Assessing IT for Cloud Readiness

Frank Heard

Executive IT Architect & Consultant

IBM Software

PCTY2010

Pulse Comes to You

Optimising the World's Infrastructure

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The IT infrastructure poses some serious challenges today, even with multiple server virtualisation and optimisation programmes we have seen, many IT environments are not optimised for business needs or able to provide delivery options for the business

In distributed environments, up to 85% of computing capacity sits idle

On average,
70% of the IT budget is spent
on maintenance

Many legacy systems are brittle, inflexible
and obsolete

Meanwhile the energy required to power and cool these systems is wasted, along with valuable data center floor space

Operational budgets are growing, causing development budgets to shrink and making it difficult to build new capabilities, services and applications

Not only are they unable to keep up with rapidly escalating business demands and regulatory requirements, they are driving operational cost and complexity to unsustainable levels
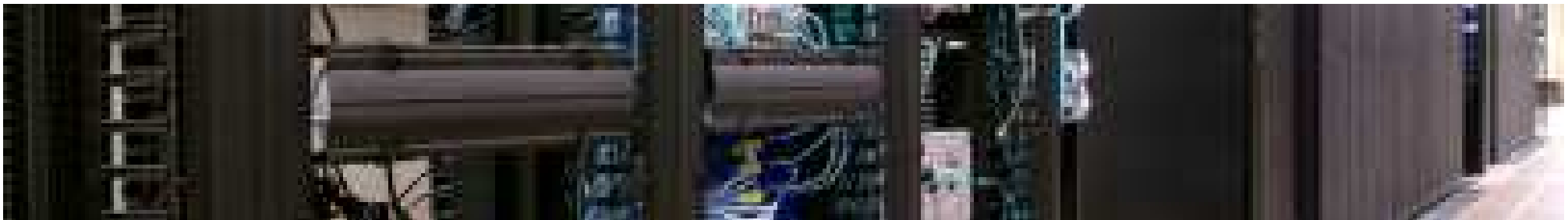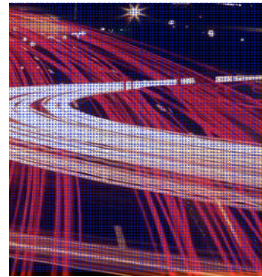
The IBM approach and solution for developing a smarter way of managing the IT environment is to define a Dynamic Infrastructure.

NEW INTELLIGENCE

To manage the mountain of information generated daily by increasingly connected systems, devices and people, while extracting richer insights and making faster, better decisions

DYNAMIC INFRASTRUCTURE

To provide the operational efficiency to drive down costs and the flexibility to assimilate change and drive competitive advantage

SMART WORK

To improve the agility of enterprise business processes and the organization's ability to benefit from and enhance the expertise and creativity of its people

GREEN & BEYOND

To support initiatives in response to escalating energy, environment and sustainability concerns, and stakeholder requirements for social responsibility

A Dynamic Infrastructure provides the efficiencies in IT but importantly, it also provides a platform for delivery options, well managed traditional IT, Cloud and beyond, IT is not just in the data centre.

PROVIDES DELIVERY OPTIONS

New models are emerging for the enterprise, Self-Services, economies of scale and flexible sourcing options are available allowing for the best delivery approach including Hybrid solutions.

OPTIMISED FOR BUSINESS NEED

A workload optimised approach provides orders of magnitude, better performance, scale and efficiency

Dynamic Infrastructure

INTEGRATED MANAGEMENT

Visibility of Business Services, *Control* - .Manage Risk and Compliance , *Automation* – Build agility into operations

To meet the demands of the business today and to build a Dynamic Infrastructure, the traditional approach to running an IT environment needs to be challenged. New approaches to business and IT innovation will help remove the boundaries that contribute to many operational and cost issues.

IMPROVE SERVICE

Not only ensuring high availability and quality of existing services, but also meeting expectations for new services: real-time, innovative and automated
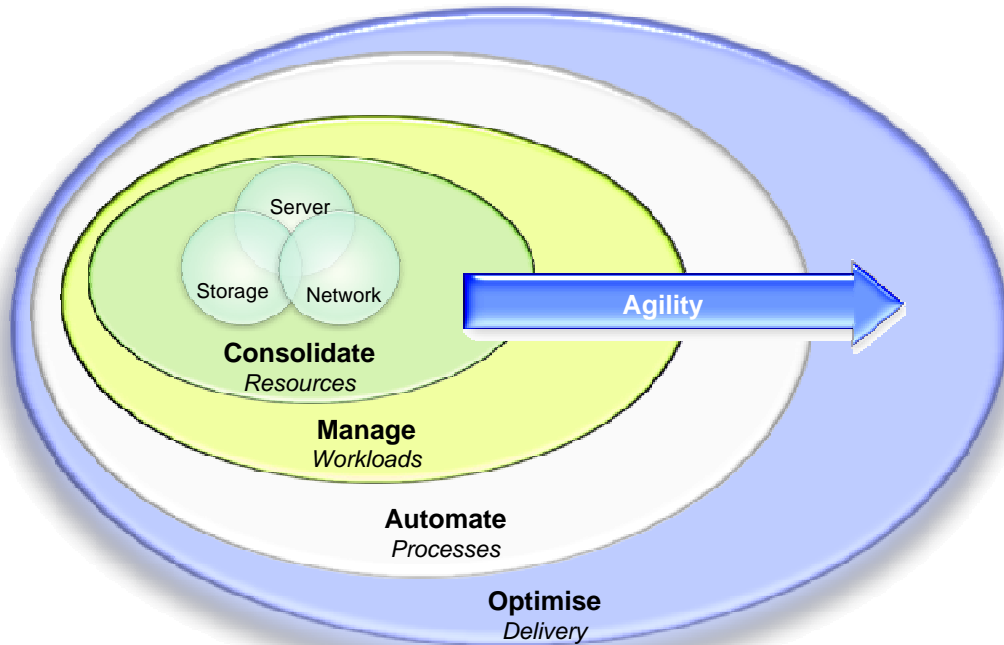
REDUCE COST

