

Decreasing Operational Expenses Through Service Assurance Process and Application transformation

Pulse2012

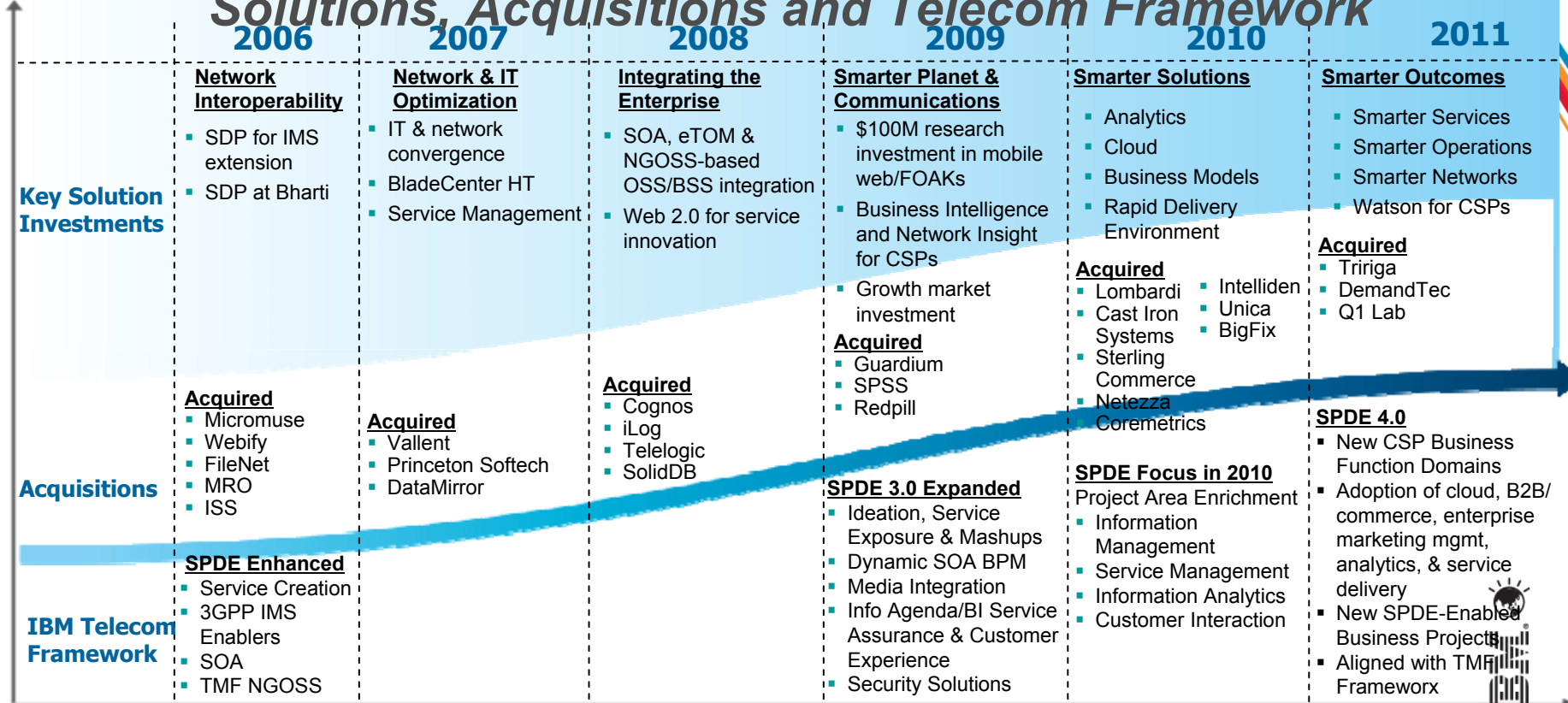
