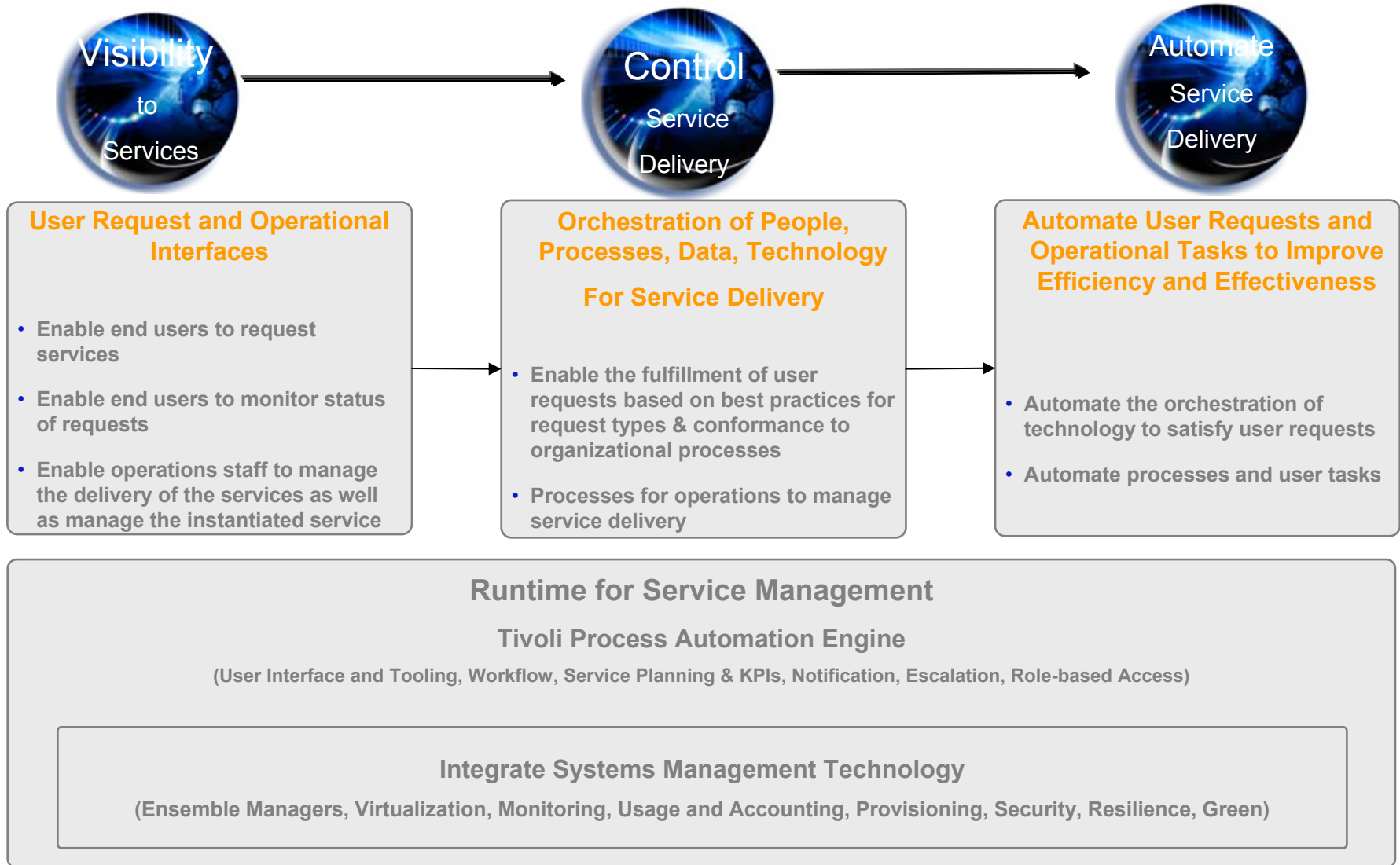
Automation



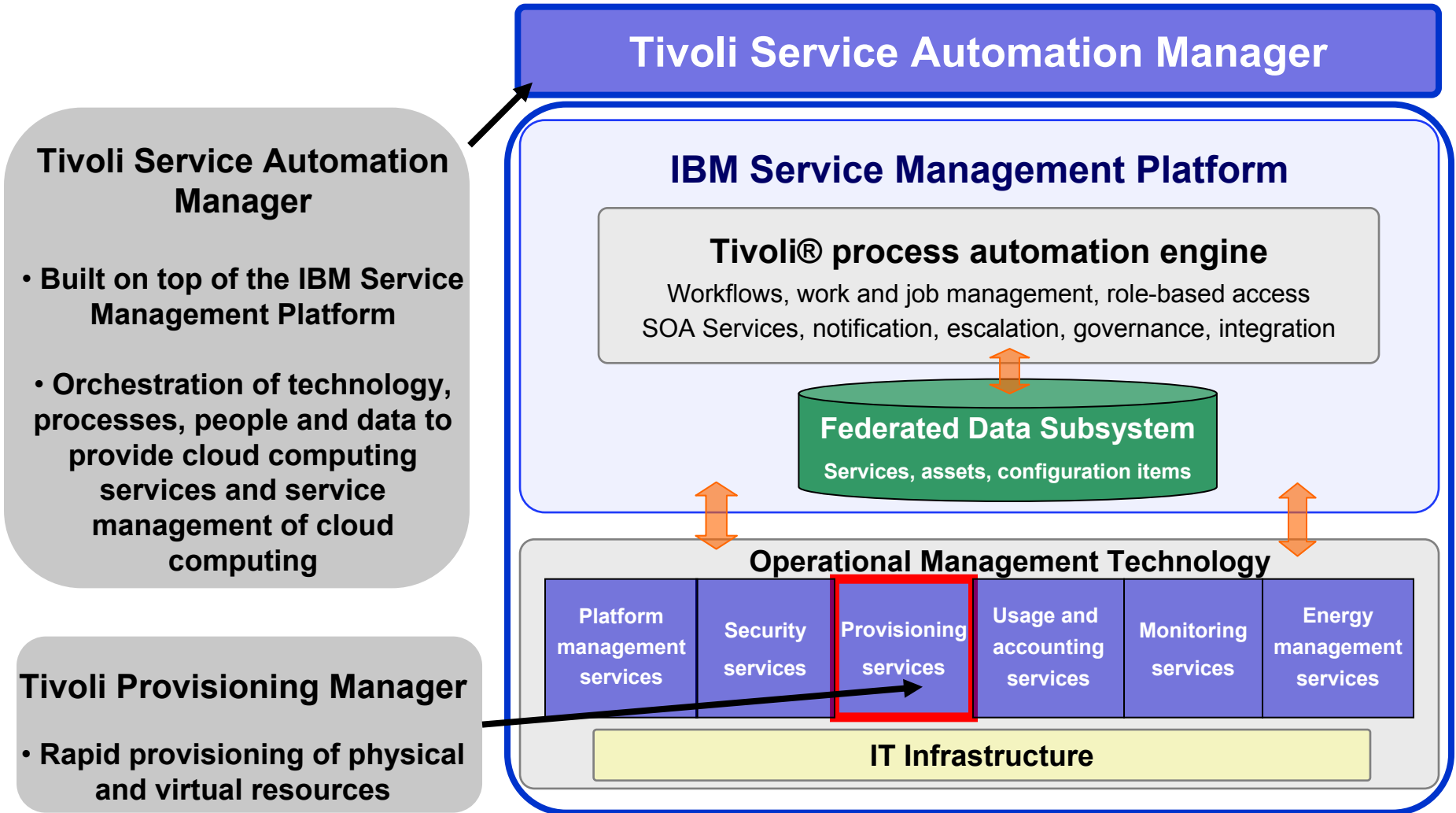
**Improve My
Business**

**Lower costs and
build agility**

Capabilities needed for Service Management



Tivoli software for cloud computing



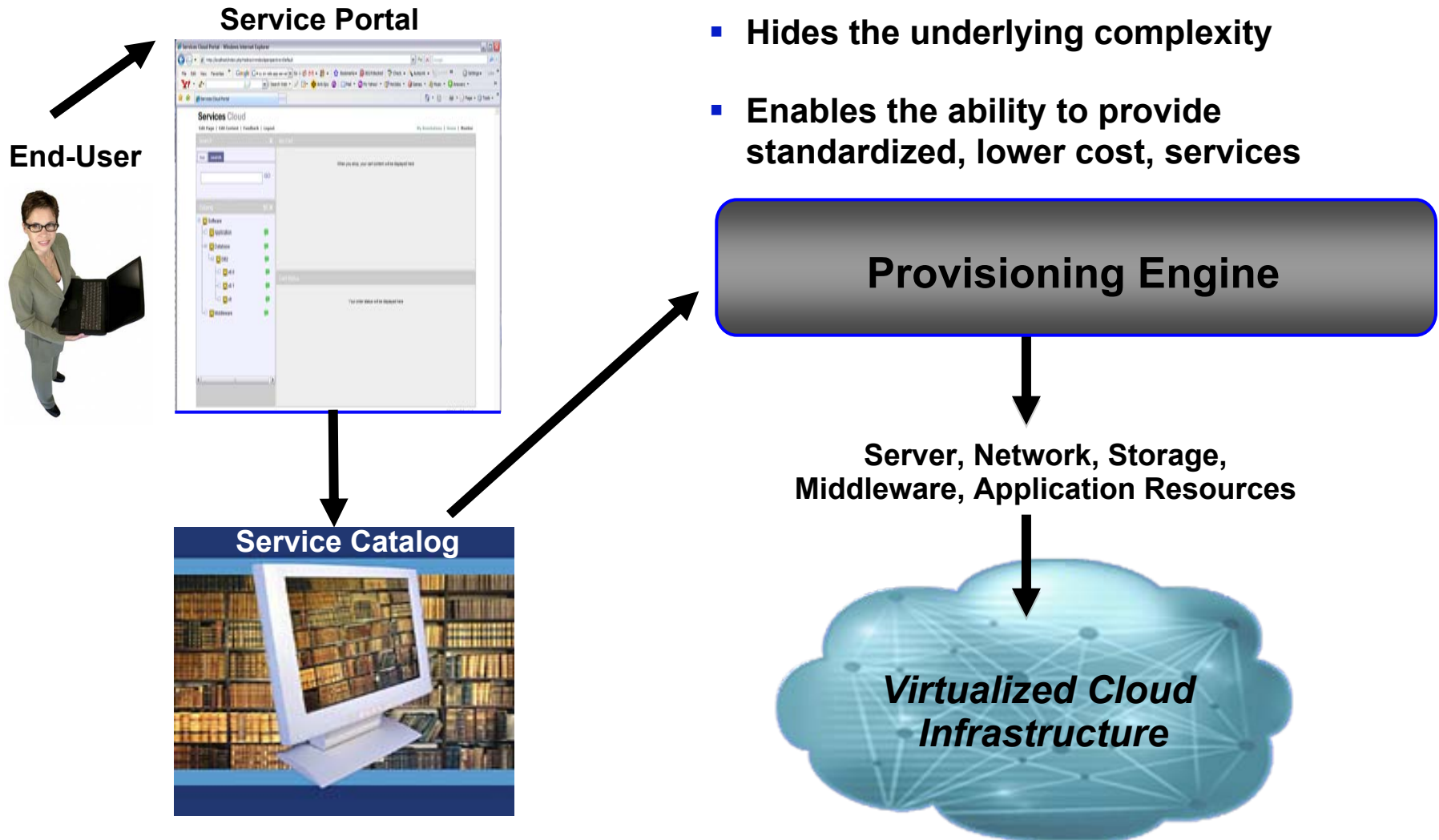
Tivoli Service Automation Manager (TSAM)

- **Rapid adoption of foundational capabilities for deploying and managing cloud services**
 - Dynamic instantiation and management of cloud services along their entire lifecycle
 - Automation based on build and management plans including humans and management components
- **Integrated management solution**
 - Based on strategic Tivoli Process Automation Engine (TPAE)
- **An integration of existing Tivoli capabilities and additional new capabilities, workflows and best practices together as a single solution for our clients**
- **Request-driven provisioning and scheduling**
- **Application on-boarding through automation of middleware deployments**
- **Complete lifecycle service management**

Service Provisioning

A base capability of cloud services...

- Easy to access and use Service Catalog
- Hides the underlying complexity
- Enables the ability to provide standardized, lower cost, services