Not just containing operational cost and complexity, but achieving breakthrough productivity gains through automation, virtualisation, optimisation, energy stewardship, and flexible sourcing

Dynamic Infrastructure

MANAGE RISK

Not only addressing current security, resiliency, and compliance challenges, but recognising new risks posed by an increasingly connected and collaborative world for what they are—business opportunities

The transformation to a Dynamic Infrastructure begins with understanding where the journey starts, but you also have to define the target end point. We can help do this using the Dynamic Infrastructure Innovation Workshop Methodology.
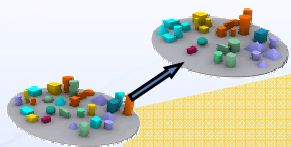
Server

Storage   Network

Consolidate
Resources

Manage
Workloads

Automate
Processes

Optimise
Delivery

Agility

➢ **PROVIDES DELIVERY OPTIONS**

➢ **OPTIMISED FOR BUSINESS NEED**

➢ **INTEGRATED MANAGEMENT**

Cloud Enabled

Dynamic Infrastructure

Virtualisation

Image Library

Image
Image
Image
App
OS

Physical Consolidation

➢ Capture and catalogue virtual images used in the data centre.
➢ Standardise virtual image building blocks.
➢ Customise virtual environment runtime requirements.
➢ Simplified deployment with virtual appliances.

➢ Pool standardised virtualised building blocks.
➢ Many managed as one.
➢ Automatic placement for new workloads.
➢ Aggregated monitors and event management.
➢ Unified update management profiles for firmware.
➢ Durable, Plug-and-play capacity across HW generations.

➢ Workload centric management based on service level goals.
➢ Assure SLA achievement.
➢ Integrated virtualisation management with IT processes.
➢ Always available.
➢ Elastic scaling.
➢ Pay for use.
➢ Automated provisioning.

➢ Data Centre Consolidation
➢ Application Migration & Consolidation

Building a dynamic infrastructure involves many elements of Service Management and Optimisation, Service Management will provide the *Visibility, Control* and *Automation* of the environment.

IMPROVE SERVICE
REDUCE COST
MANAGE RISK

Service Management – Provide visibility, control and automation across all the business and IT assets to deliver higher value services.

Asset Management – Maximising the value of critical business and IT assets over their lifecycle with industry tailored asset management solutions.

Energy Efficiency – Address energy, environment, and sustainability challenges and opportunities across your infrastructure.

Virtualisation – Leadership virtualisation and consolidation solutions that reduce cost, improve asset utilisation, and speed provisioning of new services.
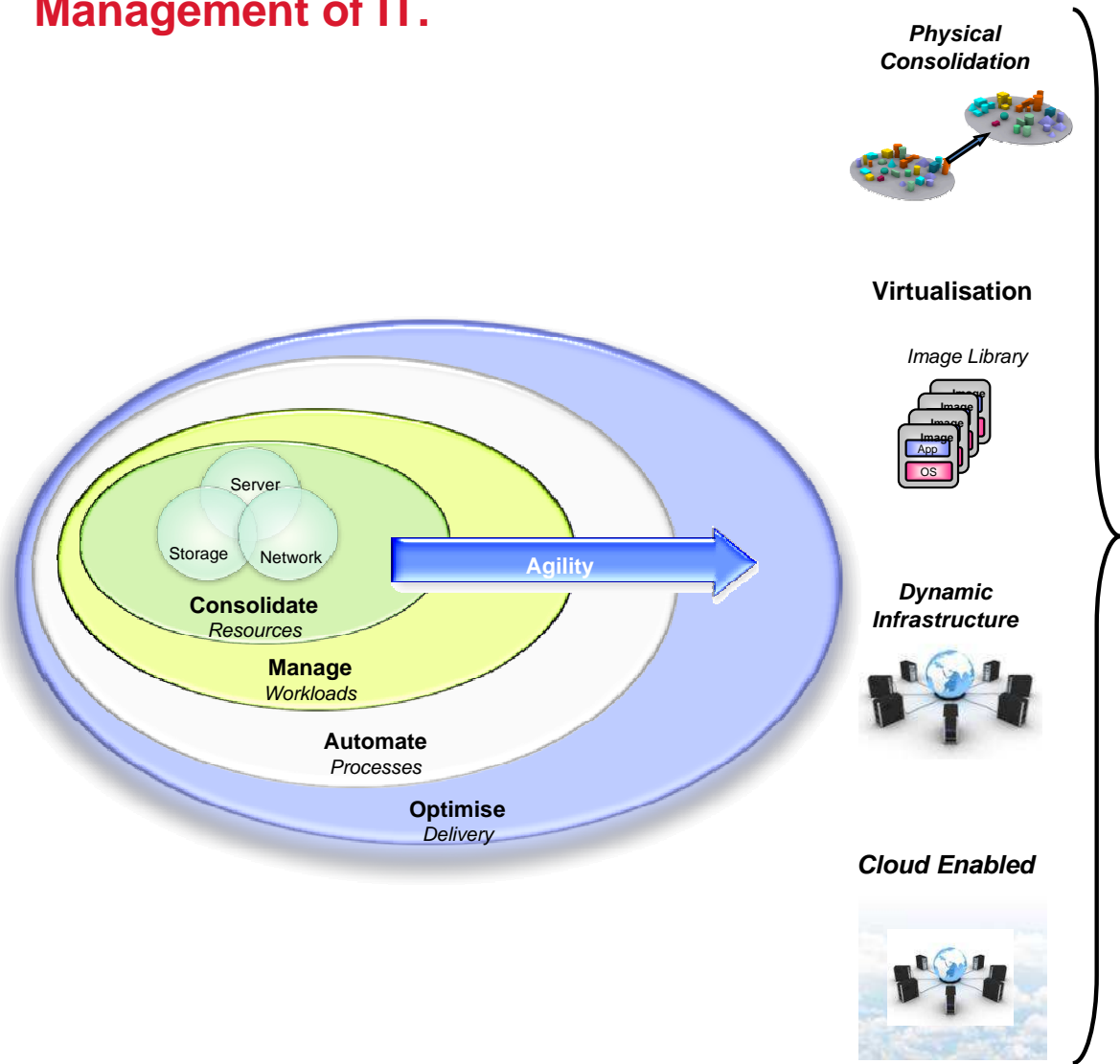
Business Resiliency – Maintaining continuous business operations while rapidly adapting and responding to risks and opportunities.