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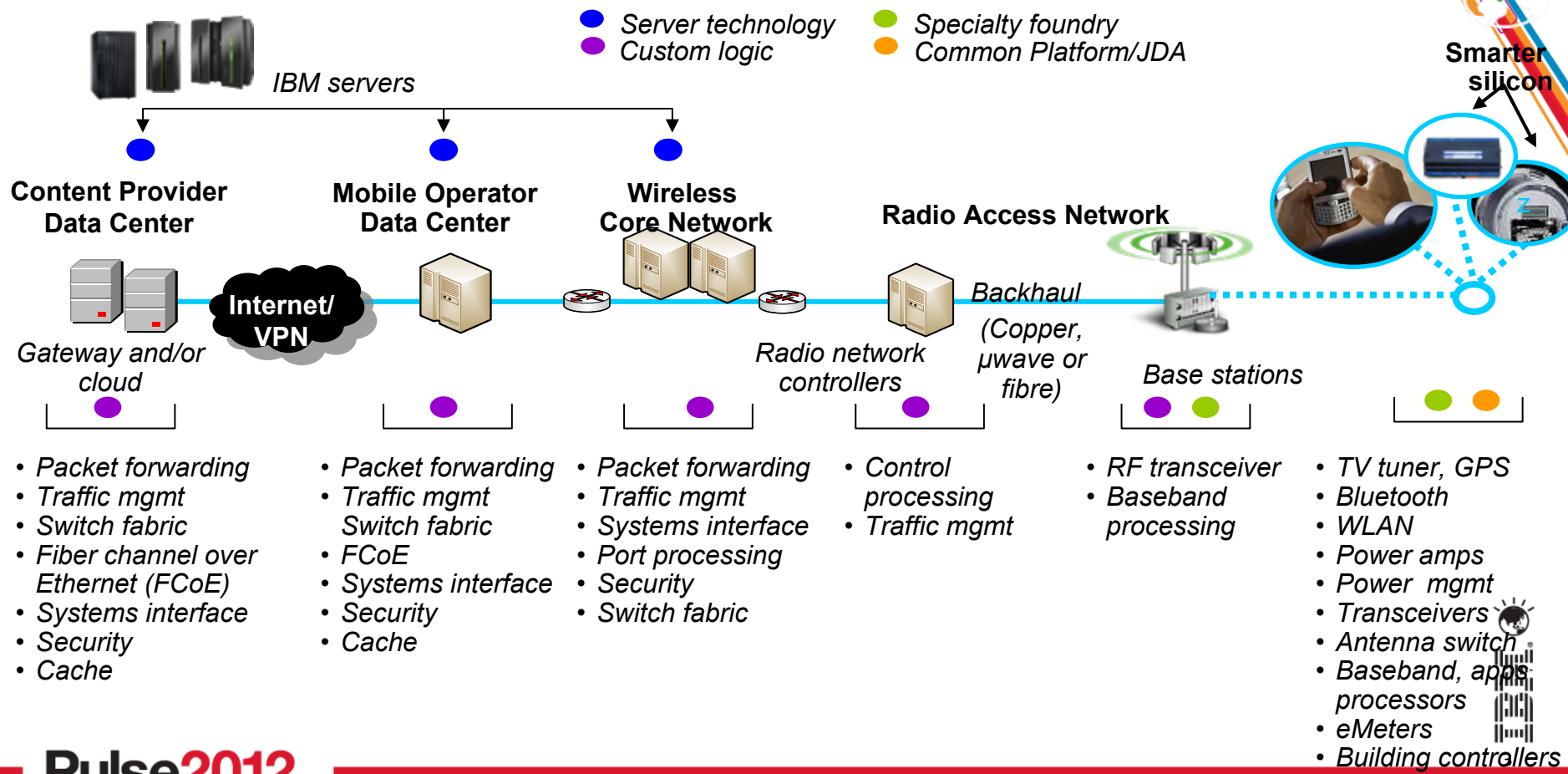
Sheraton on the Park Hotel, Sydney

