Frank Heard
IBM Systems Consultant

IBM Systems Consulting Team

Introduction

Agenda

- *IBM Lab Services Consulting Team*
  - *Who we are*
  - *What we do*
  - *How we do it*
- *IBM Solution Teams*
  - *Solution Teams*
  - *X86 solutions in IBM*
- *Cloud*
  - *ITaaS Solutions & Hybrid Cloud .*
- *Cloud Transformation Strategy*
  - *IBM Systems Consulting Team Method.*

IBM Systems Lab Services - Systems Consulting Team.

Our Value

Who we are……

*The IBM Systems Consulting Team is a group of **experienced consultants** that uses a combination of proven expertise, tools, and methodologies to develop business-aligned IT strategies to guide clients in transforming their enterprise IT infrastructure.*

What we do……

*We offer a range of consulting capabilities that can be tailored to specific client requirements, enabling them to better **align their IT Infrastructure** with business objectives, support the emerging expectations of **Transformation Strategies** around Hybrid Cloud and/or Private Cloud, ITaaS , Analytics and Cognitive solutions*

How we do it……

*We utilise proven approaches that address all relevant aspects of a clients situation, **both business and technical**, supporting our recommendations with **clear value** propositions*

Today …….

Today we will cover the capabilities around Cloud Transformation Strategy And touch a little on IT Transformation Strategy.

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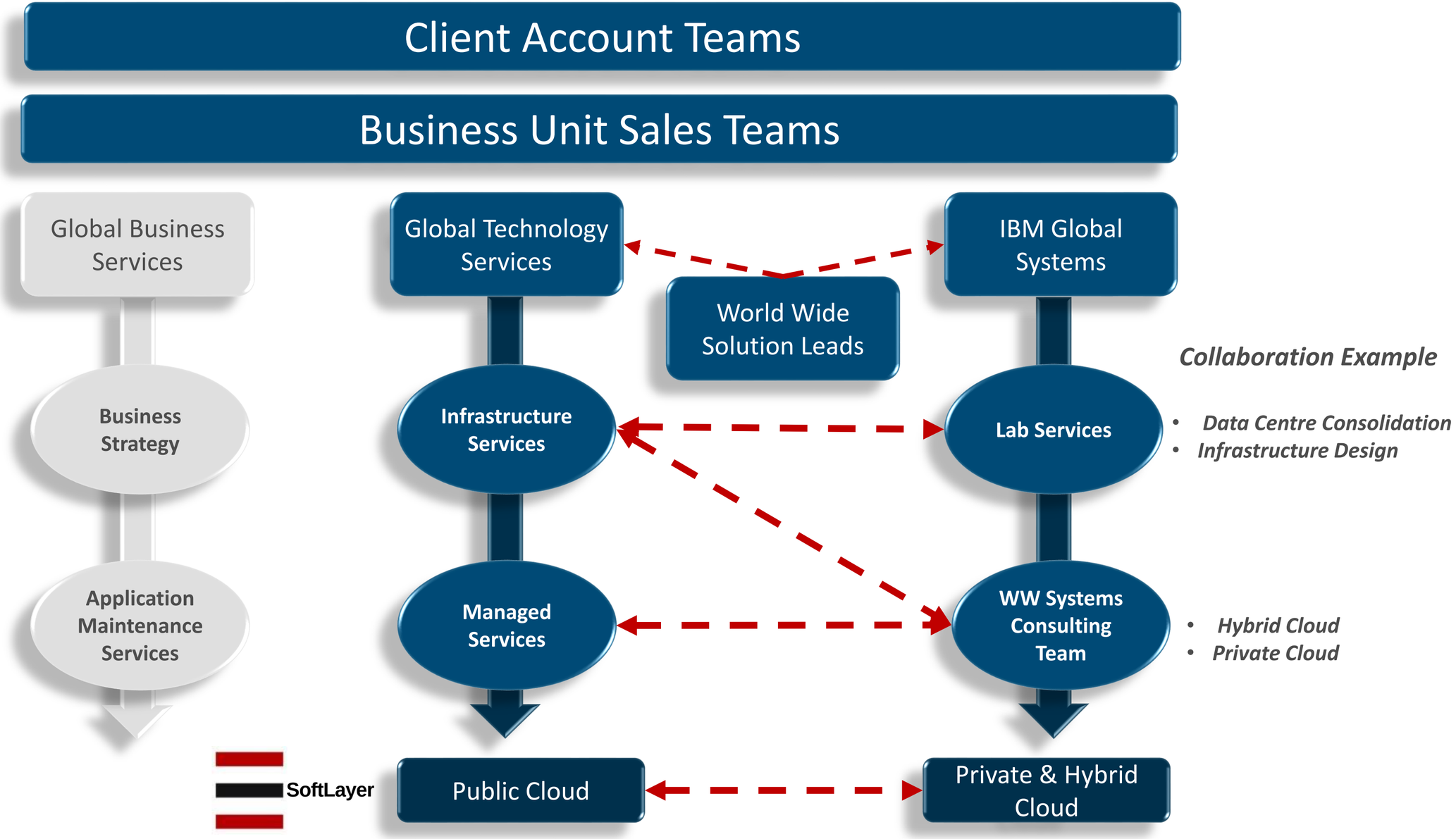
IBM Solution Teams

Solution Teams & x86 Solutions in IBM

IBM Solution Teams



As you are aware, some time ago IBM 'sold' their x86 business to Lenovo, of course we don't 'sell' that platform anymore, but we still design cloud solutions on the Intel architecture.

IBM and VMware have set out to tackle one of the industry's most pressing challenges: extending existing VMware workloads from on-premises environments to the cloud without incurring the cost and risk associated with retooling operations, re-architecting applications and re-designing security policies.

Today's introduction of VMware Cloud Foundation™ combines VMware's market-leading compute, storage and network virtualization solutions into an integrated platform. For the first time, organizations can now automatically provision pre-configured VMware Software Defined Data Center (SDDC) environments on IBM Cloud in hours versus weeks or months. The platform integrates VMware vSphere®, VMware Virtual SAN™, VMware NSX® and VMware SDDC Manager™, and gives customers broad choice in their infrastructure decisions.

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Cloud

ITaaS Solutions & Hybrid Cloud

Today, more then ever before, it is business and technology trends that are driving intense pressure for change, clients no longer look for one 'model' to deliver IT.

The insurance industry confronts a reality of slow growth and strong cost control

Changing Customer expectations

New Fintech entrants

Explosion of Data

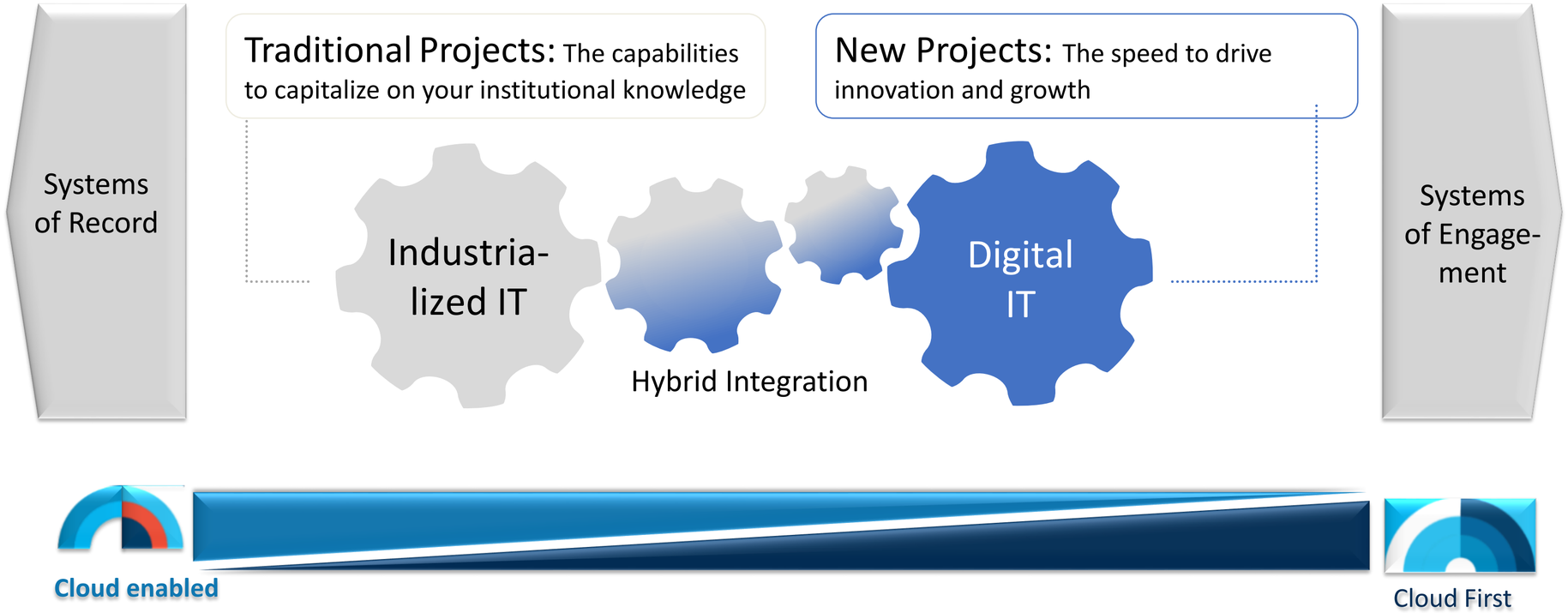
Regulation and sophisticated fraud

Internet of Things

Cloud. Agility and consumption models

The need is to reduce cost and free up capital to fund innovation and growth

The Hybrid IT model can be described as a co-existence of a two speed, integrating existing IT systems with new applications, triggered by the digital transformation



Optimization: Cost, Efficiency, Speed, ..

Innovation Agility, Speed to Market, ..

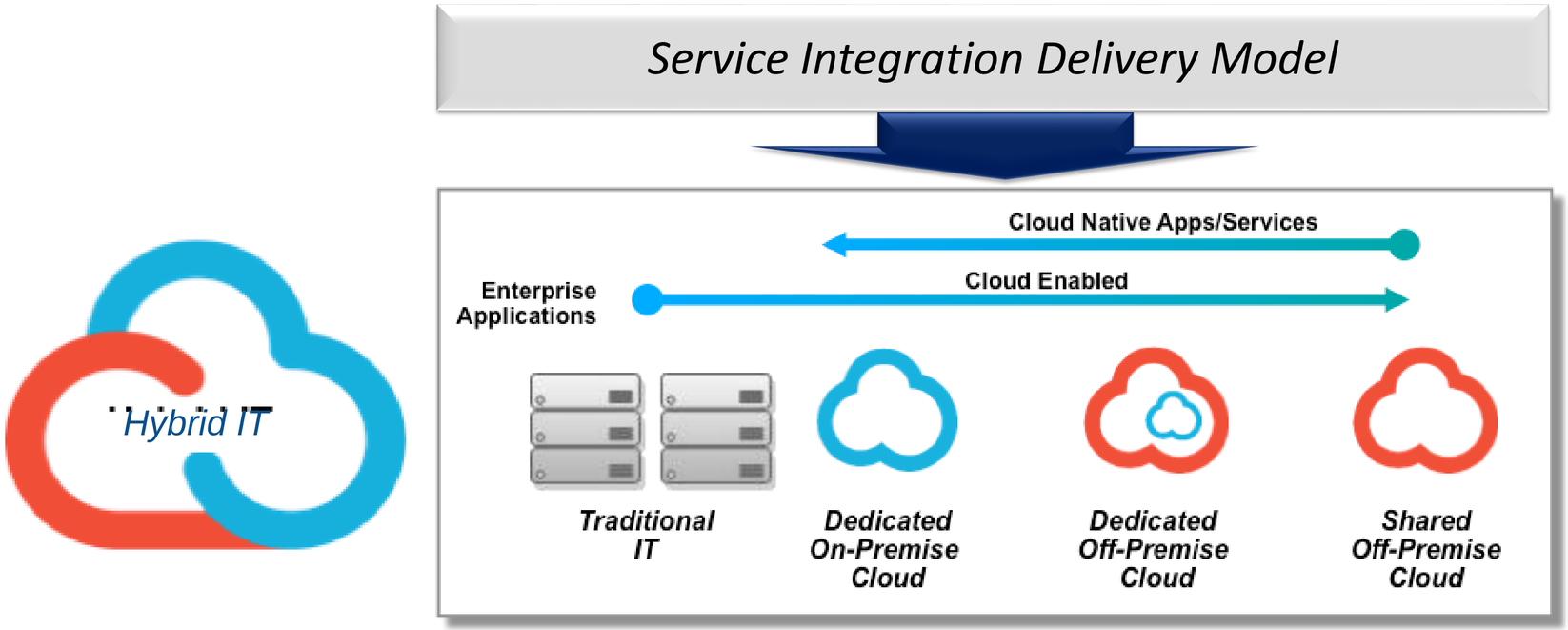
Cost Optimization Focus

- Fit for purpose tiered service levels and portfolios
- Continuous optimization by standardizing, simplifying and automating processes
- Cost optimization across all resources and assets

Speed & Innovation Focus

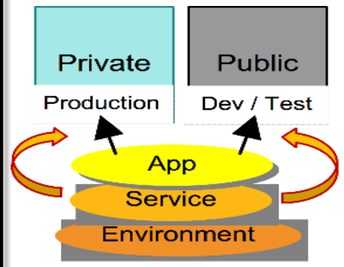
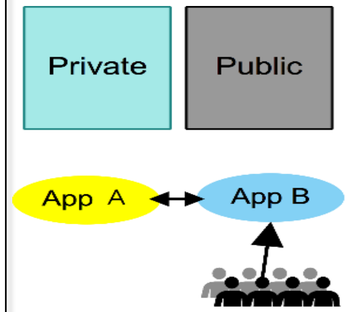
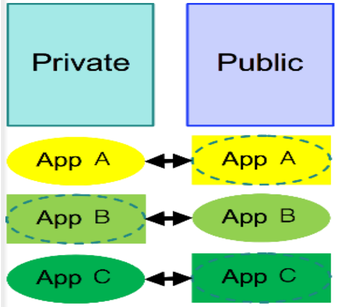
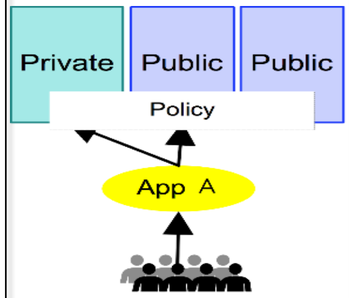
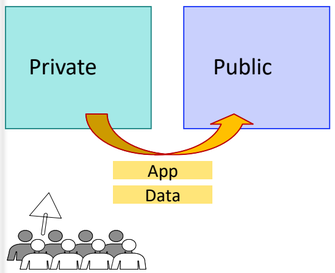
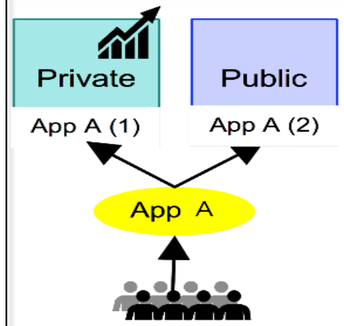
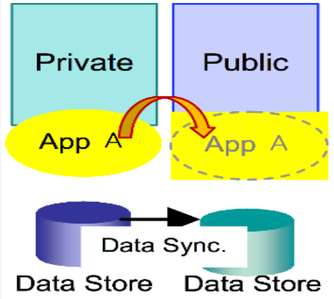
- DevOps capabilities to deliver business value
- Rapidly changing technologies and architecture cycles leveraging standard market services
- Variable cloud based consumption models

The reality of hybrid environments has introduced a number of key challenges, many of our customers have enthused the Public Cloud for certain services but are now moving to a different level and various solutions.