Security – End to end industry customised governance, risk management and compliance solutions.

Information Infrastructure – Helping businesses achieve information compliance, availability, retention, and security objectives.
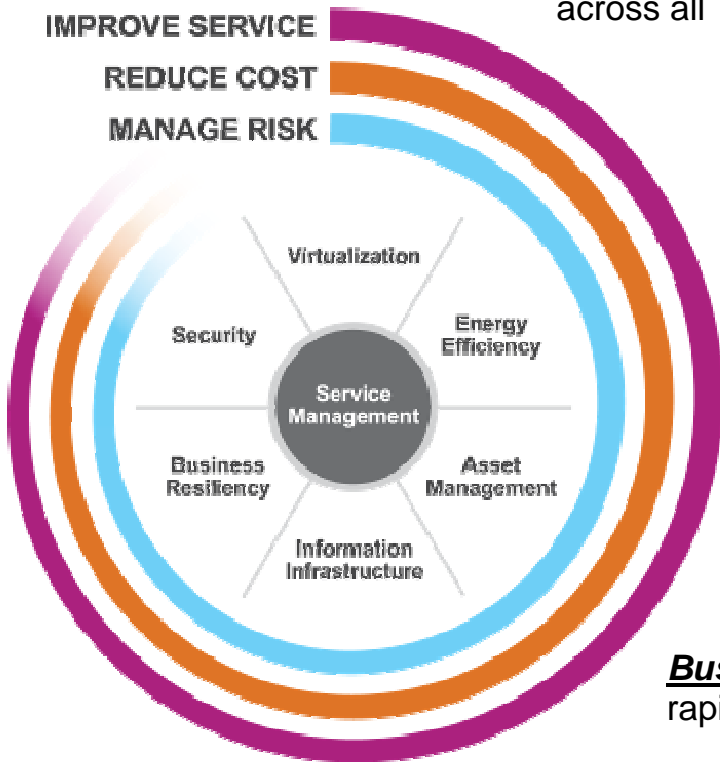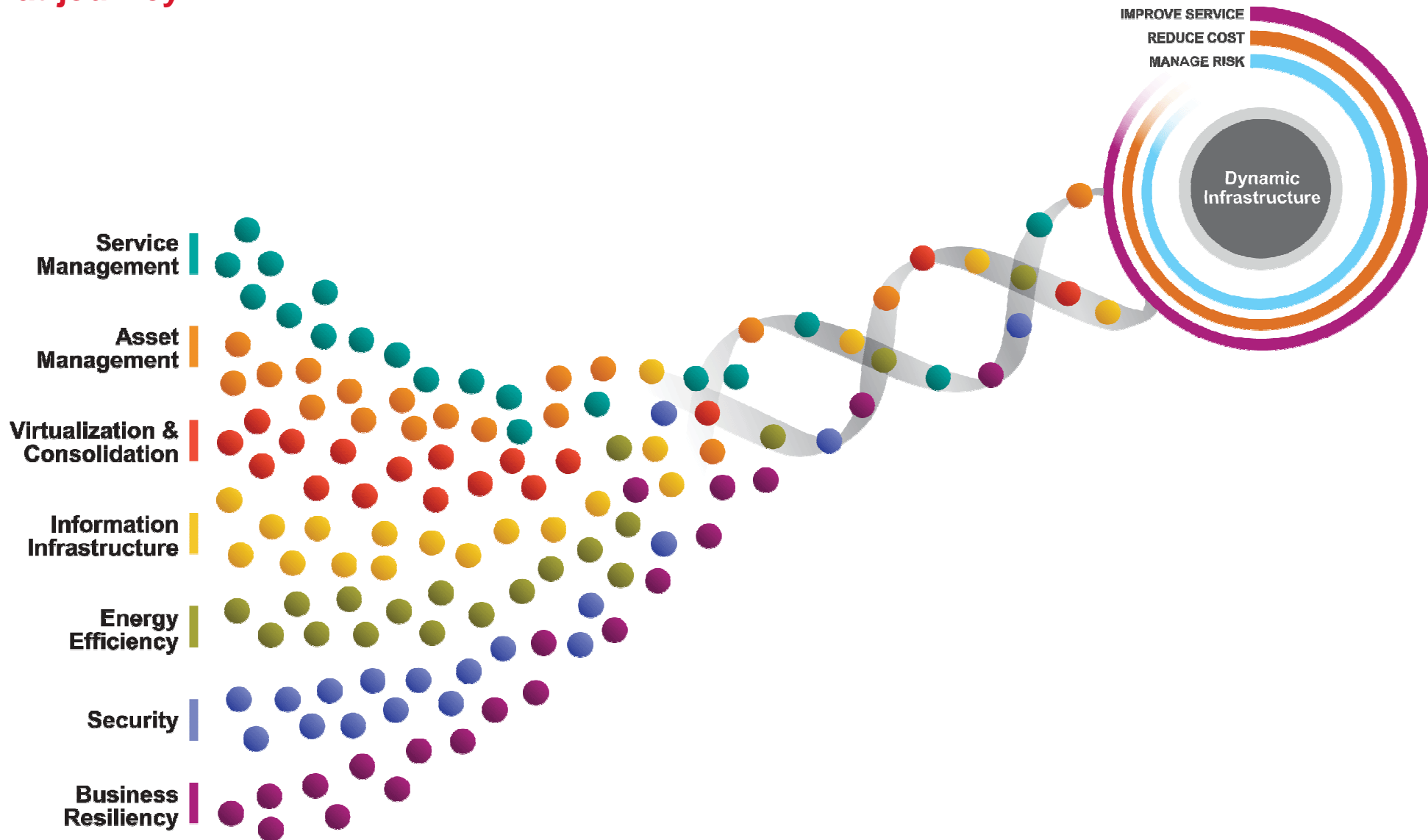
Transformation projects for this journey are driven out of an initial workshop based upon a maturity assessment. Our approach is to primarily assess seven interrelated domains common to any IT environment and the focus is split between the Technology and the Management of IT.