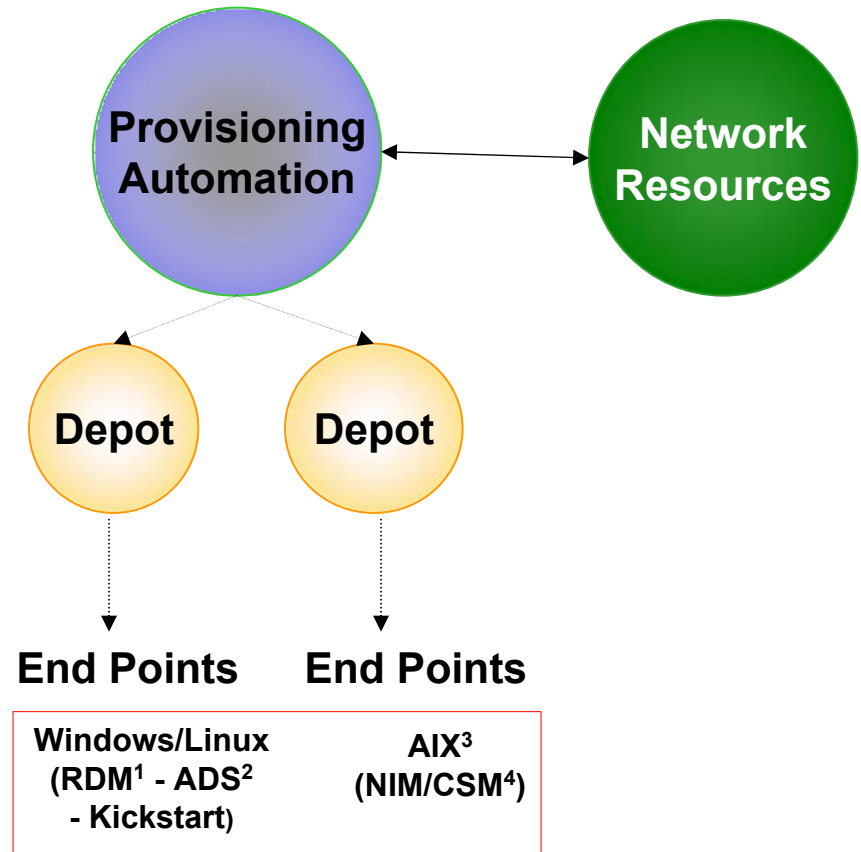


Provisioning virtual resources leverage existing procedures

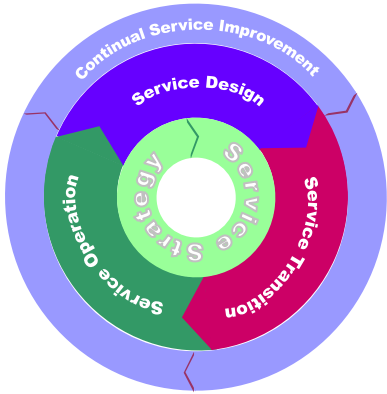
Supports existing procedures and scripts to install virtual operating environments, middleware and application software

1. Drive the bare-metal installation of heterogeneous virtual server environments
2. Execute middleware and application software installation procedures
3. Configure appropriate routers, switches and firewalls
4. Add necessary storage and configure proper virtual server Internet Protocol (IP) settings
5. Configure load balancer and place virtual servers into production

- Utilizes existing procedures and scripts
- Integrates with software distribution solutions
- Complete end-to-end automation solution



TSAM: Manage Life Cycle of Business Services



Subscribe to Service

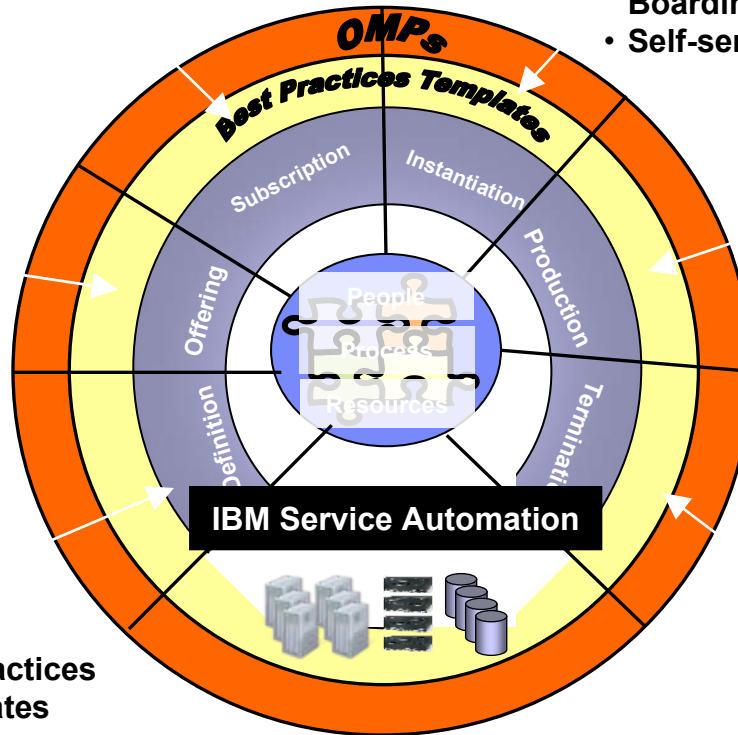
- Request a service
- “Sign” Contract

Instantiate/Deploy Service

- Provisioning including Management Agents and Best Practices
- Application / Service On Boarding
- Self-service

Offer Service

- Register Services and Resources
- Add to Service Catalog



Manage Production of Service

- Visualize all aggregated information about situations and affected services
- Control change and incident process
- Automate activities to execute changes
- Include charge-back