Shadow IT with LOBs leveraging the cloud and bypassing central IT
Lack of visibility and control across growing numbers of service providers
Integration of a multitude IaaS, PaaS, and SaaS cloud providers
Supporting and managing hybrid Infrastructures
Receiving services from more than one source

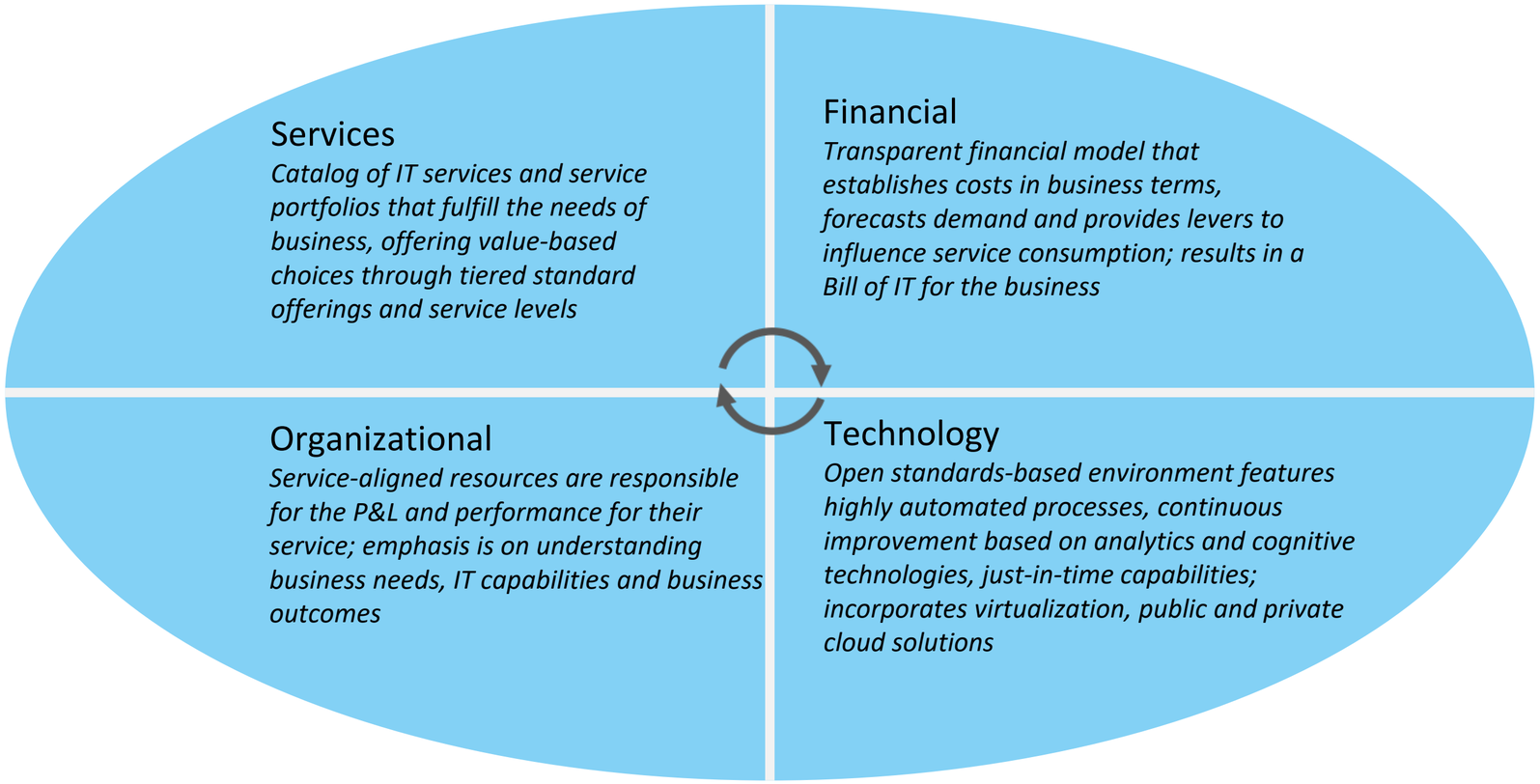
Time passes and we have a number of Use Cases that are used to drive transformation of enterprise IT

Next gen hybrid workloads			Hybrid cloud brokerage and management	Hybrid infrastructure scale out		
Independent workloads	SOE - SOR integration	Portability and optimization		Backup and archive	Capacity access	Disaster recovery
						
Choose private, public, or hybrid cloud based on workload requirements	Systems of Record on private and Systems of Engagement on public cloud	Application and data are portable and can go to and from public and private for improved optimization	Planned or policy-based management and sourcing across multiple environments (infrastructure, platform, and app)	Leverage off-premise resources for backup and archiving of on-premise resources	Opportunistic use of public cloud as additional resource for large jobs (for example, HPC, BigData, Batch)	Set up and make available a parallel environment off-premise

These enterprise IT scenarios can be useful for understanding how hybrid models might benefit an enterprise. They also offer insight into the potential adoption paths for enterprise IT.

Many of our clients have now a vision to transform their Enterprise IT to an 'as a Service' model

This new model can generate between 10% – 30% in steady state savings through cloud adoption, process automation, IT operations analytics with Watson Analytics, and cognitive computing.



IT as a Service definition: *A model that enables the CIO to serve as a broker of services to the business. The framework delivers value to the business by improving speed and agility while lowering costs, providing the business with the ability to consume tiered and standardized services in a financially transparent manner.*

Enterprise IT 'as a Service' model uses three important levers to deliver client value

Technical levers

- *Simplified and standardized platforms based on open standards*
- *Drive to architectural standards working with our clients*
- *Automated and virtualized provisioning of IT resources*
- *Standardised management processes and tools*
- *Cognitive computing, predictive analytics and dynamic automation for service management*

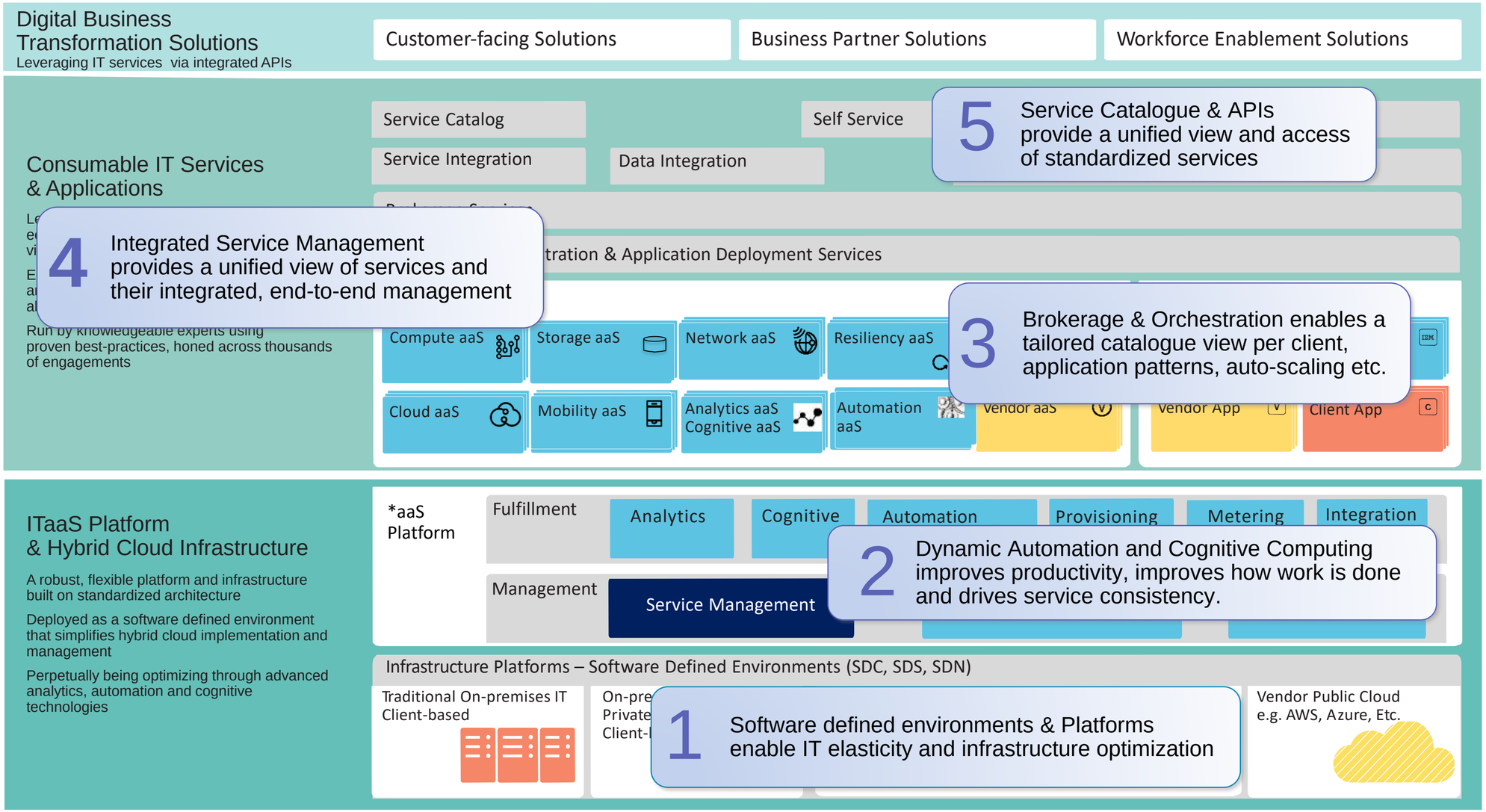
Operational levers

- Cultural shift of IT organisation from procure/run of IT to consumption of IT services
- Focus on managing portfolio of services aligned with business strategy that LOBs can consume
- Services could be differentiated based on tiers and scope
- LOBs can manage spend through consumption (chargeback) and service level choices
- Outcome-base KPI/KPOs that focus on business goals

Financial levers

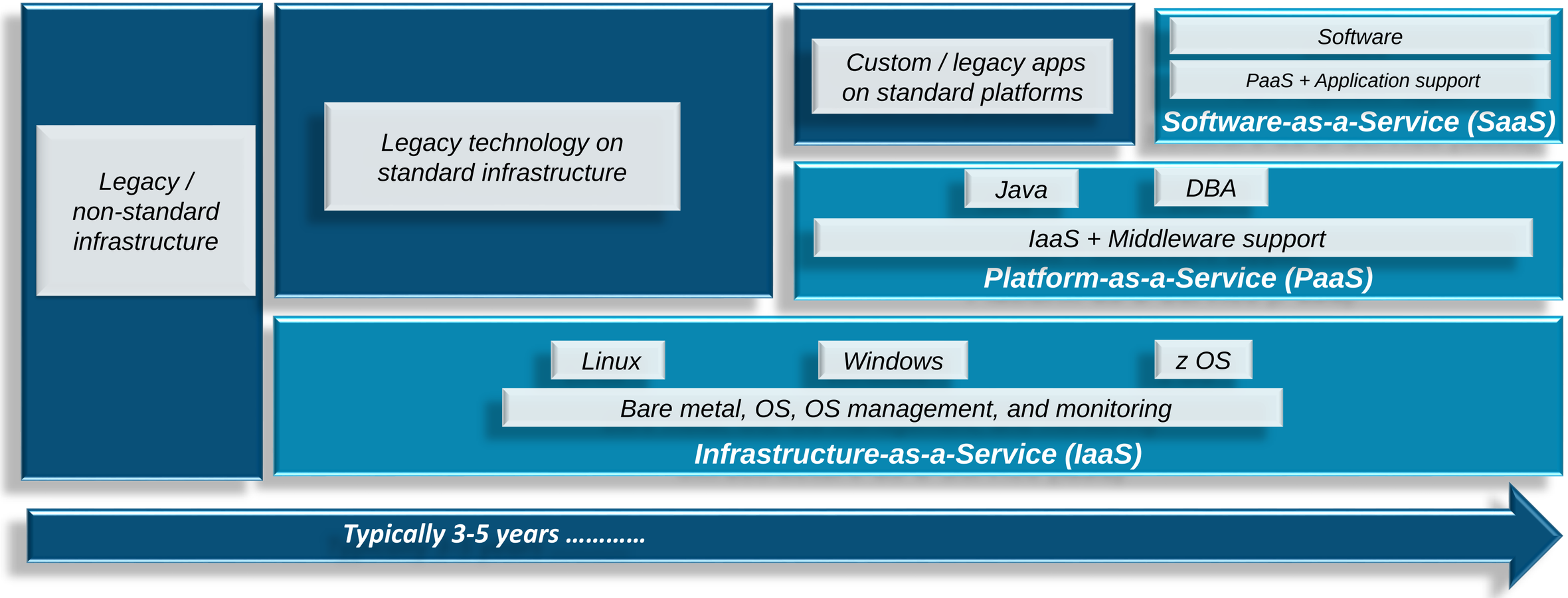
- Minimisation of capital expenses—unit pricing all-inclusive, investment made provider
- Variable consumption model with flexibility to significantly increase or decrease usage
- Resource usage charged based on actual consumption (with agreed to commitments)
- Lower prices for as-a-Service model incents business users to migrate to this platform

Enterprise IT as a Service - A modular, open and integrated approach for designing, building and running your digital business solutions with flexibility and control.