Physical Consolidation

Virtualisation

Image Library

Dynamic Infrastructure

Cloud Enabled

Server

Storage **Network**

Agility

Consolidate
Resources

Manage
Workloads

Automate
Processes

Optimise
Delivery

Domain	Characteristic
Architecture & Governance	Enterprise Architecture
	IT Governance
Finance	Financial Management
	Asset Management
Process	Service Support
	Solutions Deployment
	Service Delivery
	IT Service Continuity Management
	Service Automation
	Security & Compliance
Environment	Site and Facilities
	Data Center Energy Efficiency
Network	IT Network Resources
Storage	IT Storage Resources
	ILM
Compute	IT Host Resources
	Unix Servers
	X86-based Servers
	Midrange Servers

In summary, building a Dynamic Infrastructure is a journey and the interrelated initiatives we define as outputs from our workshop will provide the foundation for that journey.

IMPROVE SERVICE
REDUCE COST
MANAGE RISK

Dynamic Infrastructure

Service Management

Asset Management

Virtualization & Consolidation

Information Infrastructure

Energy Efficiency

Security

Business Resiliency

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Our approach and starting point is to look at building the Dynamic Infrastructure and Cloud Computing environments and resolve the issues around the cost and management of the current environment.

Value Proposition

- Facilitates 'Big Picture' thinking
- Facilitates long-term planning for the infrastructure transformation
- Links IT transformation to business initiatives, IT initiatives and projects.

The outcome: A roadmap to align the strategy with the IT programme goals and objectives

A roadmap that helps you understand where you are and where you need to go and what you need to do to get there.

An initial transformation blueprint tailored to you supported by industry best practices

The objective of the workshop is to create a prioritised plan that will take you on the journey from your current state to a Cloud Computing / Dynamic Infrastructure environment.

What it is:
- A technique to assess IT capabilities against a set of characteristics
- Identify specific IT capabilities to be adopted
- Provide roadmaps to achieve selected IT capabilities based upon industry best practices
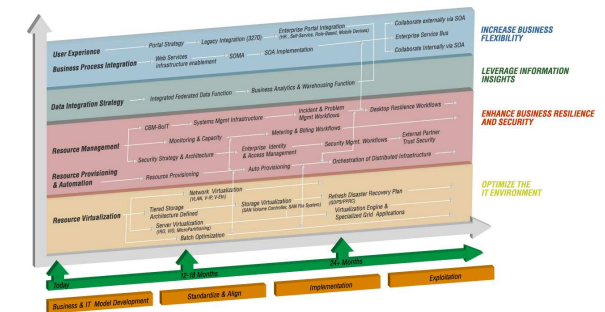

What it entails:
- A one or half day exploratory on-site workshop
- Examination of current IT capabilities (within the workshop scope) relative to a desired state
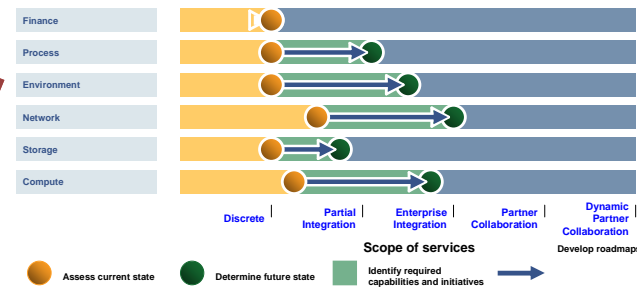
What is produced:
- Assessment of current IT environment
- Observations and recommendations
- Customised IT roadmaps
- Candidate initiatives/projects

The outputs from the workshop can help customers develop an Architectural Model for a Dynamic Infrastructure / Cloud environments