IBM's telecommunications story is one of sustained industry investment visibly...

Solutions, Acquisitions and Telecom Framework



often invisibly... ~50% of mobile traffic passes through IBM silicon



- Packet forwarding
- Traffic mgmt
- Switch fabric
- Fiber channel over Ethernet (FCoE)
- Systems interface
- Security
- Cache

- Packet forwarding
- Traffic mgmt
- Switch fabric
- FCoE
- Systems interface
- Security
- Cache

- Packet forwarding
- Traffic mgmt
- Systems interface
- Port processing
- Security
- Switch fabric

- Control processing
- Traffic mgmt

- RF transceiver
- Baseband processing

- TV tuner, GPS
- Bluetooth
- WLAN
- Power amps
- Power mgmt
- Transceivers
- Antenna switch
- Baseband, app processors
- eMeters
- Building controllers



Investment includes an extensive and expanding global network of Telecom and Media & Entertainment resources and expertise

IBM Research

100+ IBM Centers of Excellence Worldwide

- 15,000+ subject matter experts
- Global Center of Competence for Telecom, Media, & Entertainment (GCTME)
- NGOSS/BSS, Converse and Oracle Centers of Excellence
- 8 Telecom Solution Labs (TSLs)
- 7 Software Solution Labs for Telco & Media
- 4 Industry Solution Labs with Telecom expertise
- 2 Media Solution Labs (TSLs)
- 3 Network Transformation Centers
- 5 cross-industry showcases with telecom expertise
- Industry Solutions Labs leveraging IBM Research



Innovation that Matters



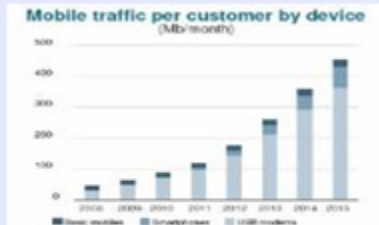
- Telecom is IBM's #1 industry research focus
- 100 staff years devoted to Telecom-specific projects
- 250 staff years committed to cross-industry projects
- Telecom is one of IBM's targeted cross-industry markets



IBM understands the Industry's Challenges

Data Growth

Smart Phone and Mobile Entertainment applications will drive **>10 to 30x** mobile traffic in next 6 years



Device Growth

Machine to Machine communication has become a multi-billion fast growing market, and will continue to grow 4x in 5 years



Mobile as a Platform

Mobile networks becoming a platform for applications: HTML 5, iPhone,



“By 2015, mobile Web technologies will have advanced sufficiently such that **half of the applications that today would be written as native apps will be, instead, delivered as Web apps.**” (Gartner 2009)

Enterprise and Consumer

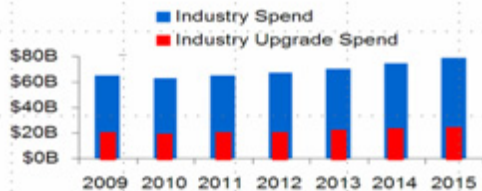
Future Wireless enterprise applications require Smart Apps at the edge of the network (Latency, QoS)



Smarter City, Smarter Healthcare
Smarter Utility

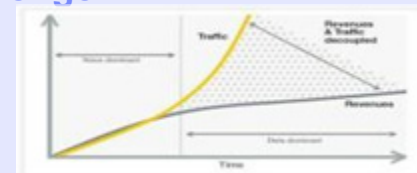
Investment Required

Industry budgets over \$120B in network upgrades over the next 4 years



Data Profitability Challenge

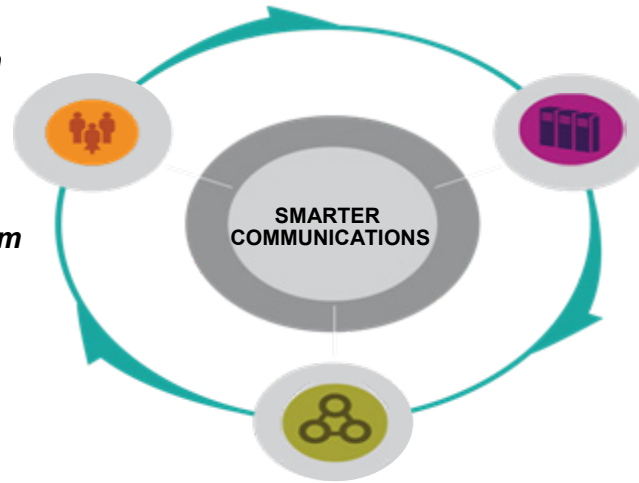
Transition from voice to data challenges profitability



IBM is helping Communications Service Providers meet these challenges, by enabling transformation of business models, operations, services, servicing, and customer experience