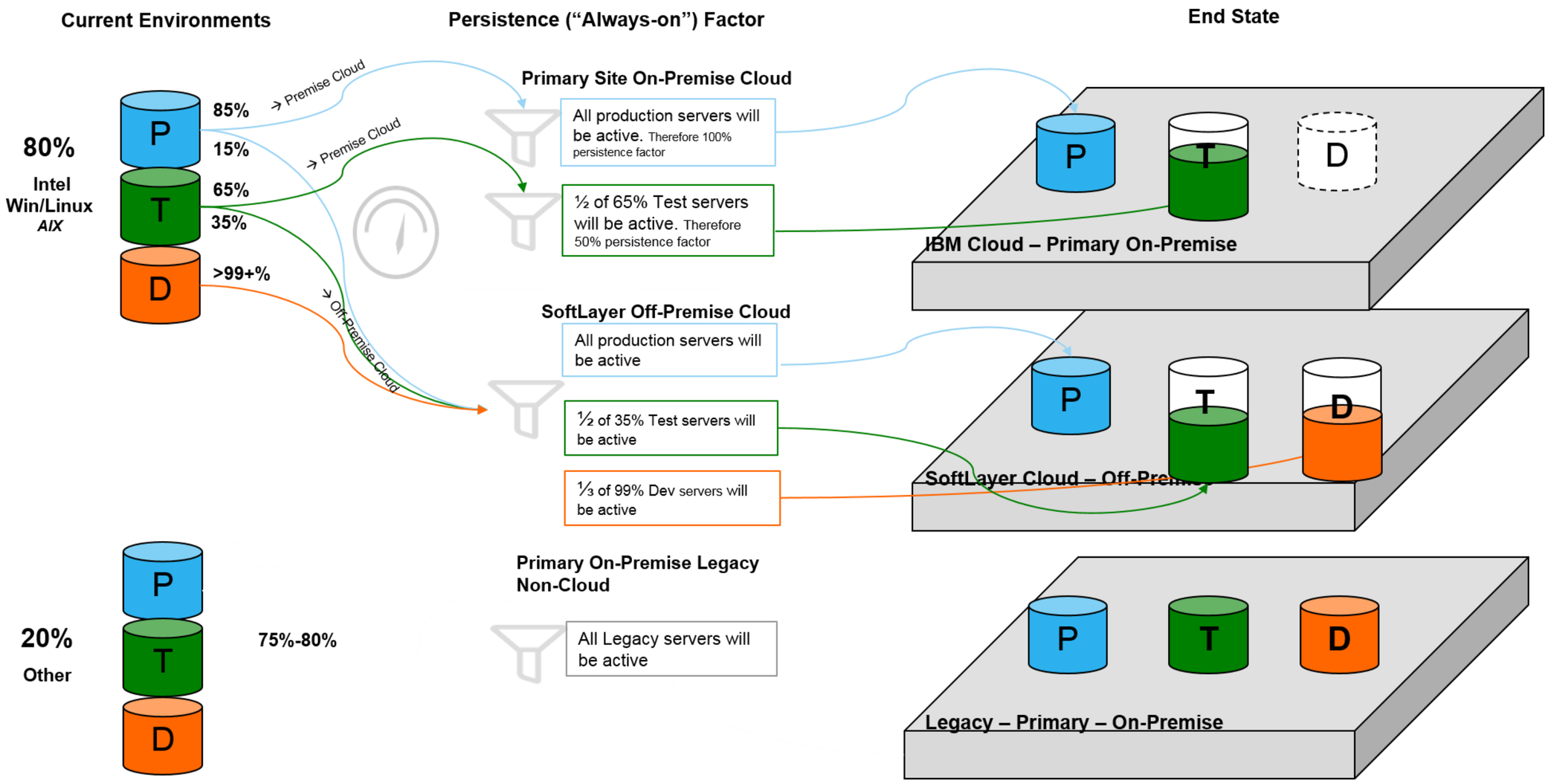


There are 5 key elements of the Enterprise IT-as-a-Service Framework that need to be considered for a design.

The migration to an ITaaS Model is not a revolution but an evolution that clients can migrate to over time in a structured approach – Plan for today, Design for tomorrow approach.



Example: IBM's Enterprise IT 'as a Service' model—hybrid multi-data centre approach



The Enterprise IT "as-a-Service" model will enable the enterprise to transform their IT environment……..

IT Innovation

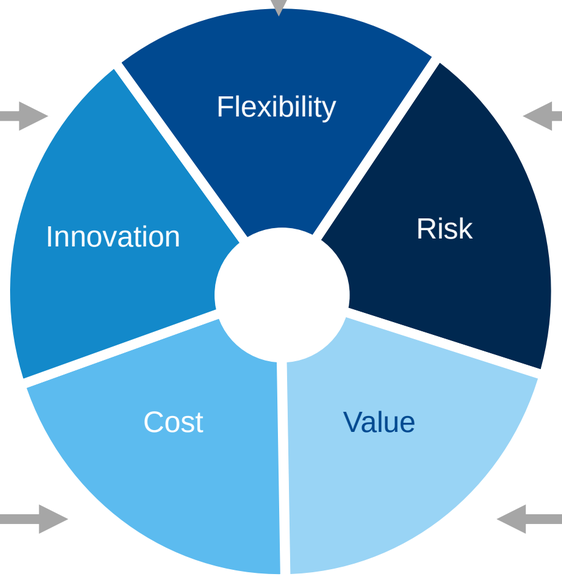
- Autonomics
- Hybrid on-premises and off-premises cloud model
- Cloud orchestration layer
- Standardized patterns
- Predictable outcomes
- Standardized infrastructure
- Strengthened governance with an integration layer

Improve Flexibility

- Open cloud standards
- Agility to respond to new requirements
- Rapid provisioning
- Rapid scaling for peak loads

Lower Risk

- Analytics for service management
- Leverage knowledge of IBM people, process and technology
- Improved environment currency
- Proven and efficient failover and backup solutions
- Infrastructure backed by service levels
- Faster issue resolution



Reduce TCO

- Price transparency
- Less capital, purchased as a service
- Simplified management
- Consumption-based pricing

Increase Business Value

- Savings alternatives
- Increased productivity
- Faster time to market
- Resiliency options

….. how do we do that in IBM Systems Group ?

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Cloud Transformation Strategy

Our clients have many questions to be answered for Cloud Solutions……..Hybrid Cloud can be more complex than we think.

Public, Hybrid, Private – Will integration work?

One vendor do all of these for us?

Need t-shirt size templates for provisioning.

Can I manage both Public & Private using same console?

Can we do PaaS like Spark as a Service?

What about storage Cloud?

Is Cloud really secure? How about data security?

We have Power Systems & x86 – will Cloud Integrate both

How can I bring value to my business using Cloud?

How about Container Cloud?

How will billing & metering happen?

Heterogeneous storage – Can we consolidate & cloudify?

I have lot of Objects to store – Can they be on Cloud? How about archive?

How will I bring data into Cloud?

…..the IBM Cloud Transformation Strategy approach can help answer them.

We always start by understanding a client's reason for a Cloud Strategy as many of those transformative technologies are aimed at how to improve business process, increase revenue growth and support clients to meet their business objectives.

Mobile revolution

Connectivity, access and participation are growing rapidly

Social media explosion

Quickly becoming the primary communication & collaboration format

Hyper digitization

Digital content is produced and accessed more quickly than ever before

The power of analytics

Real time analysis, predictive analytics and micro-segmentation emerging

Transformational cloud – Cloud's attributes make it a powerful delivery model enabling new business models, cost benefits, flexibility and large on-demand capacity

Gmail, Facebook, Linkedin are pioneer examples of cloud computing with advertisement based revenue and cloud's low cost delivery model sustaining free services.

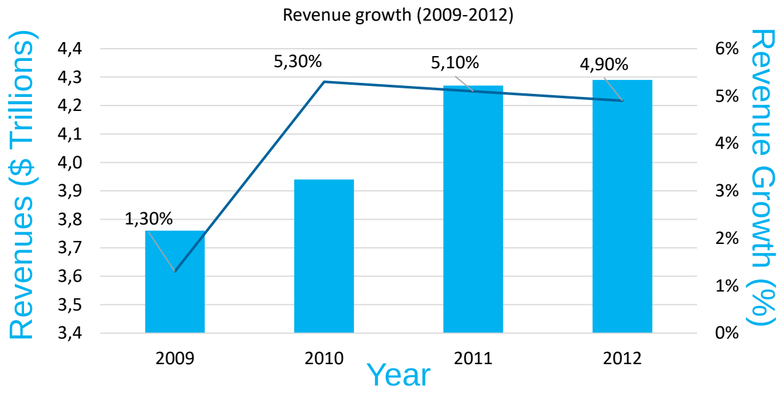
Ecosystem of connected health and wellness apps that delivers a consolidated view of users' health. Strong & growing ecosystem with API partners cover all aspects of health care[1].

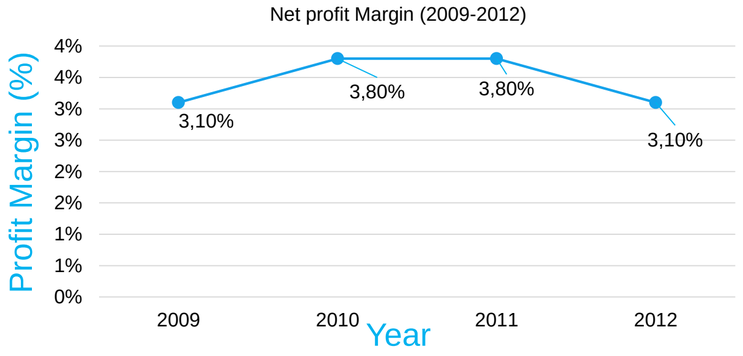
The Xerox Mobile Print platform uses cloud to convert and process print requests.
This removes complexity from end-users, reduces costs & management of diverse devices and print configurations.

Source: Joint IBV/EIU Cloud-enabled Business Model Survey of 572 business & IT leaders

Using retail as an example, this industry is being hit by multiple disruptive forces – technology, ever-changing consumers and an inundation of data

- Consumer wants and needs changing
- New shopping mediums emerging (mobile, smart sensors, social)
- E-commerce challenging traditional retailers
- Data becoming extensive and ubiquitous
- Emerging markets are becoming even greater opportunities for growth
- Consumers have access to perfect price visibility via technology





Source: IBM Whitepaper "Cloud Computing in the Age of Big Data", http://www2.deloitte.com/global/en/pages/consumer-business/articles/global-powers-of-retailing-2014.html

Today, retail leaders are focusing on three key imperatives

PERSONALIZED SHOPPING EXPERIENCES

Vast amounts of customer data available can be harnessed to create a single view of each customer, find patterns and deliver more relevant experiences

EFFICIENT MERCHANDISING AND SUPPLY NETWORK

Smarter merchandising and a more agile supply network, retailers can successfully match customers to offers and deliver merchandise more effectively

TRANSFORM AND OPTIMIZE OPERATIONS

New tools and data allow retailers to improve their operations to allow for bottom-line optimization and top-line growth

Cloud technology improves efficiency, expands innovation potential and drives revenue growth

In order to address industry challenges and manage changes, business leaders can leverage the power of cloud solutions at the same time IT will deliver those solutions and meet their own targets in terms of service delivery.

Cloud computing is a pay-per-use consumption and delivery model that enables real-time delivery of configurable computing resources (for example, networks, servers, storage, applications, services).

Cloud's essential characteristics

- ***Rapid Elasticity***
- ***On-demand self service***
- ***Measured service***
- ***Resource Pooling***

Cloud empowers six potentially "game changing" ***business enablers***

Cost flexibility	▪ Shifts CapEx to OpEx ▪ Shifts cost from fixed to variable, pay as you go
Business Scalability	▪ Allocate and release resources based on demand ▪ Gain from scale economics
Market adaptability	▪ Speeds time to market ▪ Supports rapid prototyping and innovation
Masked complexity	▪ Expands product sophistication ▪ Simpler for customers/users
Self Service	▪ Drives user-centric experiences (preferences, movements, behaviors)
Services Connectivity	▪ Facilitates new value nets of partners, customers and other external players ▪ Enables industry platforms

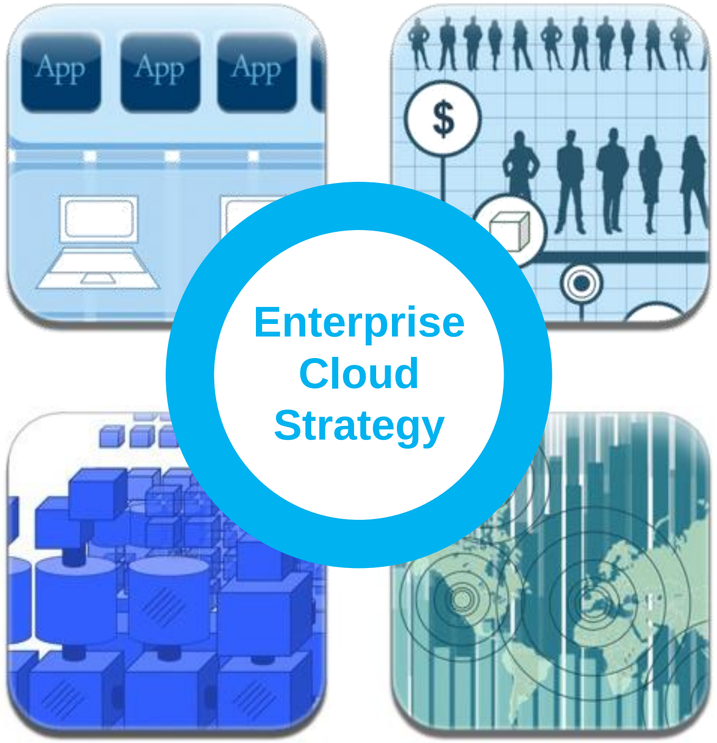
Cloud strategy comprises four elements…….