Define Service

- Scope of Service
- SLAs
- Topologies, Best Practices Management Templates

Terminate Service

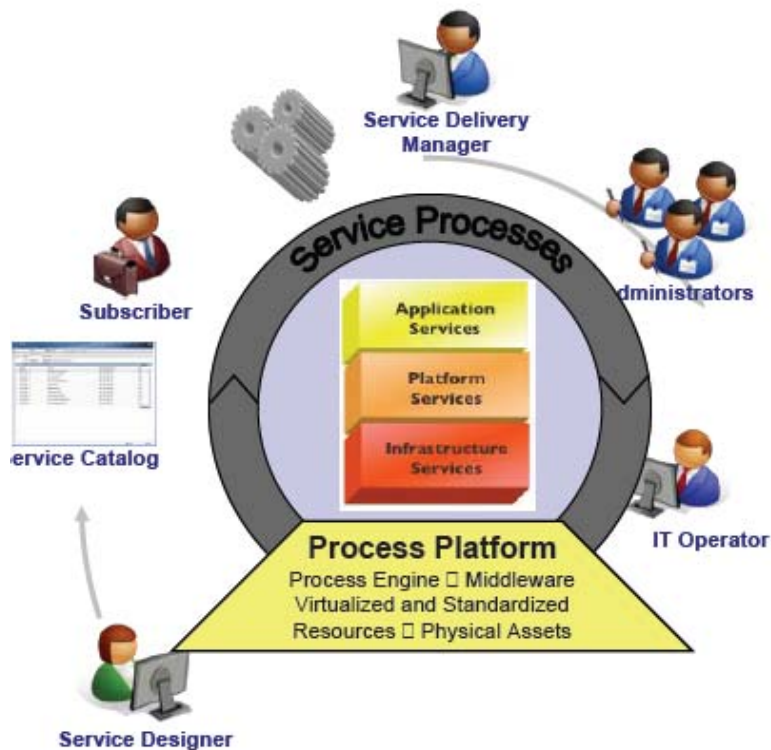
- Controlled Clean-up

Tivoli Service Automation Manager Capabilities

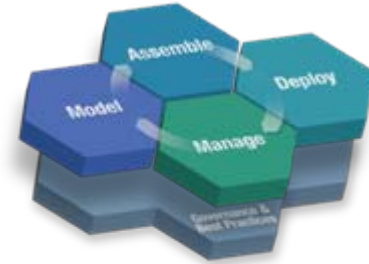
Your entry point into cloud computing,
and enablement of a dynamic infrastructure

Capabilities Include:

- **Infrastructure as a Service:**
Request Driven provisioning
- **Platform as a Service**
Application On-boarding through automation
of middleware deployments
- **Integrated Service management across
the lifecycle**



Infrastructure as a Service: Request Driven Provisioning



Customer Scenario: Rapid access to compute, storage & network resources

Test Labs for flexible access to resources for small function tests as well as large scale tests.

Problem:

- Rapid access to resources
- Ability to reserve resources in advance for specific projects
- Simplified deployment of OS and Middleware stacks including save/restore of environments
- Automated configuration of systems and test tools
- Deployment of management relevant to test environments (e.g. monitoring)



How can I get 50 servers next month for a performance/scale test ?

How do I manage resource requirements for multiple projects ?
How do I enable self-service for end users ? How do I create system configurations automatically ?



Platform as a Service: Application On-boarding



Customer Scenario: Infrastructure Complexity

Traditional IT Center with DB2 Sysplex Data sharing as backend and WAS hosted Banking applications on p/AIX. Efficient, reliable and structured operation management

Problem:

- Deployment of WAS/DB2 Landscapes too **error-prone**, too slow and too expensive
- Daily operation **inefficient** and too much reactive
- **High Availability** too complicated (best fit for my specific needs)
- The **Management of the 'Management Solution'** itself is complicated



What are the WAS/ND configuration settings in my environment I need to focus?

Which of the incidents are important for the business, what is the impact and how can I resolve them quickly?

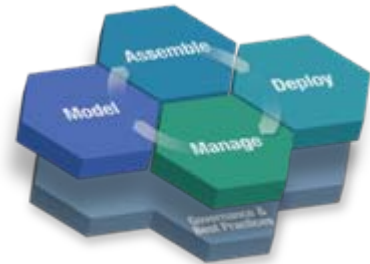


How can I efficiently and reliable operate cross platforms, cross departments and automate according best practices ?

Integrated Basic Service Management for cloud computing

Customer Scenario: Cost and Efficiencies

Need to deploy a critical reporting application ensuring business continuity and compliance to service SLA



Problem:

- Complex, unreliable and **expensive deployment and configuration** of the IT, scheduling and application infrastructure
- **Slow upgrade** of infrastructure capacity to meet new applications workloads and services needs
- Challenges in assuring the **business SLA, 24x7 business continuity**, security and compliance requirements
- Challenges in **tracking impact** of IT changes on workload execution
- Rising **energy demand** and costs



IT
Infrastructure
Administrator

How can I spend less time in setting up and maintaining the scheduling environment ?

What are the best practices to apply in managing the workload SLA?