SECURITY

RESILIENCE

SERVICE REQUESTORS

- END USERS
- DEVELOPERS
- SERVICE CREATORS
- OPERATORS
- CORE ENTERPRISE ADMINISTRATION

SERVICE MANAGEMENT

APPLICATION ARCHITECTURE

INFORMATION INFRASTRUCTURE

VIRTUAL IT INFRASTRUCTURE

- SERVERS
- STORAGE
- NETWORK

PHYSICAL IT INFRASTRUCTURE

- SERVERS
- STORAGE
- NETWORK
- FACILITIES

BUSINESS INFRASTRUCTURE
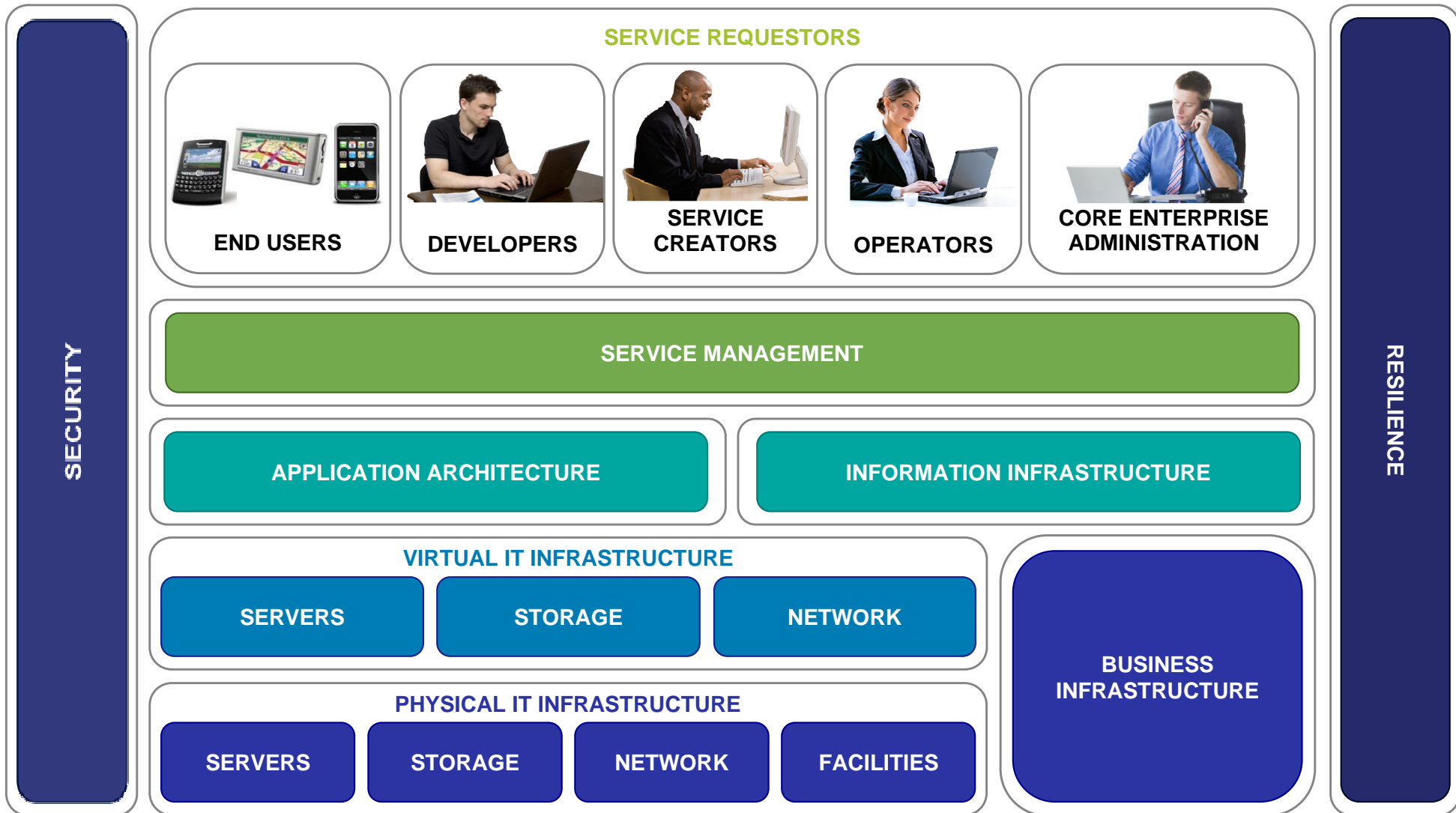
Each Domain, Sub-Domain and Characteristic Set is defined with the tool where we plot 'where you are today' and 'where you need to be in x years'

Domain	Characteristic
Architecture & Governance	Enterprise Architecture
	IT Governance
Finance	Financial Management
	Asset Management
Process	Service Support
	Solutions Deployment
	Service Delivery
	IT Service Continuity Management
	Service Automation
	Security & Compliance
Environment	Site and Facilities
	Data Center Energy Efficiency
Network	IT Network Resources
Storage	IT Storage Resources
	ILM
Compute	IT Host Resources
	Unix Servers
	X86-based Servers
	Midrange Servers

Mapped against Business Initiatives, IT Initiatives and IT Projects

In the Dynamic Infrastructure environment, we explore the specific aspects of the current IT environment in detail and the customer chooses the end state target maturity.

- ❿ **Compute**
  - ❿ IT Host Resources
    - Mainframe Servers
  - ❿ IT Distributed Resources
    - UNIX Servers
    - x86-based Servers
    - Midrange Servers
- ❿ **Storage**
  - ❿ IT Storage Resources
    - Storage Area Networks (SANs)
    - Network-Attached Storage (NAS)
    - Direct-attached Storage
    - Tape Storage
  - ❿ Information Lifecycle Management
    - ILM for Storage Optimisation
    - ILM for Compliance
- ❿ **Network**
  - ❿ IT Network Resources
    - Local Area Network (LAN)
    - Wide Area Network (WAN)
    - Wireless Network (e.g. WiFi)
    - Network Security Zones
    - Remote Access Services (RAS)
- ❿ **Environment**
  - ❿ Site and Facilities
    - Site and Facility Strategy Implementation
    - Facility Resiliency
    - Facility Connectivity
    - Energy Management and Reporting
    - Facility Physical Security
  - ❿ Data Centre Energy Efficiency
    - ❿ Energy Management & Reporting
    - ❿ Facility Cooling

- ❿ **Process**
  - ❿ Service Support
    - Service Desk
    - Incident Management
    - Problem Management
    - Monitoring and Event Management
  - ❿ Solution Deployment
    - Configuration Management
    - Change Management
    - Release Management
  - ❿ Service Delivery
    - Service Level Management
    - Capacity Management
    - Availability Management
    - IT Service Continuity Management
  - ❿ Security and Compliance Management
    - Security and Risk Management
    - Access and Identity Management
    - Privacy and Protection Services
    - Audit and Compliance Infrastructure
  - ❿ Service Automation
    - Provisioning Automation
    - Workload Management and Orchestration
- ❿ **Finance**
  - ❿ Financial Management
    - Asset Management
    - Rating
    - Metering
    - Chargeback Process Infrastructure
- ❿ **Architecture & Governance**
  - ❿ Enterprise Architecture
    - Business Architecture Alignment
    - IS Architecture
    - Technology Architecture
    - Transition Planning
    - Enterprise Architecture Governance
  - IT Governance & Management Controls
    - Plan & Organise
    - Acquire & Implement
    - Deliver & Support
    - Monitor & Evaluate

For customers more advanced in their strategy for implementing a Cloud environment, we can also explore the specific aspects in accordance to the Cloud Adoption Model and Service Layer selected – IaaS as a Service.