APPLICATION AND DELIVERY PLATFORMS

Driving agility and productivity for the enterprise; tested strategies to improve life cycle performance

BUSINESS MODELS ENABLED BY CLOUD

Promoting highly competitive initiatives at the enterprise and Industry level



INFRASTRUCTURE PLATFORMS

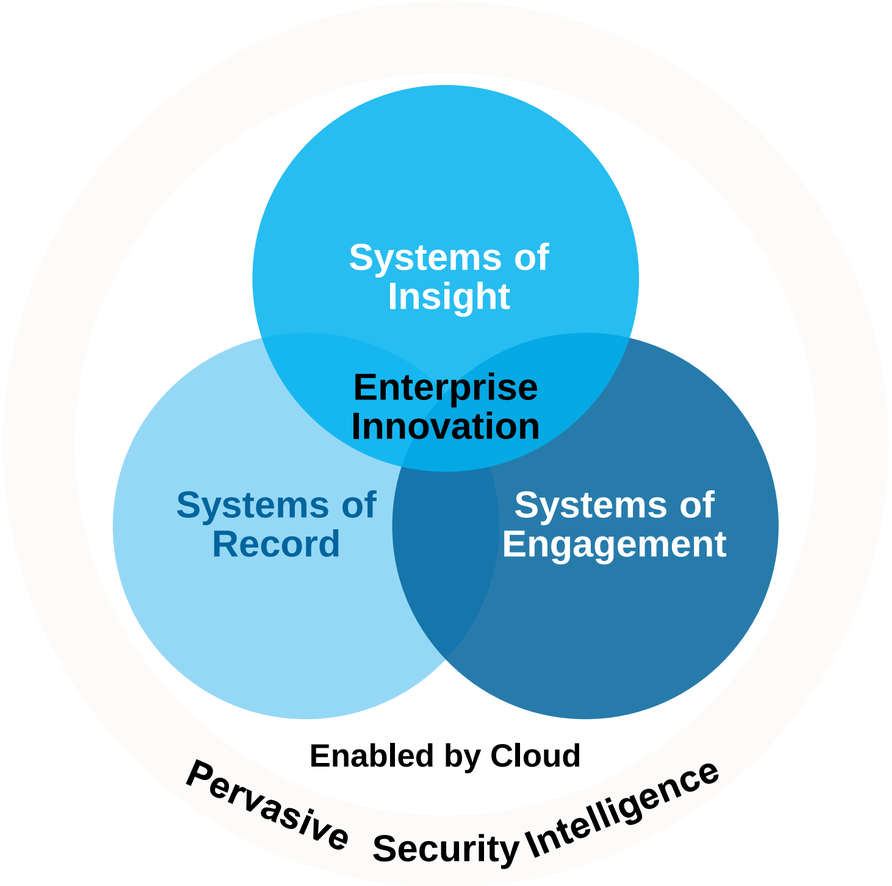
Delivering consumable, secure and readily available resources to enable agile execution

DATA PLATFORMS

Instantiating well-integrated business intelligence to manage the enterprise

…….. and we need to understand the clients reasons for a Cloud solution to ensure that our products can deliver those needs.

Not every workload can move to Cloud, enterprise innovation is successful when the solution integrates new technologies with existing core systems, those core systems may also need attention to fix some current issues and meet the challenges of the 'new' environment.



Systems of insight
Advanced analytics and cognitive computing systems that harness big data, enabling competitive advantage for enterprises

Systems of engagement
Leverage mobile and social to transform relationships with customers, employees & citizens

Systems of record
The traditional core systems such as accounting applications and product systems that record key internal data

Pervasive Security Intelligence
A dynamic approach to threat reduction through a life cycle of prevention, detection and response

Cloud enables leaders to take a systematic approach to integrate these capabilities to drive enterprise innovation

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Clients normally understand about Cloud through two ways

CxO, IT Head

- Industry reports from Gartner, Forrester
- Consulting Studies by competition / partners

- Experience of moving peripheral applications into Cloud
- Public Cloud trial

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- Understand the strategy
- Understand current IT Capabilities.

- Define an Operational Model
- Define the Target workloads for cloud

- Define the desired infrastructure & design
- Return of Investment, timeline

- Plan Application Migration
- Define the Service Management Plan

- Analyse workloads for Cloud Affinity
- Define the Target workloads for cloud

- Define an Enterprise Architecture Plan

- Build an adoption plan
- Build a cost case to support the strategy.

Organisations can take a five stage approach in cloud adoption, however, this can take time to implement.

1 Create Cloud strategy, architecture and plans	2 Identify and prioritize workloads	3 Determine cloud deployment options	4 Develop Cloud business case	5 Prepare for implementation
Determine the organization goals, platform requirements & complexity associated **Develop** enterprise cloud strategy, options available and roadmap **Envision** the cloud architecture that will support cloud initiatives **Update** IT Strategy and IT plans to align them with cloud strategy	**Define** business drivers to prioritize use cases for cloud **Implement** a CloudFirst strategy to evaluate right blend of cloud options for new projects **Assess** and evaluate from the current applications, the best candidates for cloud **Determine** the applications to be moved to cloud	**Define** multi-sourcing models and cloud vendor selection criteria **Assess** and determine how to best leverage the options of private, public and hybrid delivery models **Develop** Cloud Service Catalog, SLAs and KPIs	**Develop** cloud cost models including transition **Finalize** a cloud business case and examine its ROI including time required for initial payback	**Prepare** infrastructure for cloud **Develop** ▪ Cloud Risk Management plan and policies ▪ Security and Compliance plan and processes ▪ Transition plan including workforce transition **Assess** impact on operating model; identify and plan changes required

Cloud planning should result in accelerated migration, quick wins and mitigated risks

Note: The above shows an overall plan and will include aspects of workload prioritization and migration discussed in other slides

Time to delivery can be excessive

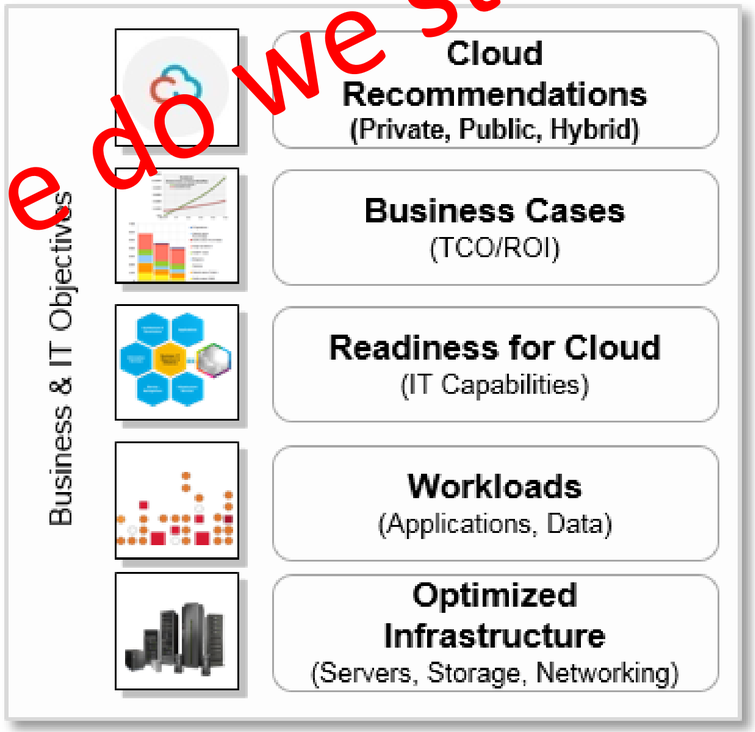
"Real World" Issues

- Lack of Skills
- Company Politics
- Technical Bias
- Lack of Vision
- Procrastination
- Sponsorship
- Budget.

Cloud Transformation Strategy – a flexible and adaptable method to help customers accelerate their company's adoption of hybrid cloud, maximizing the impact of their investments and improving business outcomes

What it does

- Evaluates feasibility for deploying Cloud capabilities in support of business and IT objectives
  - ✓ Review of current IT Infrastructure
  - ✓ Assessment of Cloud readiness across multiple IT domains
  - ✓ Identifies candidate workloads for moving to Cloud
- Recommends appropriate Cloud solutions
  - ✓ Identifies roadmap towards a future state hybrid Cloud infrastructure
  - ✓ Identifies appropriate systems with highest value results for a hybrid Cloud infrastructure
  - ✓ Business Case showing costs/benefits associated with each recommended Cloud solution



How do we do that and where do we start?

Delivered by experienced IBM Lab Services consultants
Identifies optimal path to Cloud while leveraging existing investments – What is the right strategy?
Identifies candidate workloads and next steps for deploying Cloud – Where do I start?
Quantifies the expected cost and operational benefits of Cloud options – What is the business case?

When we build solutions, IBM consultants & architects use our defined architectures that provide practices for building apps on the cloud and our reference architectures define the basic pattern, while implementations provide specific technology, practices, and tool choices to build and deploy that pattern.

Cognitive
Gain business advantage by unlocking new intelligence from vast quantities of structured and unstructured data and by developing deep, predictive insights.

Microservices
Take a cloud-native approach to building mobile and web applications with a microservices architecture.

Data and analytics
Build solutions that gather data from any type of source, including web and social. With those solutions, you can store, analyze, and report on data by using analytic engines to drive actionable insights and visualization.

DevOps
Rapidly execute and scale the IBM Bluemix Garage method. The DevOps architecture includes the best of Design Thinking, Lean Startup, Agile Development, DevOps, and Cloud to help enterprise organizations

Hybrid
Create applications whose components are split across cloud and on-premises environments, or across different clouds.

Internet of Things
Connect to IoT devices and quickly build scalable apps and visualization dashboards to gain insights from IoT data, using Bluemix IoT, data, and cognitive services.

Mobile
With IBM® Cloud, develop, deploy, and manage scalable native and hybrid apps for mobile devices while you are securely connected to back-end infrastructure on the cloud or in an enterprise.

Security
Understand the security components that are needed for secure cloud deployment, development, and operations.

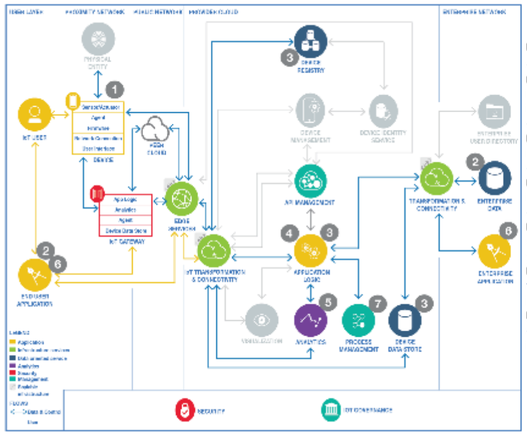
Service management
Cloud service management and operations refers to all of the activities that are performed by an organization to plan, design, deliver, operate, and control IT and cloud services that are offered to customers.

Blockchain (Experimental)
Record a history of transactions in a shared immutable ledger for transactional applications. Transactions are trusted, accountable, and transparent.

Social
A social platform provides a collaborative information exchange with intelligent and secure applications. Deliver an integrated, single-source ecosystem of collaboration and communication applications and services.

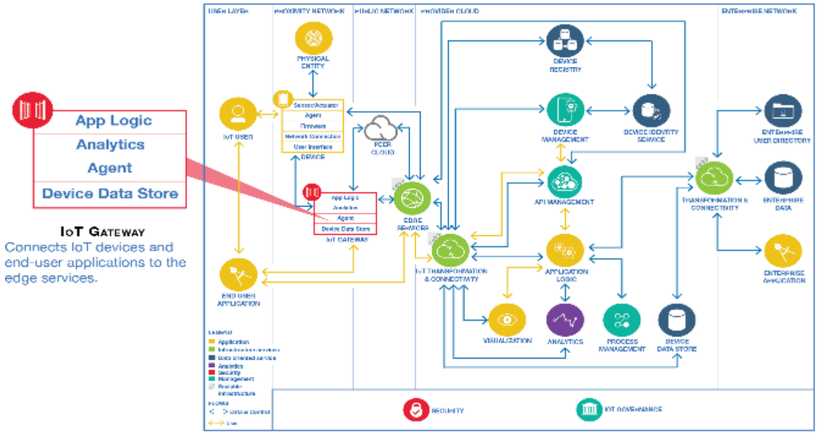
Virtualization
Extend your data center to the cloud simply and quickly. IBM Cloud for VMware Solutions let you deploy a software defined datacenter to the cloud while reusing your existing skill set, tooling, and processes.

When we design a cloud solution, defined architectures can be used to create cloud solutions for those specific scenarios, for example, Cognitive, Analytics, IoT , Cloud Management .



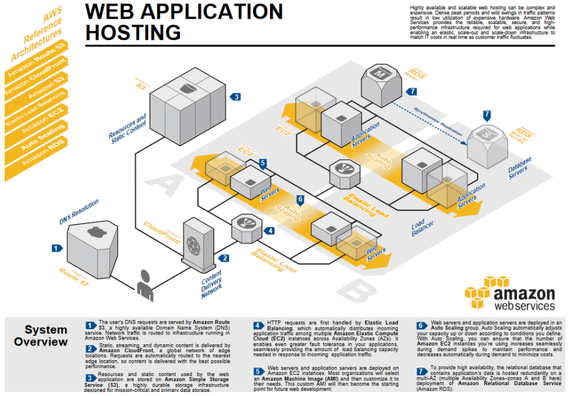
Runtime Flow

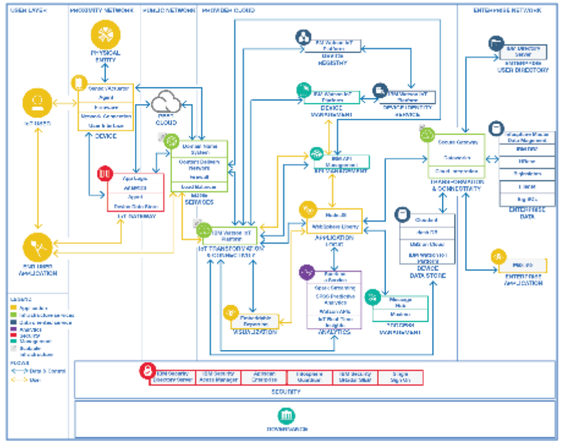
1. Sensors and actuators are deployed.
2. Homeowner logs into the insurance app & authorizes insurance service to access device data.
3. Map the user, devices and insurance policy within the cloud services.
4. Data mapping is updated in the application logic component.
5. Access other data sources such as a weather data service for use in analysis.
6. The analysis result notified to the homeowner and to the insurance company.
7. Business process of claims management is initated.

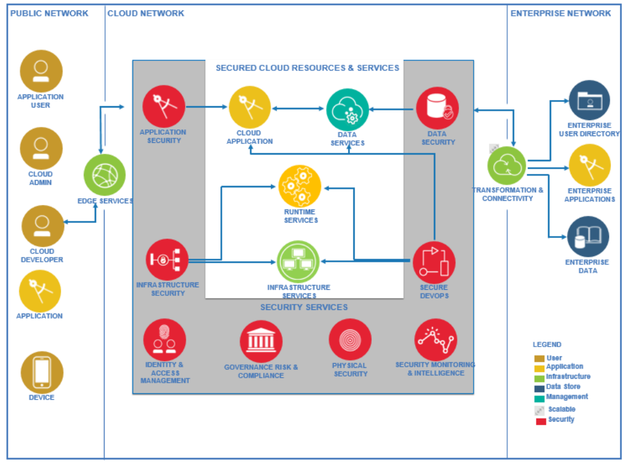


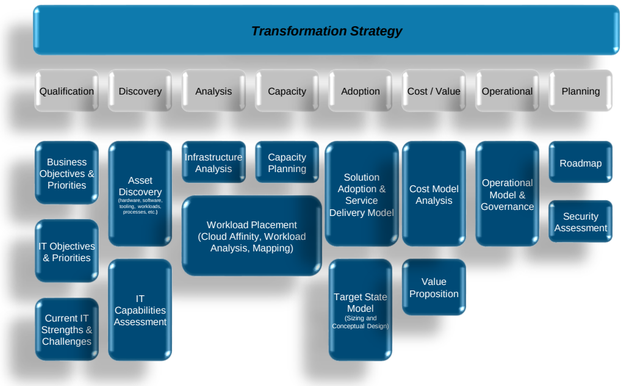
IoT Gateway

Connects IoT devices and end-user applications to the edge services.