IT Analyst

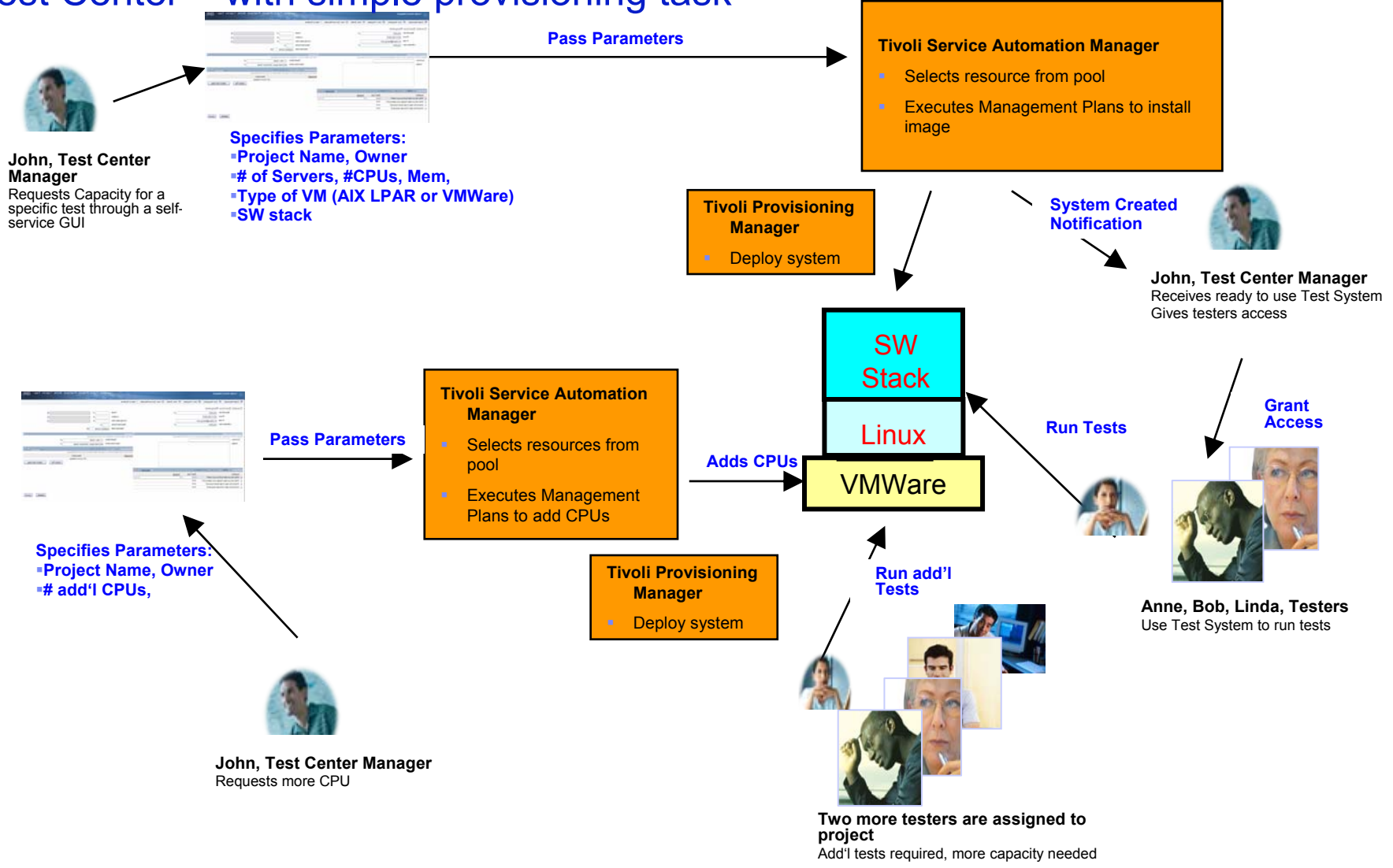
How can we ensure the reliability and SLA of business services as the workload and complexity increase.