Deliver Smarter Services

- *Information Management Transformation*
- *Customer Lifetime Value Management*
- *Smarter Commerce Transformation*
- *Storefront, Portal & Partner Management*
- *Next-Generation-Service Delivery Platform (SDP)/Smarter Services Platform*
- *Cloud Service Provider Platform (CSP2)*
- *Vertical Market Services*



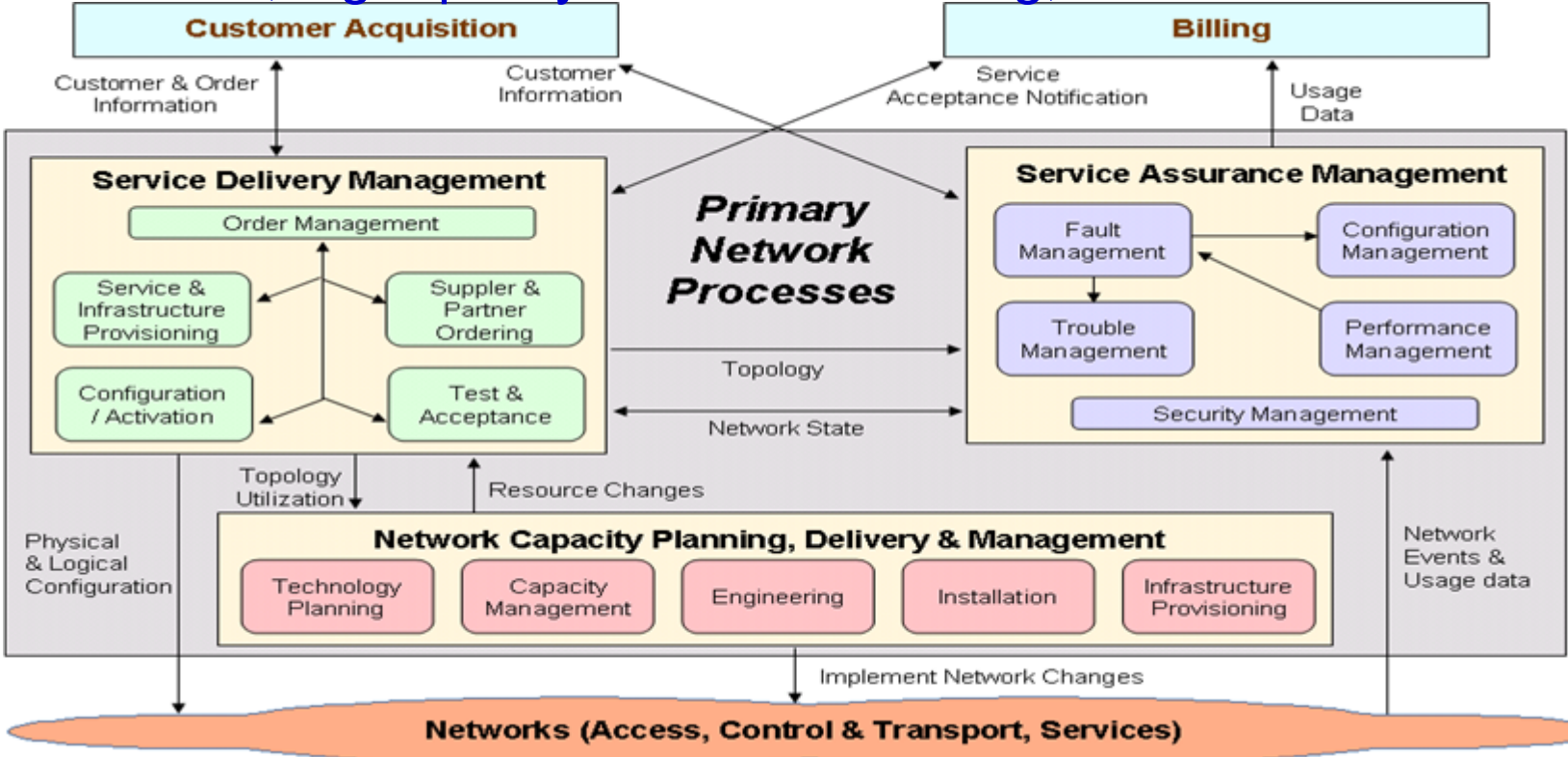
Transform Operations

- *Order to Cash Transformation*
- *Service/Network Assurance Transformation*
- *Order Management*
- *Service Assurance Solutions*
- *Revenue Assurance*
- *CRM Integration and BPO*
- *Digital Channel Transformation*
- *IT Transformation*
- *Cloud for the Telecom Enterprise*