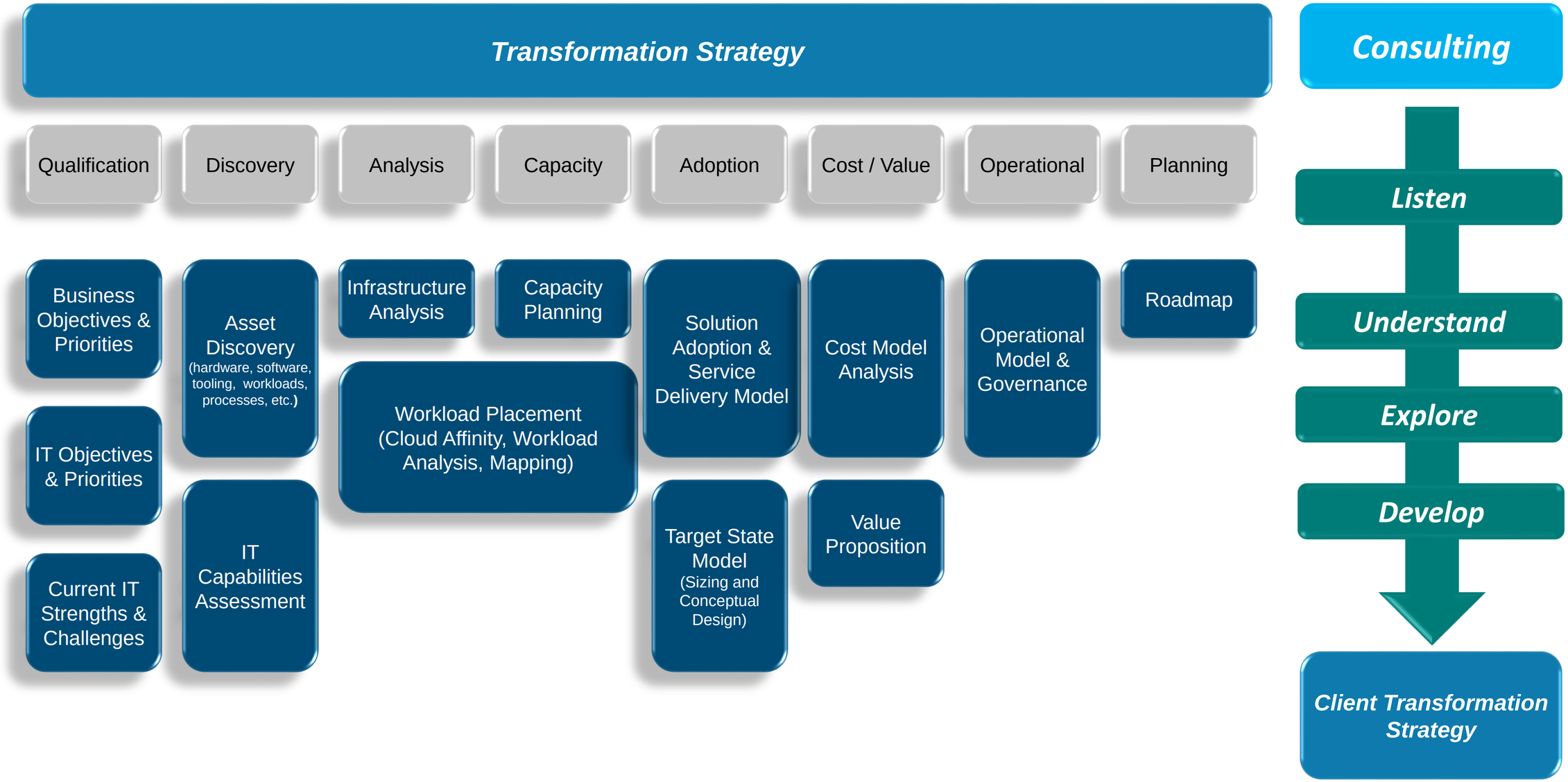




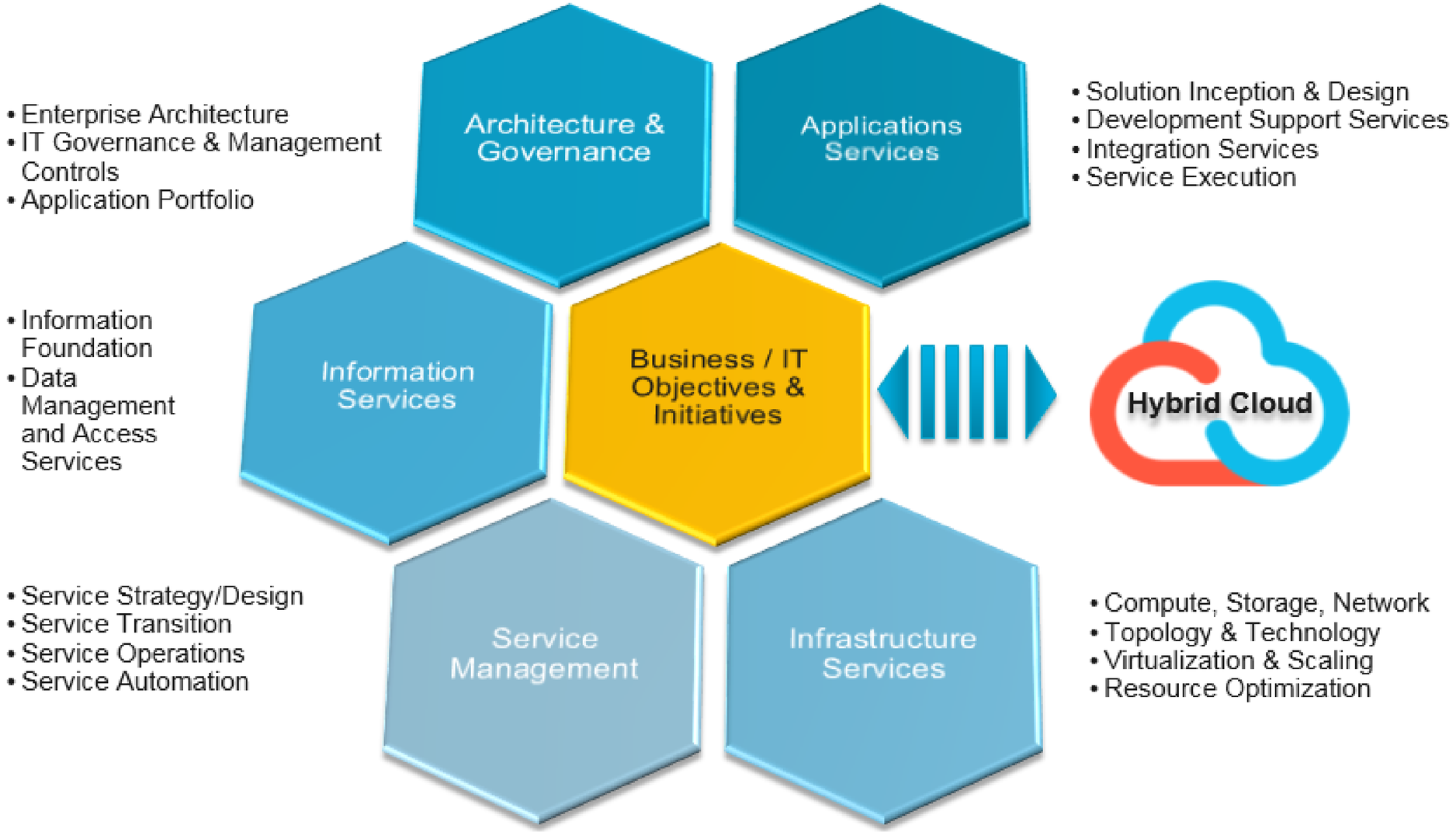




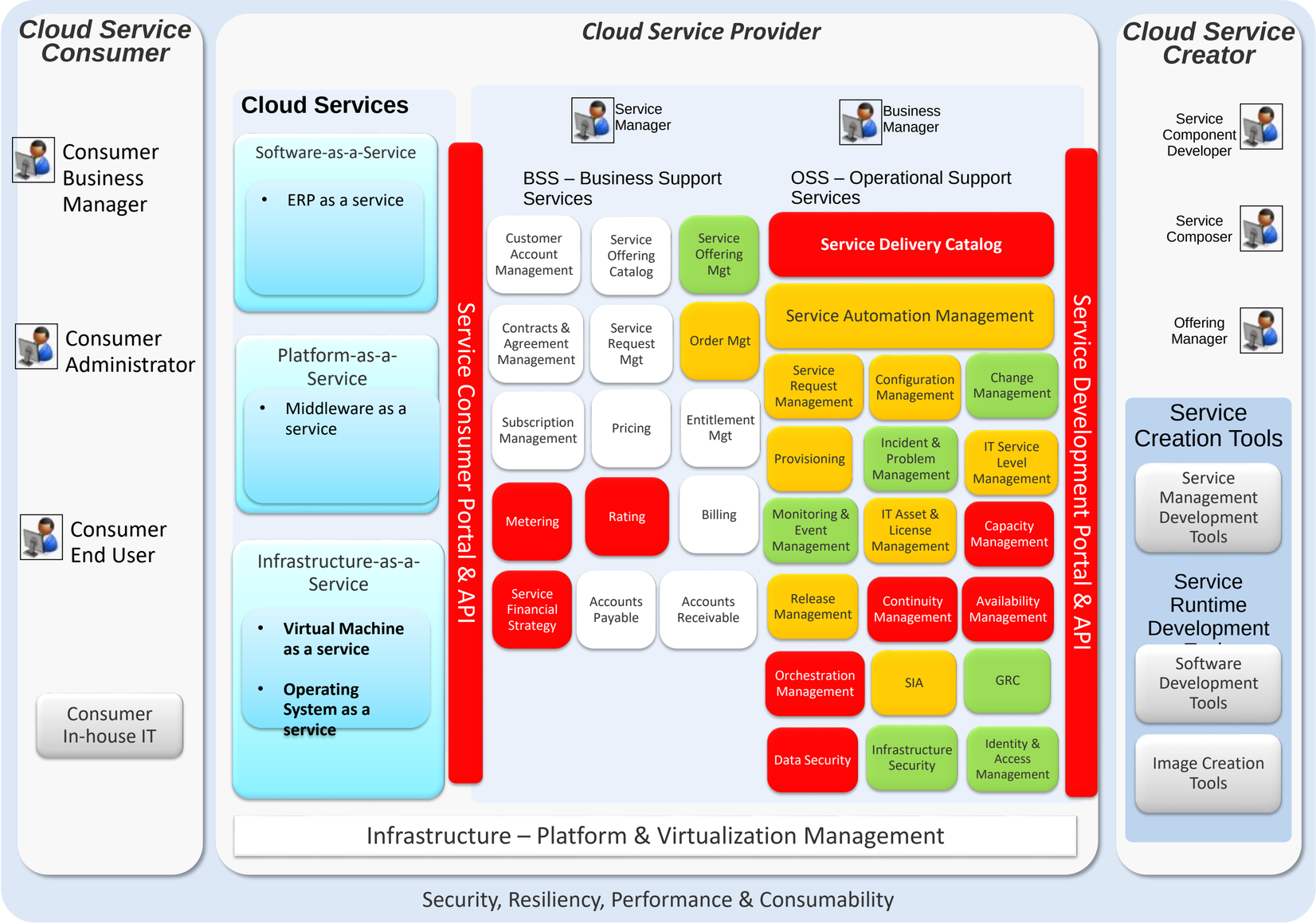
When we engage with a Client we use our Consulting approach to fully understand a scope of work that will be of value to the Client, it can be a complex solution design or a simple IaaS requirement.



Current client capabilities are assessed across multiple IT domains and potential Cloud Service models



The results from the assessment performed will be applied to the IBM Cloud Computing Reference Architecture that will show at a glance the maturity of certain services in a RAG format.



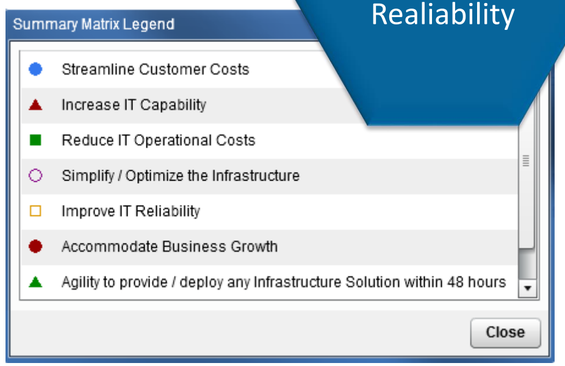
** GRC = Governance, Risk & Compliance SIA = Security Intelligence & Analytics*

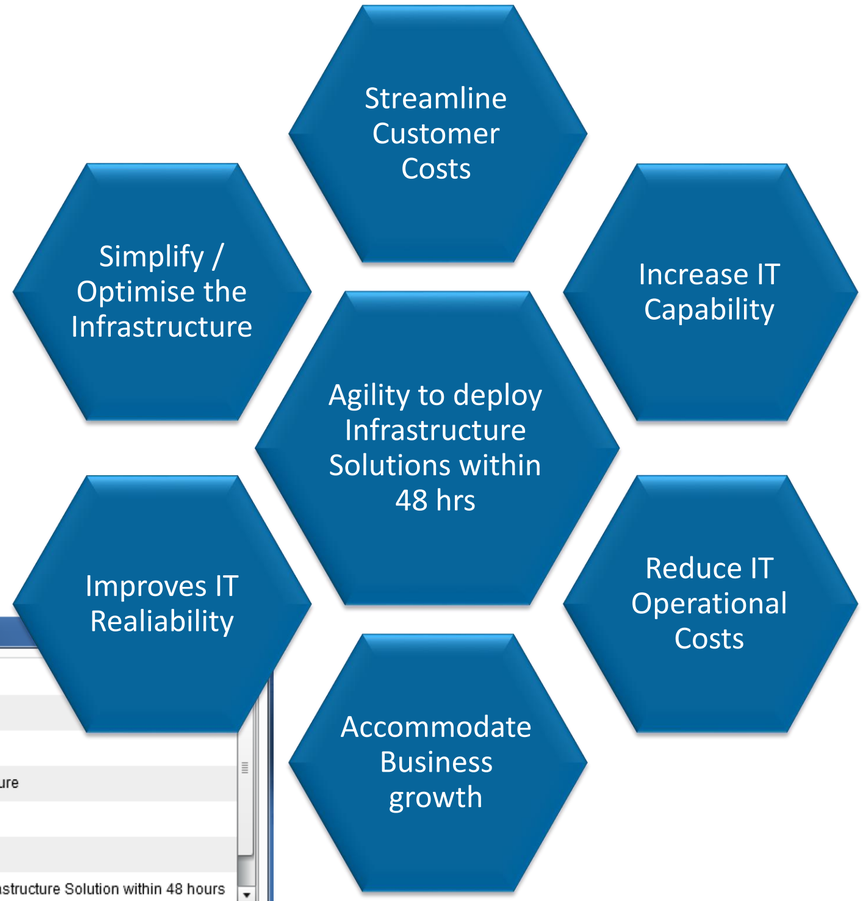
Workshop Scope, Priority and Effort Definitions.