- **Infrastructure Services**
  - IT Host Resources
  - IT Distributed Resources
  - IT Storage Resources
  - IT Network Resources
  - Site & Facilities
  - Data Centre Energy Efficiency
- **Common IT Services**
  - Service Support
    - Service Desk
    - Incident Management
    - Problem Management
    - Monitoring and Event Management
  - Solution Deployment
    - Configuration Management
    - Change Management
    - Release Management
  - Service Delivery
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    - Access and Identity Management
    - Privacy and Protection Services
    - Audit and Compliance Infrastructure
  - Service Automation
    - Provisioning Automation
    - Workload Management and Orchestration
  - Integrated Infrastructure Services
  - Collaboration Services
  - Subscriber Management Services
  - Offering Support Services

- **Application Services**
  - Enterprise Architecture
  - IT Governance & Management Controls
  - SOA Capabilities
  - Development Services
  - Solution Development
  - Application Portfolio
  - User Interaction Services
  - Business Process Management
  - Business Innovation Enablement
- **Business Process Cloud Services**
  - Contract
  - Business Process Management
  - Policy
  - Business Governance
  - Knowledge Management
  - Customer Care
  - Enterprise Architecture
- **Information Services**
  - Master Data Management
  - Information Integrity Services
  - Database & Implementation Access Services
  - Business Intelligence
  - Content Management
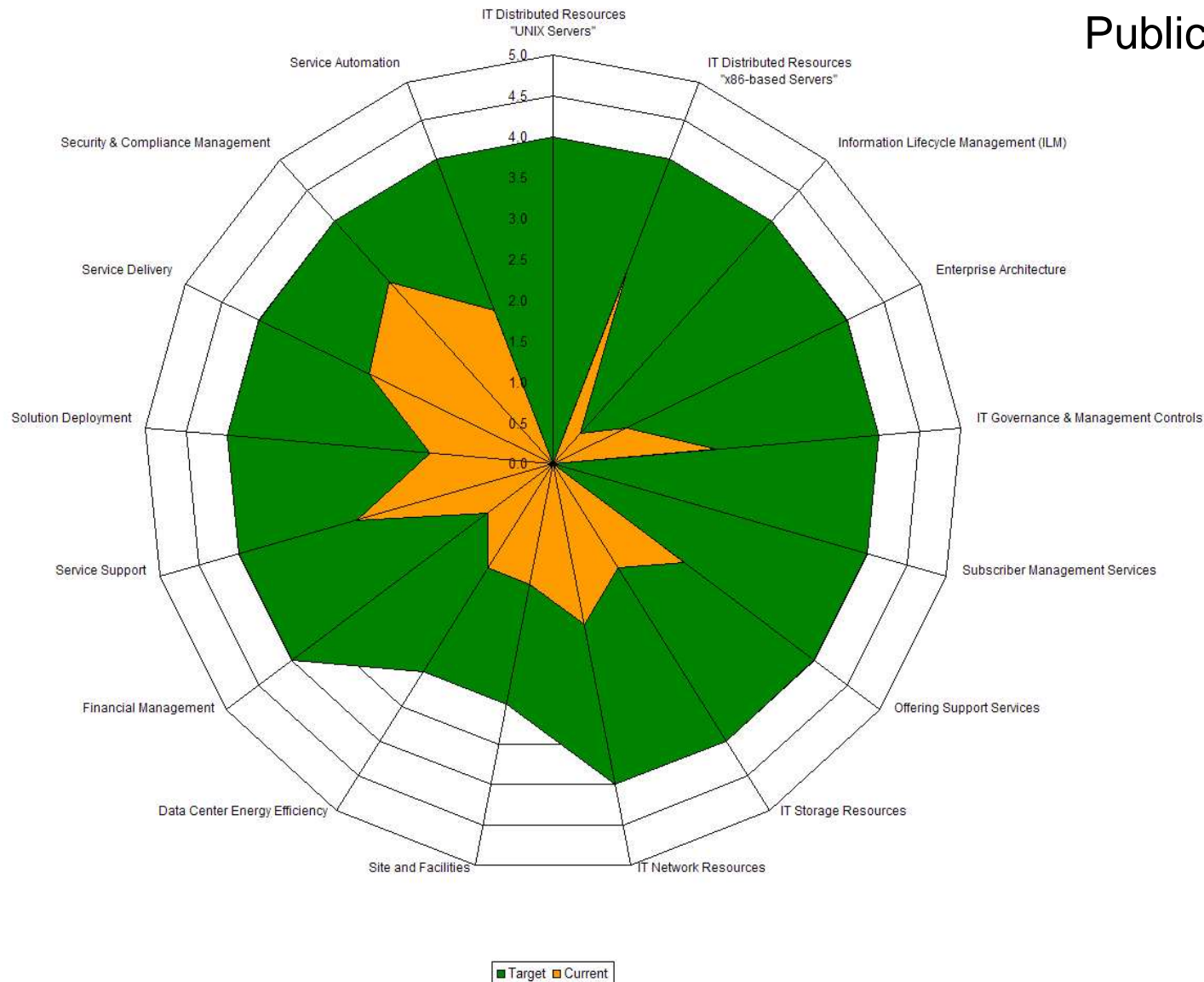 - Information Lifecycle Management