CIO

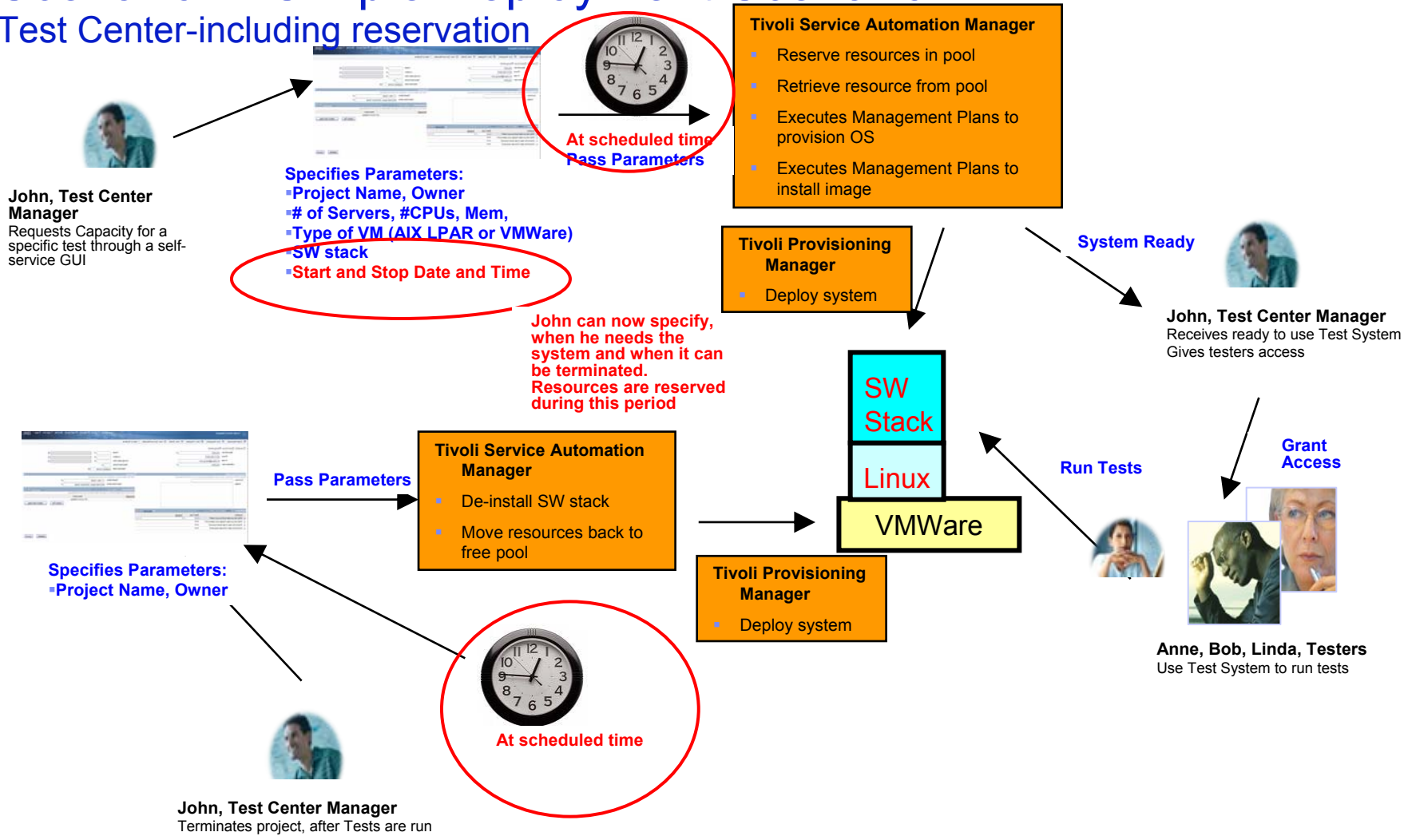
We need to optimize resource utilization and power consumption to reduce cost