For each IT Domain, Capability and Detailed Capability assessed, the activities that are to be planned as an outcome of the assessment had been assigned a Priority and Effort statement. We also aligned those IT Initiatives that would be impacted by those changes that will have a direct impact on the **Cloud 'Strategy.'**

	Priority	Effort
High	Critical to supporting the Cloud Strategy	High Effort 12 - 24 months
Medium	High Impact to supporting the Cloud Strategy	Medium Effort 6 - 12 months
Low	Low Impact to the Cloud Strategy	Low Effort < 6 months

Scope	Time Horizon
Cloud	12 Months





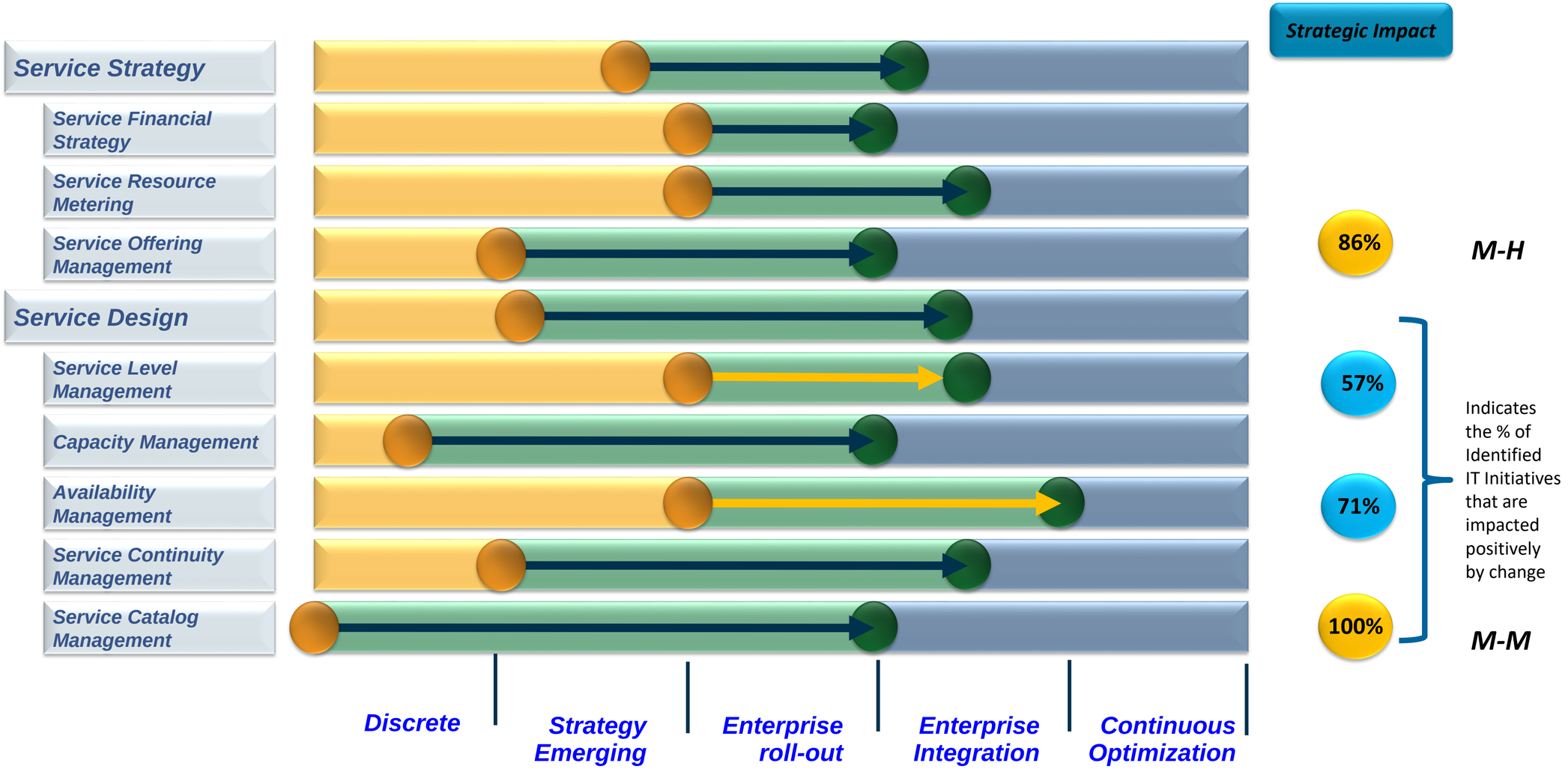
Our tooling delivers a 3x3 Capabilities Matrix that can help clients focus on what has to be done in terms of priority and effort.

Priority: High Effort: Low	Priority: High Effort: Medium	Priority: High Effort: High
Asset Management Gap: 2.5 ■●■▲●□	Problem Management Gap: 2.5 ●■▲□●■ Release Management Gap: 2.5 ●▲■○□●■ Service Continuity Management Gap: 2.5 ■□■ Configuration Management Gap: 2.5 ●▲■□●■○ Availability Management Gap: 2 ■■□●● Service Level Management Gap: 1.5 ■□▲■	Governance, Risk and Compliance (GRC) Gap: 3 ▲□■■ Data Security Gap: 3 ▲■□■ Identity and Access Management Gap: 2.5 ▲□■■ Incident Management Gap: 2 ▲■□●■● Security Intelligence and Analytics Gap: 1.5 ▲■□■ Infrastructure Security Gap: 1.5 ▲■□■
Priority: Medium Effort: Low	**Priority: Medium Effort: Medium**	**Priority: Medium Effort: High**
	Service Catalog Management Gap: 3 ■■●▲○□● Capacity Management Gap: 2.5 ●□○■■ Monitoring & Event Management Gap: 2 ■□■▲● Workload Management and Orchestration Gap: 2 ●■□■● Application Security Gap: 1.5 ▲□■ Service Resource Metering Gap: 1.5 ●■■	Service Offering Management Gap: 2 ■●●■▲○ Provisioning Automation Gap: 1.5 ●▲■○□●■ Service Desk Gap: 1 ■□■●

Summary Matrix Legend

●	Reduce Complexity
▲	Improve Security
■	Service Improvement
○	Speed to Market
□	Improves Reliability
●	Reduces IT Operational Costs
■	Increases IT Capability

Service Management



High-High

High-Medium

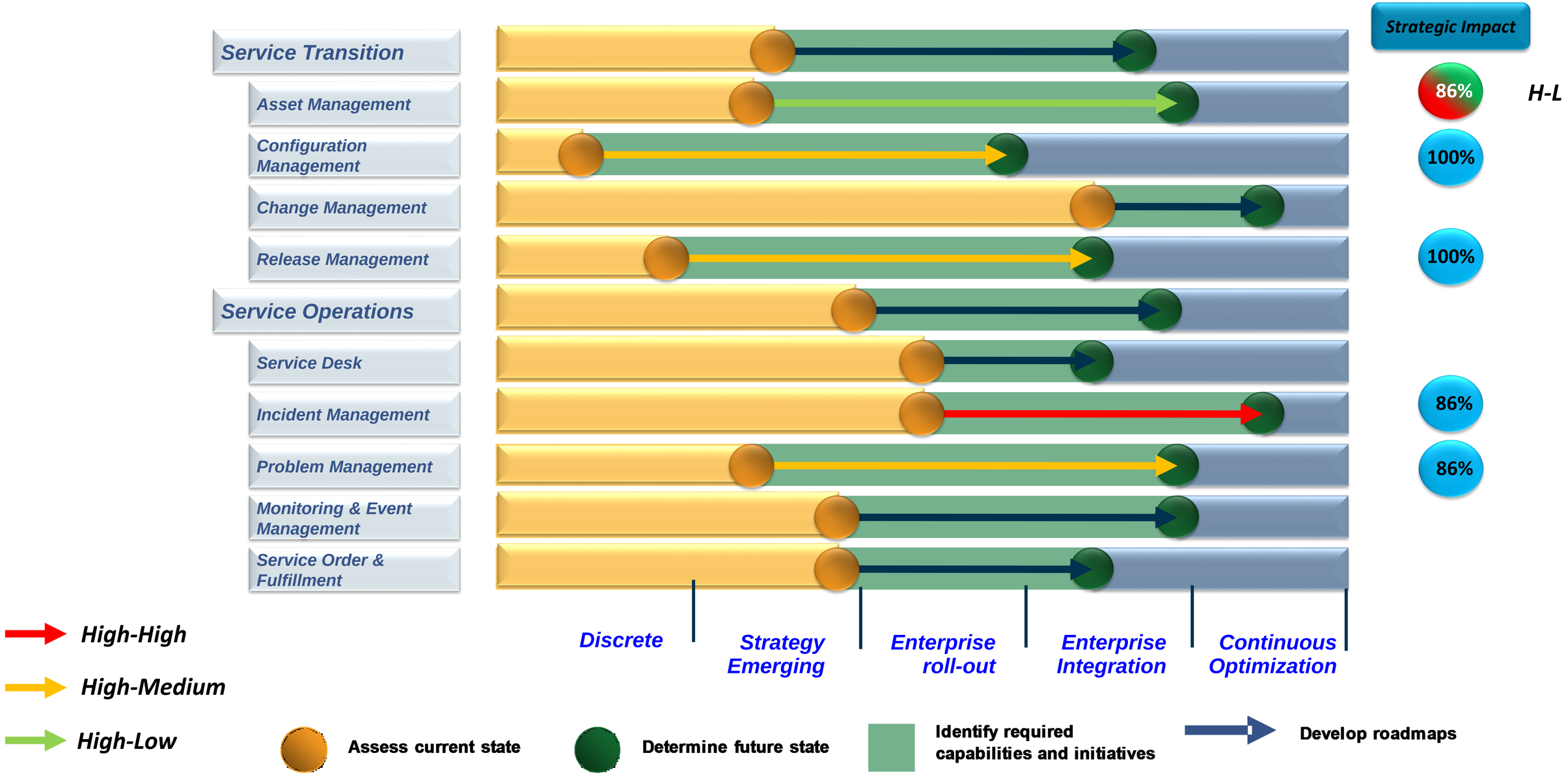
Assess current state

Determine future state

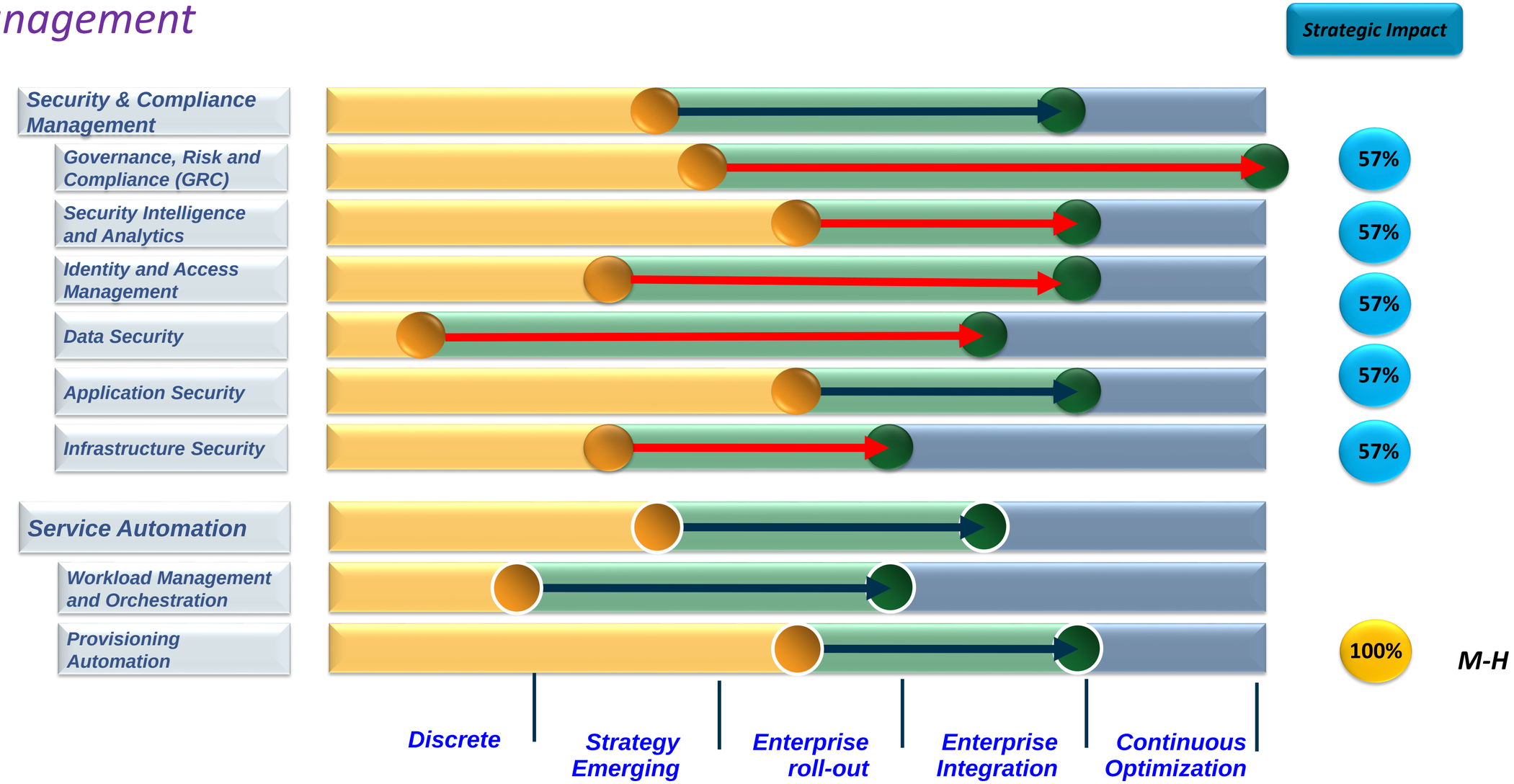
Identify required capabilities and initiatives