Customer Example - Summary Assessment
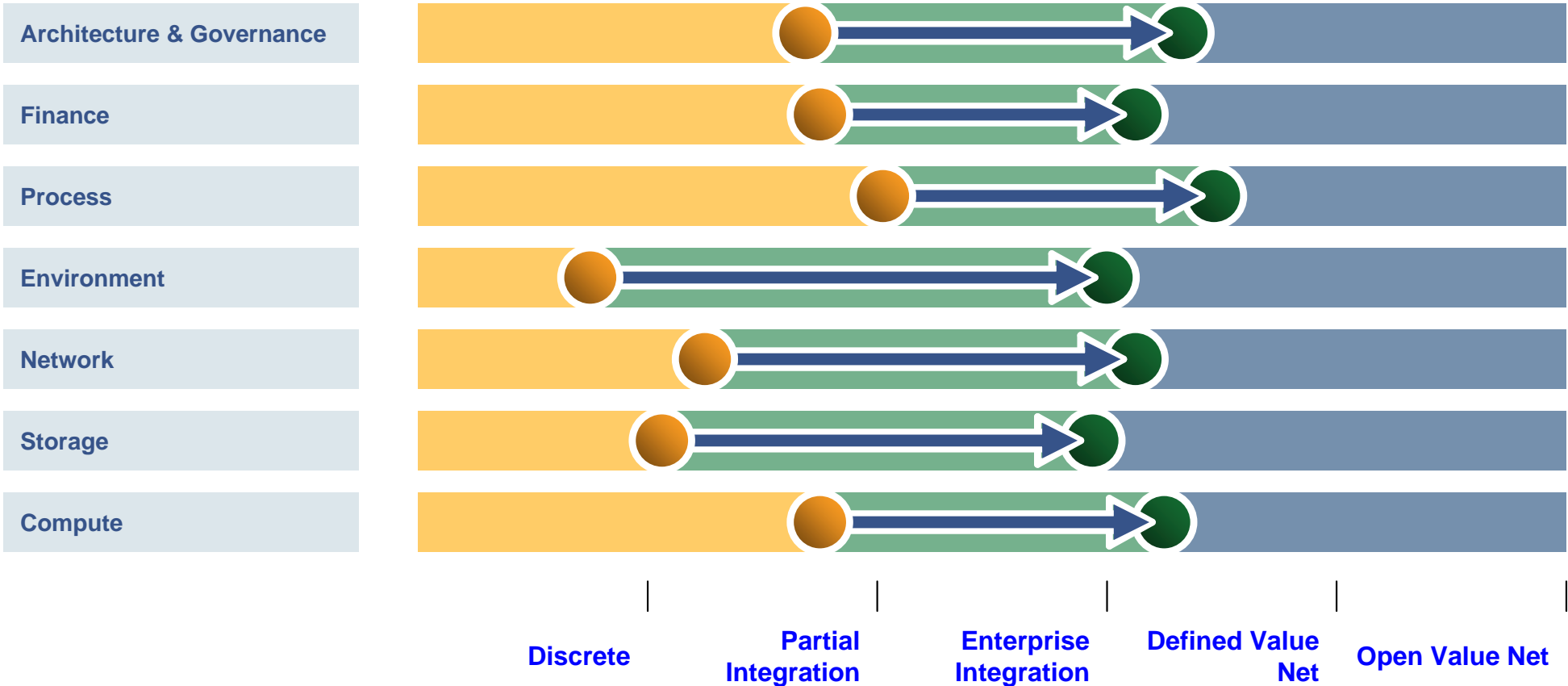
| | Assess current state | Determine future state | Develop roadmaps |

Legend: Assess current state (orange), Determine future state (green), Develop roadmaps (arrow)

Categories: Architecture & Governance, Finance, Process, Environment, Network, Storage, Compute

Scale: Discrete, Partial Integration, Enterprise Integration, Defined Value Net, Open Value Net

Another output from the assessment is a simple Spider Diagram that will show where you are today (Amber) and where you need to be for the selected Cloud Environment (Green)
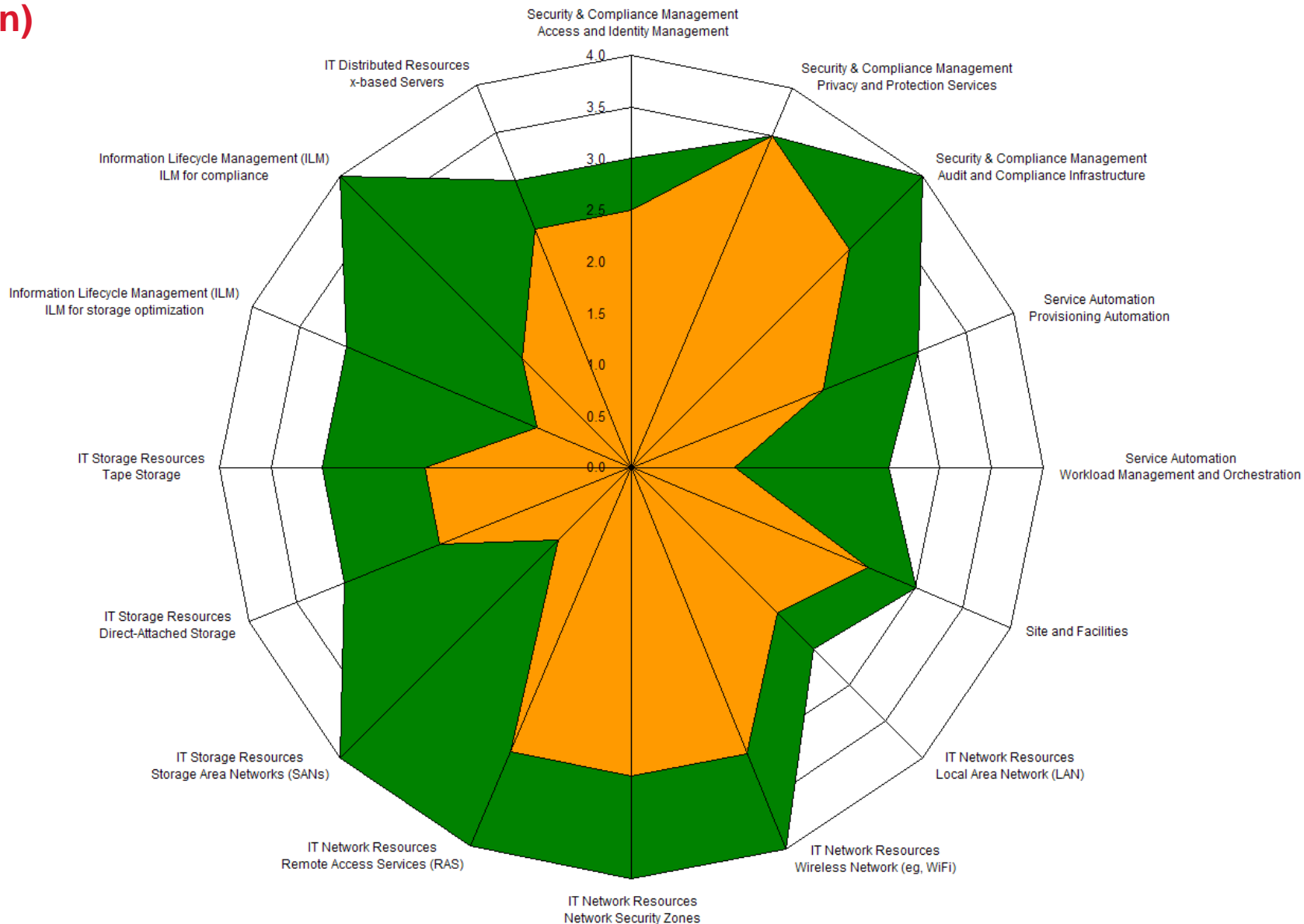
The same output format is provided for the Dynamic Infrastructure environment, however, the Cloud Adoption Model dictates the target state maturity for their IT.