Scenario 1: Simple Deployment Scenario: Test Center— with simple provisioning task



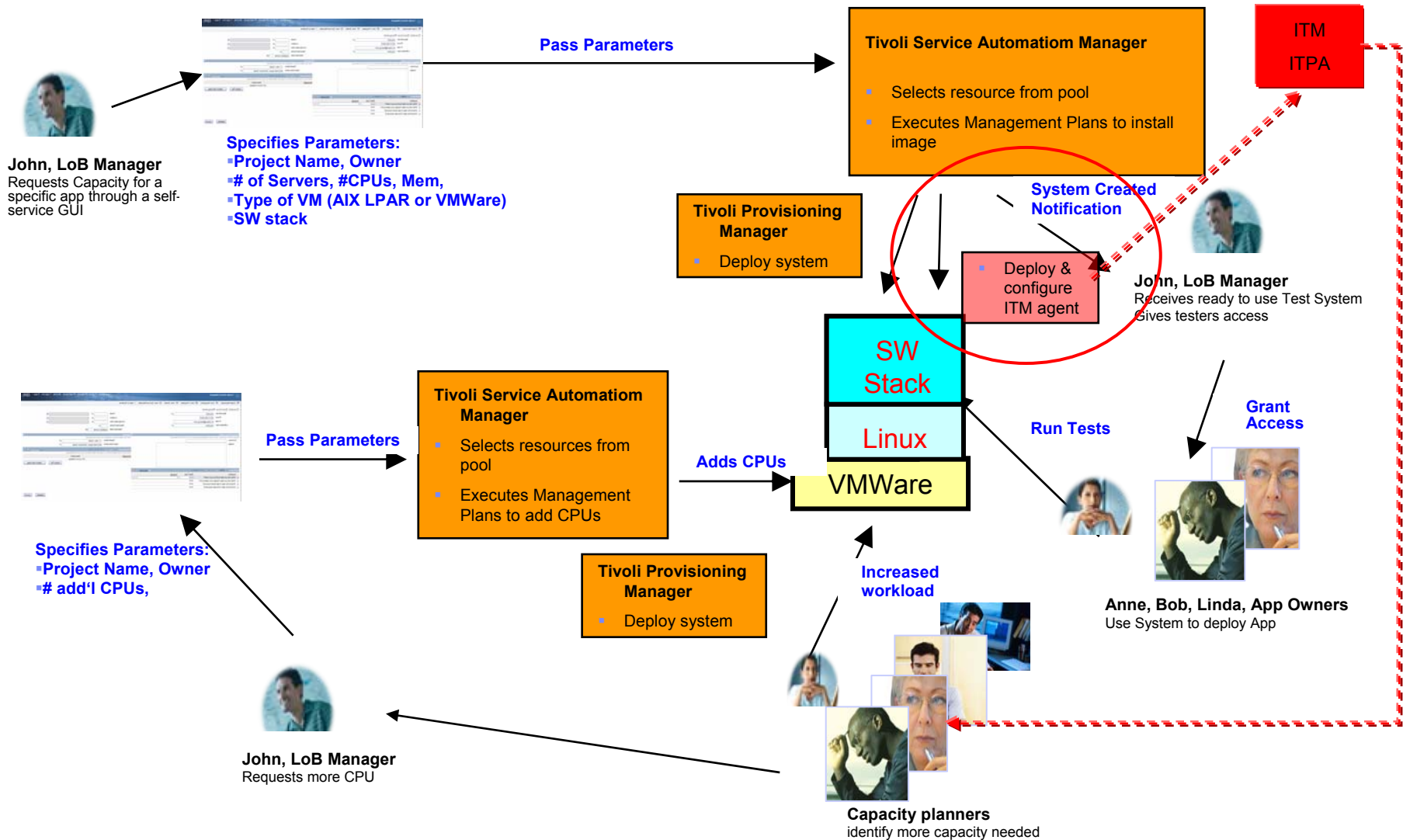
Scenario 2: Simple Deployment Scenario

Test Center-including reservation

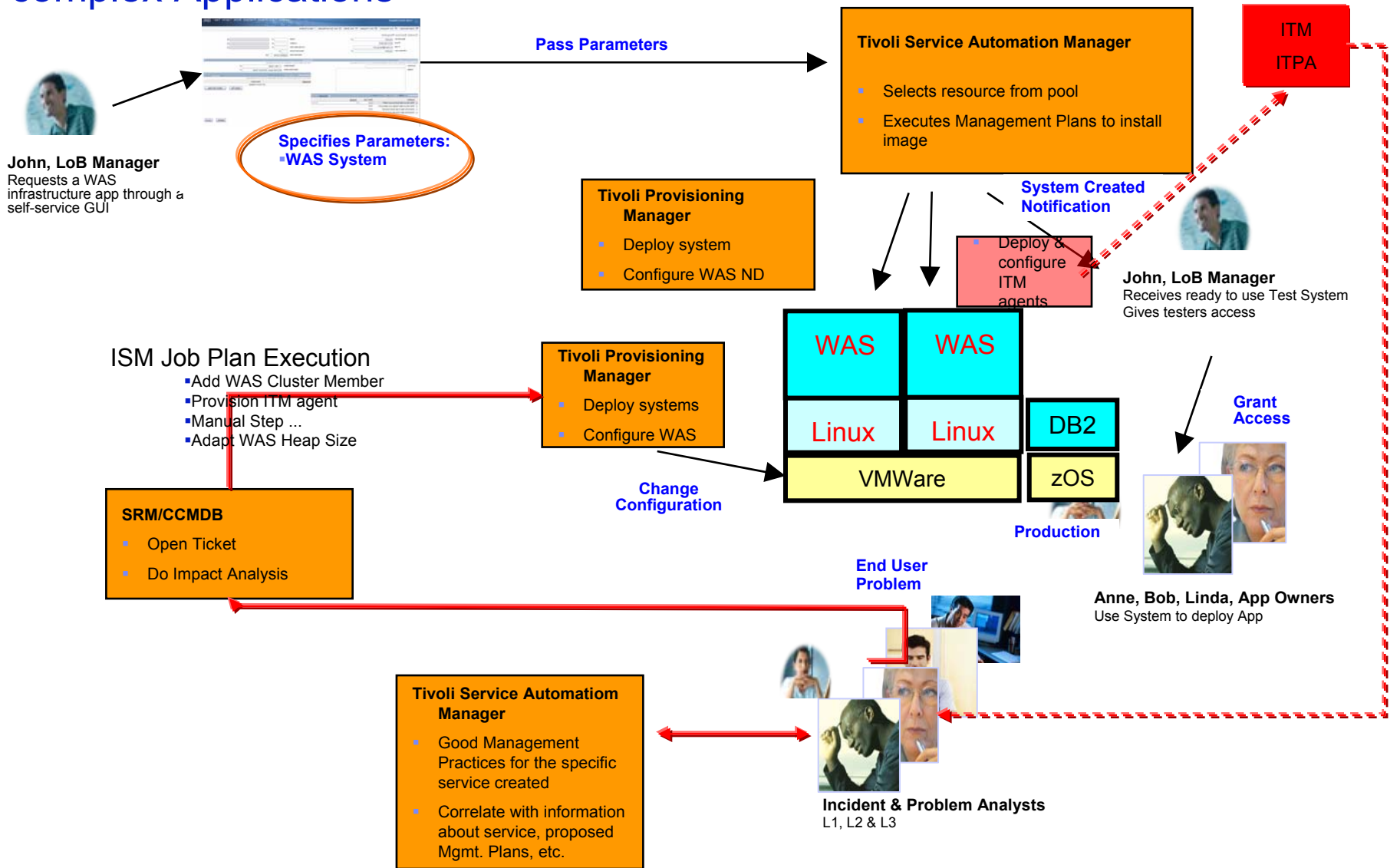


Note: Can also include approval steps and simple management scenarios like add CPU

Scenario 3: Deployment Scenario with Manageability



Scenario 4: Deployment Scenario with Extended Manageability and complex Applications



Service Automation Management

- **Automated Management of IT Services across their entire Lifecycle**
- **Add good practices for management**
- **Add management plans to optimize deployment and operation**

The holistic view
of a service...



...is more than the sum of
its individual parts