Develop roadmaps

Service Management



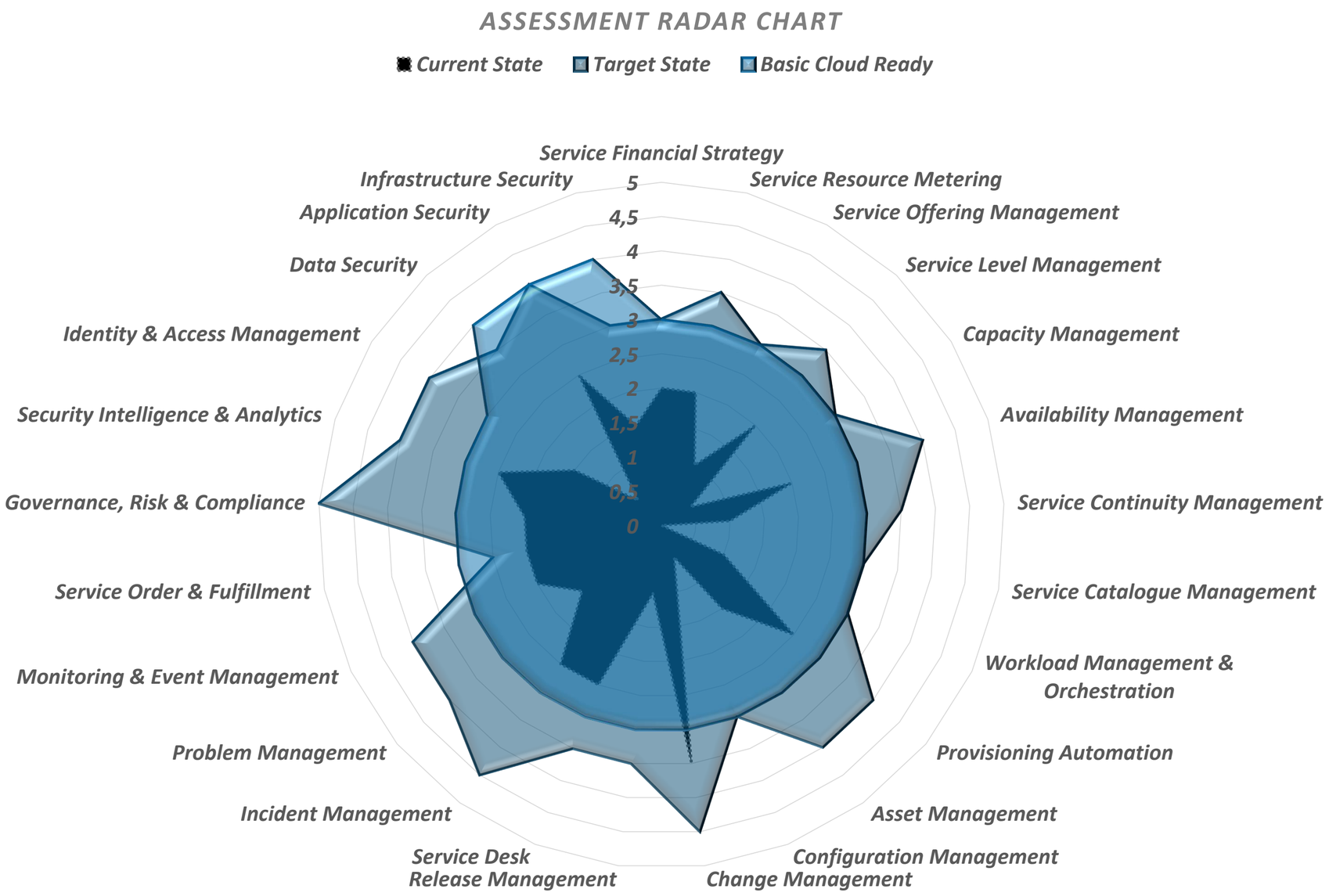
Service Management



High-High

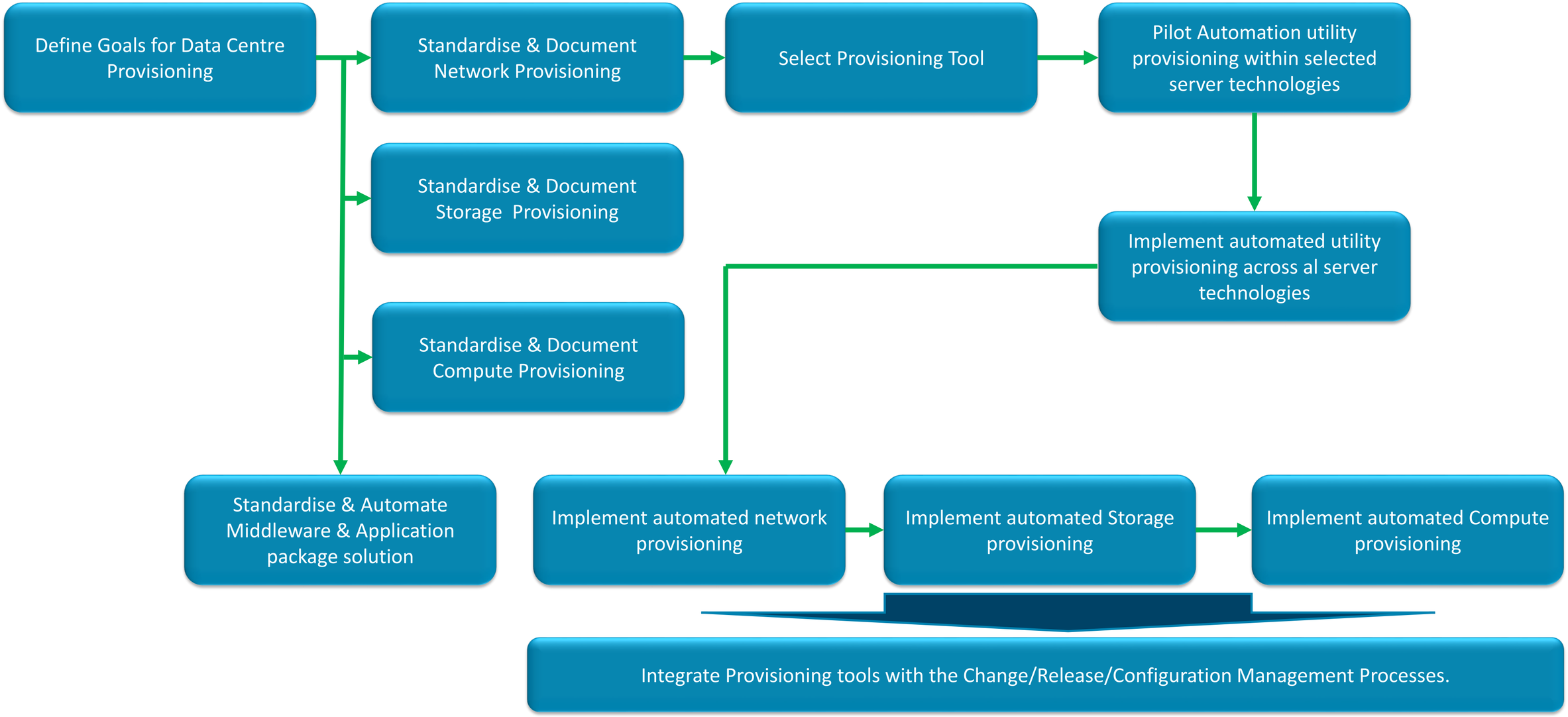
High-Medium

Assessed Radar Chart



Roadmaps can be built for the actions required to implement some of the Service Management solutions.

Service Management – Service Automation – Provisioning Automation



Next Steps could be to engage in with further Cloud Transformation Strategy and design the Cloud solution. The deliverables from this approach will support the client in the design and build their cloud environment.

Business Objectives & Priorities
- Understand some Business Drivers for the IT Strategy

Capacity Planning
- Understand required capacities and how to provide capacity on demand

Solution Adoption & Service Delivery Model
- Define Solution Adoption phases and Service Delivery solution

Asset Discovery (hardware, software, tooling, workloads, processes, etc.)
- Take outputs from the TADDM Scans or current spreadsheets

Workload Assessment
- Identify candidate workloads, Cloud Affinity, Environment Mapping.

Cost Model Analysis
- Create Cost case for the solution

Infrastructure Analysis
- Analyse Server & Storage Infrastructures for a Cloud Design, Define NFR's.

Target State Model
- Define Architectural decisions, Build Solution Overview, Define Operational Model.

Operational Model & Governance
- Build Cloud Operational Model and Governance Model.

- *Problem Management*
- *Incident Management*
- *Capacity Management*
- *Service Order & Fulfilment*
- *Change Management*
- *Service Catalogue Management*
- *Service Continuity Management*
- *Infrastructure Security*
- *Service Offering Management*

- *Server Virtualisation*
- *Storage Topology & Technology*
- *Storage Optimisation & Virtualisation*

- *Workload Management & Orchestration*
- *Provisioning Automation*
- *Security Intelligence & Analytics*
- *Service Continuity Management*
- *Service Resource Metering*
- *Asset Management*
- *Service Financial Strategy*
- *Service Level Management*
- *Availability Management*

Roadmap

Detailed Design & Planning

Implementation & Deployment

Note: This is not just a serial process, some modules can be performed in parallel and there could be iteration.

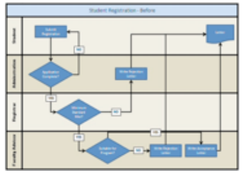
To create the target state model, IBM and the client technical team will perform a Cloud Definition Workshop to define what capabilities the cloud solution must have for now and in the future, Plan for Today and Design for 3 years hence.

Cloud Definition Workshop

1. Business Drivers

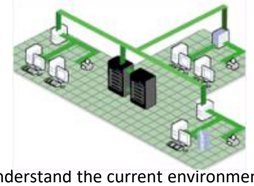
Describe the key business drivers for the project, the KPIs or CSFs, and how they align with Cloud computing.

2. Business Process



Understanding the existing "As-Is" process, and how this must change in order to meet the business drivers.

3. Current IT Environment

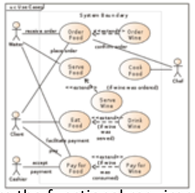


Understand the current environment where the Cloud will be deployed, what systems, technology, capacity, constraints.

4. Candidate Cloud Services

12-step process to defining the services and the attributes of the candidate Cloud services.

5. Use Cases & Actors



What are the functional requirements expected from the Cloud and who are the key actors. Expressed as Use Cases.

6. Non-Functional Requirements

NFRs should be defined to cover the volumes, capacity, scale, availability, security, operational and monitoring aspects of the Cloud solution.

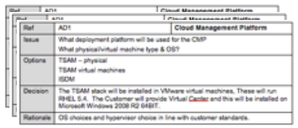
7. System Context

The system context should define the boundary of the Cloud, and the integrations with OSS / BSS systems

8. Architecture Overview

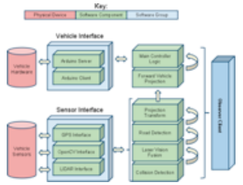
Architecture overview diagram should define the high level components, their placement and topology, using CCRA.

9. Architecture Decisions



Clearly documented decisions on key architectural points including the rationale for the decision.

10. Operational Model

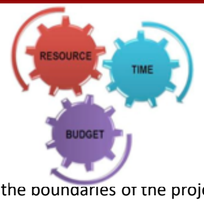


Design and consider the components of the solution both at a physical and logical level, and their interaction.

11. Roadmap

Define the overall timeline, phases, and key milestones that will shape the plan and overall delivery.

12. Scope



Define the boundaries of the project, inclusions, exclusions, dependencies, and align phases with milestones in the roadmap.

Target State Model

Note: This is not just a serial process, some maybe done in parallel, and there could be iteration.

Performing a Cloud Transformation Strategy can speed up the delivery of the Cloud Strategy and solution within 4 – 6 weeks.