Public - Exclusive

The information provided here reports the priority and Effort associated with each Sub-Domain assessment against the Business and IT Initiatives.

Priority: High

Low Effort:
- Threat Management (gap: 0.5) ▲
- Wide Area Network (WAN) (gap: 0.5) ●●■□○

Medium Effort:
- Energy Management and Reporting (gap: 3.0) ■●○
- Facility Connectivity (gap: 1.5) ▲
- Facility Resiliency (gap: 1.0) ▲

High Effort:
- Change Management (gap: 3.0) ●■
- Problem Management (gap: 2.5) ●○■
- Incident Management (gap: 2.0) ●○■
- Plan and Organize (gap: 1.5) ▲○
- Deliver and Support (gap: 1.0) ●■

Priority: Medium

Low Effort:
- Identity and Access Management (gap: 2.5) □
- Facility Cooling (gap: 1.5) ■

Medium Effort:
- Release Management (gap: 3.0) ●■
- Direct-Attached Storage (gap: 2.0) ●▲
- Information Systems (IS) Architecture (gap: 1.5) ▲●■○▲○
- Service Desk (gap: 1.5) ■
- Configuration Management (gap: 1.5) ●■
- Remote Access Services (RAS) (gap: 1.5) □●●▲□○
- Local Area Network (LAN) (gap: 1.0) ●
- x86-based Servers (gap: 1.0) ▲●□○
- Monitoring & Event Management (gap: 0.5) ■

High Effort:
- Business Architecture Alignment (gap: 2.5) ▲●□○
- Technology Architecture (gap: 1.5) ●■▲
- Wireless Network (e.g., WiFi) (gap: 1.5) □●▲□

Priority: Low

Low Effort:
- IT Service Continuity Management (gap: 2.0)
- Capacity Management (gap: 1.5) ■
- Availability Management (gap: 1.0)
- Encryption Services (gap: 0.5)
- Provisioning Automation (gap: 0.5) ○
- Workload Management and Orchestration (gap: 0.5) ■
- Storage Area Networks (SANs) (gap: 0.5) ▲●
- UNIX Servers (gap: 0.5)
- Security, Privacy, and Risk Management (gap: 0.0)
- Audit and Compliance Infrastructure (gap: 0.0)
- Security Zones (gap: 0.0)
- Tape Storage (gap: 0.0)

Medium Effort:
- Monitor and Evaluate (gap: 2.0) ■
- Service Level Management (gap: 1.5)
- Transition Planning (gap: 1.0)
- Facility Physical Security (gap: 1.0)

High Effort:
- Enterprise Architecture Governance (gap: 1.5)
- Rating (gap: 1.5) ●
- Information Lifecycle Management (ILM) (gap: 1.5)
- ILM for storage optimization (gap: 1.5) ●●
- ILM for compliance (gap: 1.5) ●
- Acquire and Implement (gap: 1.0)
- Asset Management (gap: 1.0) ■
- Metering (gap: 1.0) ●
- Chargeback Process Infrastructure (gap: 1.0) ●
- Site and Facility Strategy & Implementation (gap: 1.0)

Low — Medium — High Effort

The IBM Assessment and Roadmap Tool that we use helps analyse the data and generate the workshop outputs and deliverables

Workshop Report Template

Project Details

Project Roadmap

Analysis
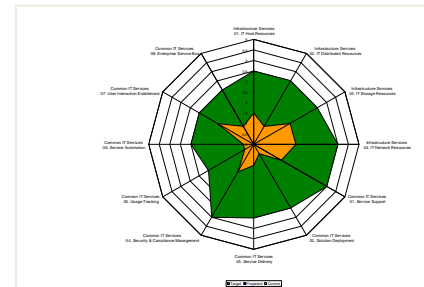
Understanding the maturity of your IT and the roadmap to your target state will allow you to build an environment that will deliver services to the business and meet those business needs and demands we have today and will have tomorrow.

Server

Storage   Network

Consolidate
Resources

Manage
Workloads

Automate
Processes

Optimise
Delivery

Agility

➢ **PROVIDES DELIVERY OPTIONS**

➢ **OPTIMISED FOR BUSINESS NEED**

➢ **INTEGRATED MANAGEMENT**

Cloud Enabled

Dynamic Infrastructure

Virtualisation

Image Library

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➢ Capture and catalog virtual images used in the data centre.

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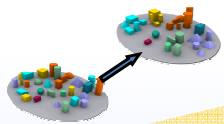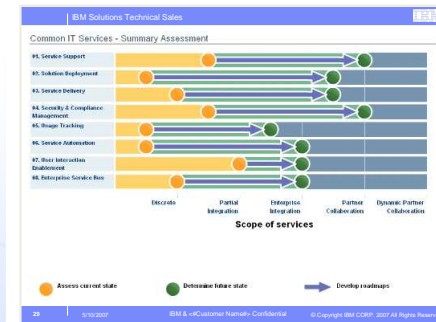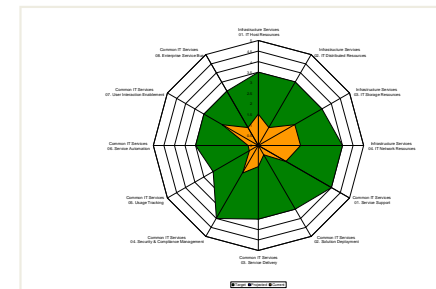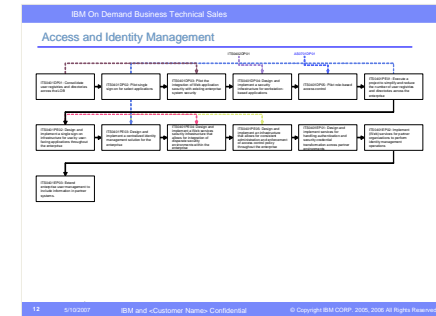➢ Durable, Plug-and-play capacity across HW generations.

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