1 Create Cloud strategy, architecture and plans	2 Identify and prioritize workloads	3 Determine cloud deployment options	4 Develop Cloud business case	5 Prepare for implementation
Determine the organization goals, platform requirements & complexity associated **Develop** enterprise cloud strategy, options available and roadmap **Envision** the cloud architecture that will support cloud initiatives **Update** IT Strategy and IT plans to align them with cloud strategy	**Define** business drivers to prioritize use cases for cloud **Implement** a CloudFirst strategy to evaluate right blend of cloud options for new projects **Assess** and evaluate from the current applications, the best candidates for cloud **Determine** the applications to be moved to cloud	**Define** multi-sourcing models and cloud vendor selection criteria **Assess** and determine how to best leverage the options of private, public and hybrid delivery models **Develop** Cloud Service Catalog, SLAs and KPIs	**Develop** cloud cost models including transition **Finalize** a cloud business case and examine its ROI including time required for initial payback	**Prepare** infrastructure for cloud **Develop** ▪ Cloud Risk Management plan and policies ▪ Security and Compliance plan and processes ▪ Transition plan including workforce transition **Assess** impact on operating model; identify and plan changes required

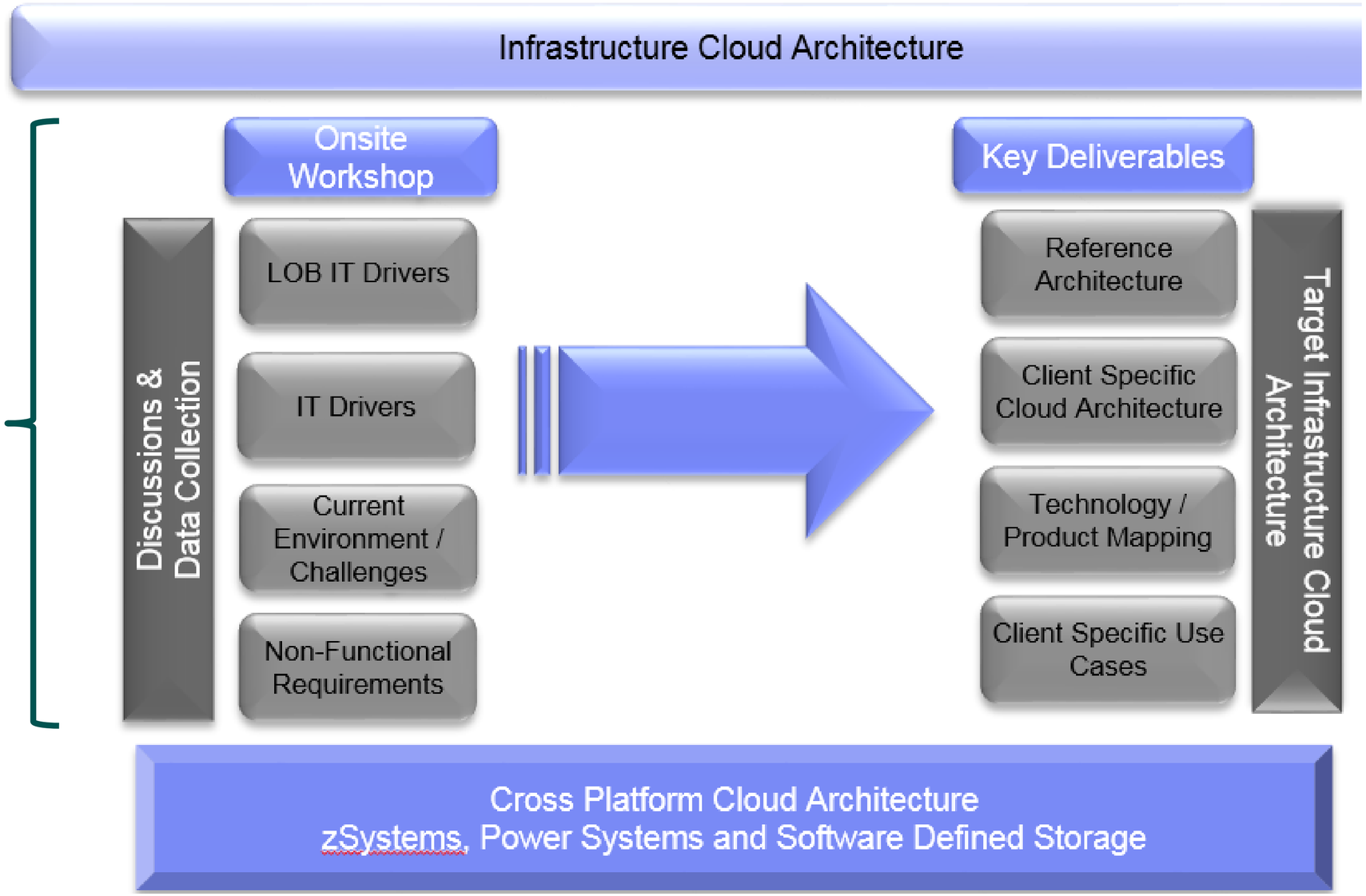
Cloud planning should result in accelerated migration, quick wins and mitigated risks

Note: The above shows an overall plan and will include aspects of workload prioritization and migration discussed in other slides

4 – 6 Weeks

On completion of the Cloud Transformation Strategy phase, we move onto the work to perform the Detailed Planning and Design

Some of the information we would have gathered in the CTS workshops



Sample Delivery Content from the next phase.

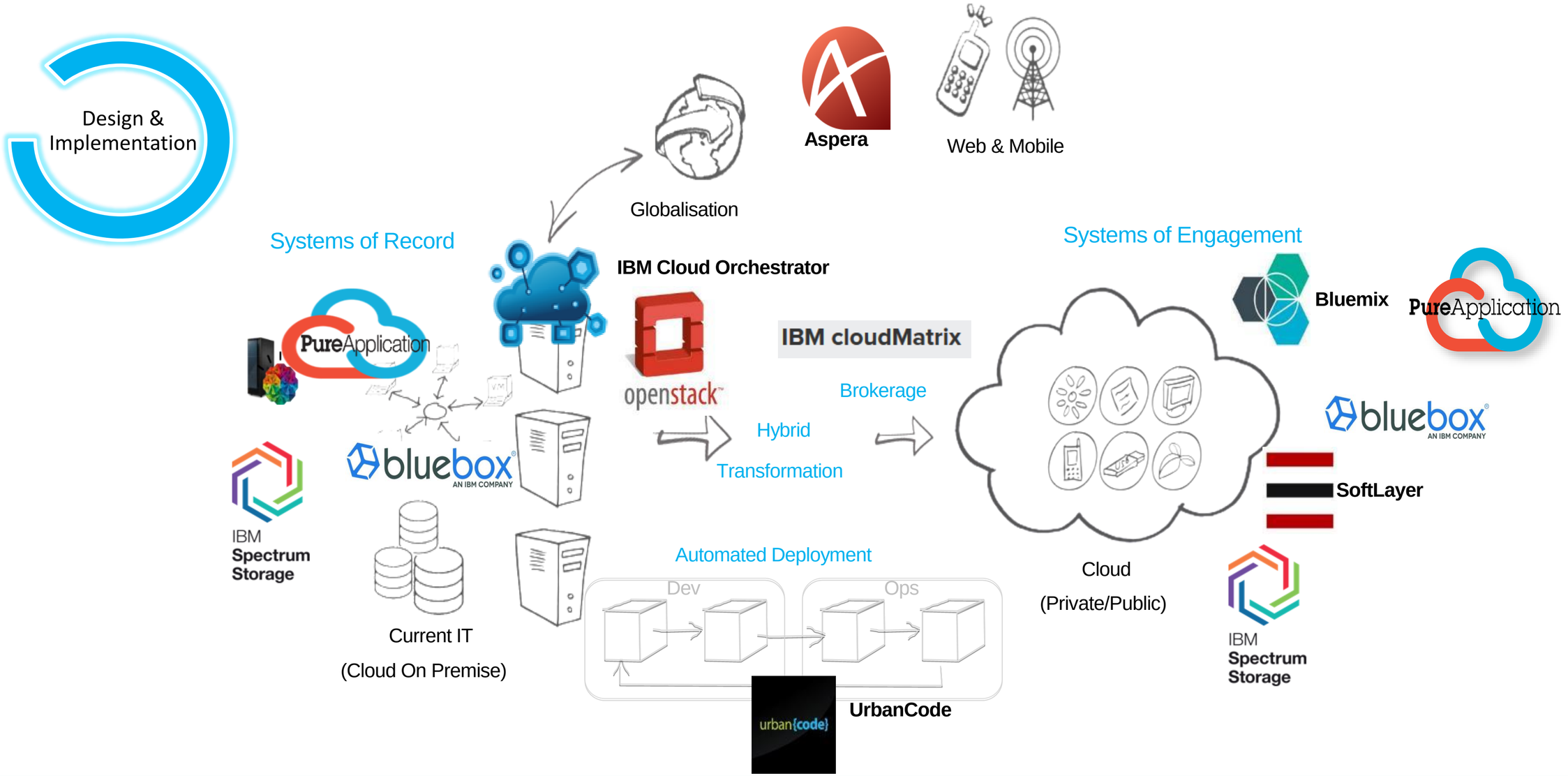
Module	Description
LOB IT Drivers	Drivers from business that drive Cloud
IT Drivers	Drivers from IT that drive Cloud
Current State	Existing environment, inhibitors, Inventory
NFRs	Non-functional requirements that are specific to infrastructure cloud
Reference Architecture	CCRA or RA from a client in the same industry
Client Specific Cloud Architecture	Recommended target state
Technology / Product Mapping	Product / technologies that we recommend to be used in the target architecture
Client Specific Use Cases	Use cases and benefits
Additional Guidance	Skills, phased implementation, future adoption recommendations
Next Steps	Project plan / milestone / offerings

The Cloud infrastructure solution has many components including hardware, software and cloud management solutions, the second pillar of cloud transformation will include IBM Lab Services to provide design elements.

Cloud Architecture

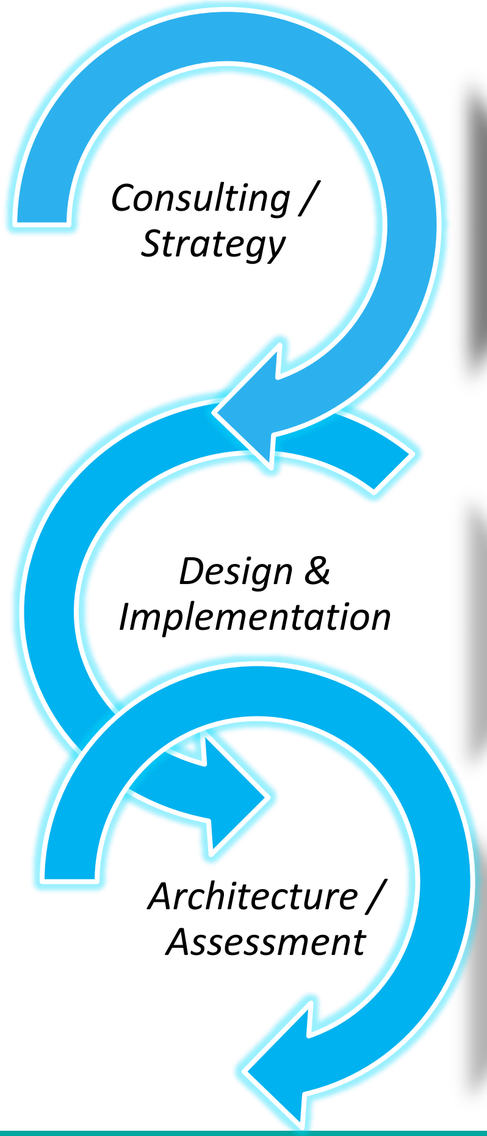
Compute Cloud Management	Compute – As a service	Storage Cloud Management	Data Cloud	Enterprise Cloud Management
PowerVC	Docker Architecture	IBM VSC	IBM Cloud Object Storage	Select Stack
Star Cloud / Select Stack	Hadoop / Spark as a Service	OpenStack Cinder	Spectrum Archive	OpenStack Manager
OpenStack Cloud Manager	Platform as a service (e.g. DBs **)	Hyper Scale Manager	Cloud Storage for VDI	Star Cloud
		Spectrum Control	Spectrum Scale / Accelerate	VMWare Integration - VRealise

As IBM and our clients define the end-state solution, some elements of the design can be implemented early on a 'Sand Box' environment to test and provide experience/training on some aspects of the design such as Orchestration & Provisioning along with Storage Optimisation & Virtualisation.



** A **sandbox** is a testing environment that isolates untested changes and outright experimentation from outside of the production environment.*

In summary, the IBM Lab Services Consulting Team has three pillars of Cloud Transformation and solution design is performed by IBM Lab Services and the IBM Systems Consulting Team.

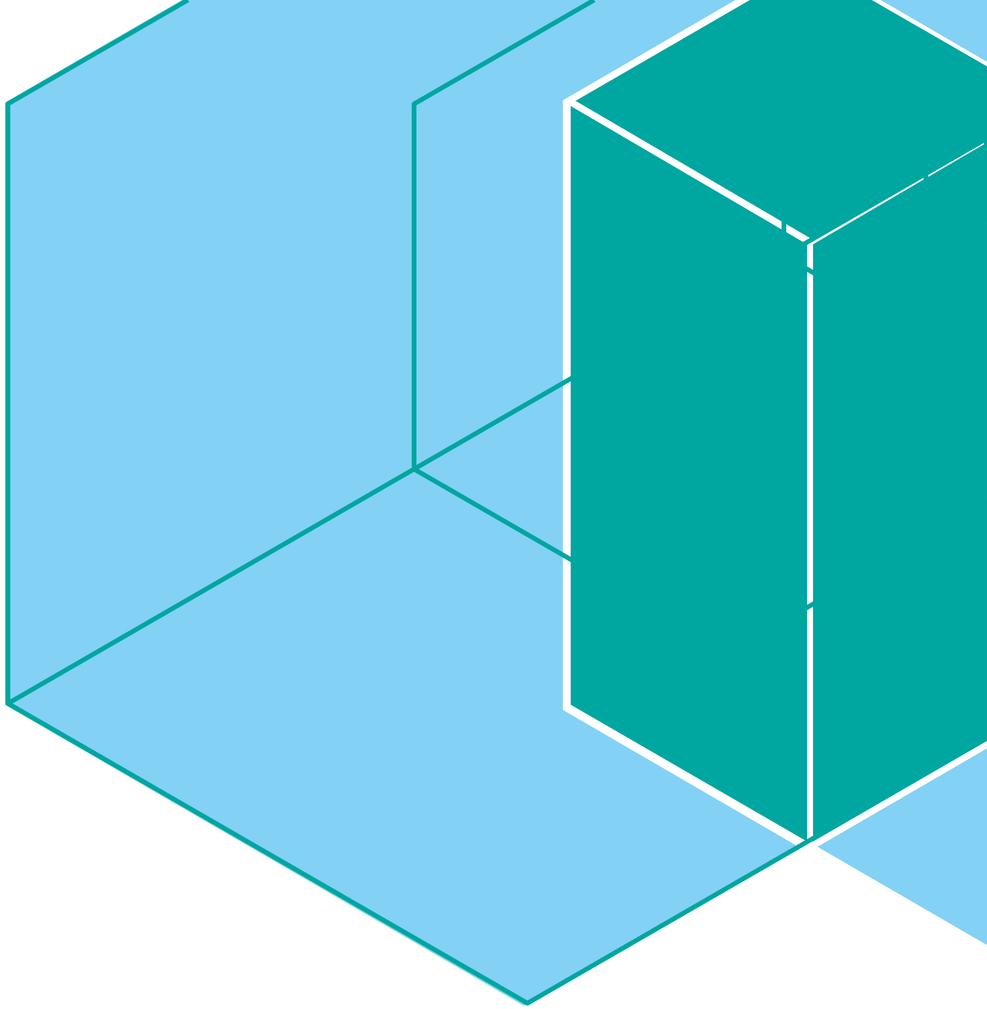


- Cloud Transformation Strategy led by **Systems Consulting**
- Position when customer is looking for Cloud Strategy & Roadmap (Cloud Delivery Models, TCO/ROI, Workload Affinity towards Cloud)

- Cloud Design Workshop (& implementation) for Power and Storage led by **Systems Consulting & Lab Services**
- Addresses a broad portfolio of Private / Hybrid Cloud design & implementation in Power & Storage

- Cloud Architecture led by **IBM Lab Services** to design Private Cloud using Systems Technologies – Compute & Storage
- Covers Power, Storage & zSystems
- Helps define solutions using PowerVC, OpenStack, SelectStack, DevOps, SDS

Frank Heard
IBM Systems Consultant



IBM Systems Consulting Team

Thank you.