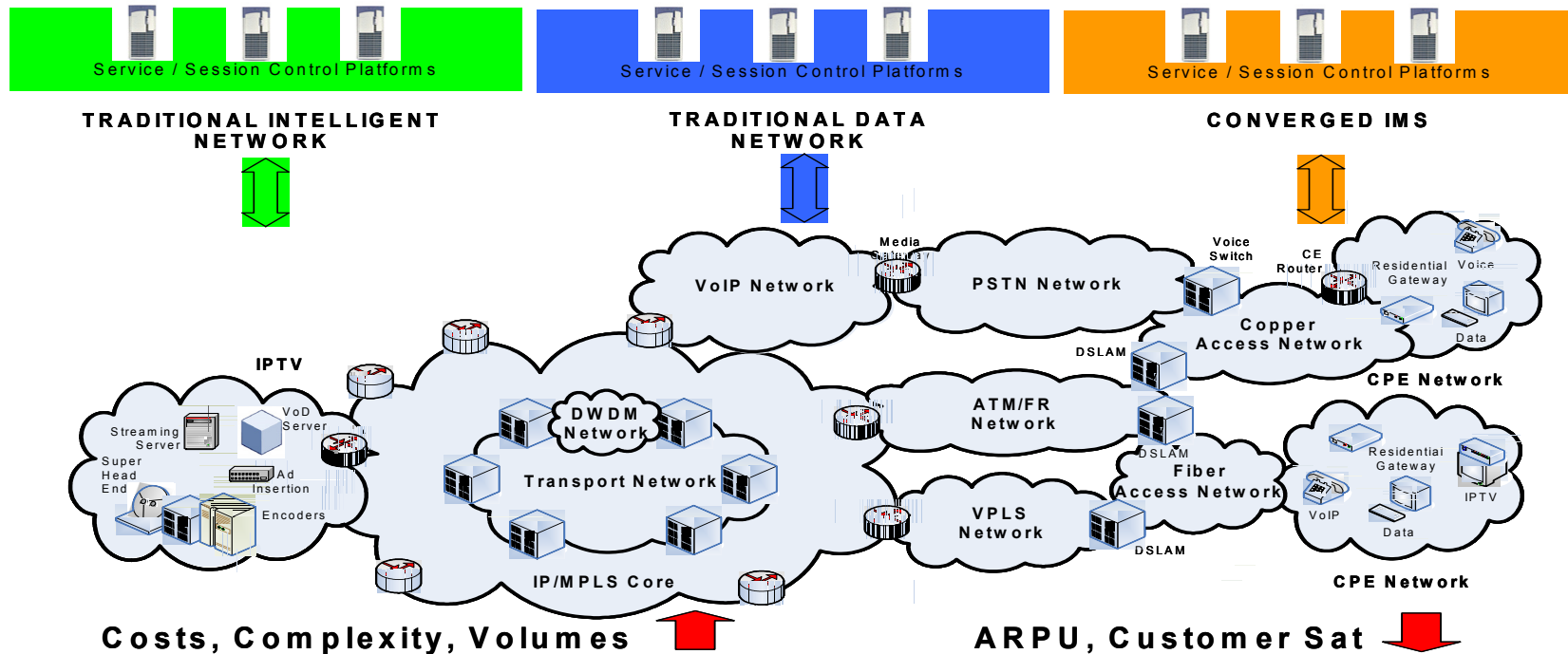
Build Smarter Networks

- *Intelligent Site Operations*
- *Intelligent Data Services*
- *Network Analytics*
- *Self-Organizing Networks*
- *Intelligent Endpoint Management*
- *Network Infrastructure Services*
- *Smarter Wireless Optimization*

Network Operations Processes are key enablers of “low cost factory” cost structure, high quality services/servicing, and customer sat



Operational Transformation: Complexity of managing customer services, E2E, across multiple network technologies, is growing, negatively impacting costs and customer experience



Operational costs for many CSPs are still inordinately high...

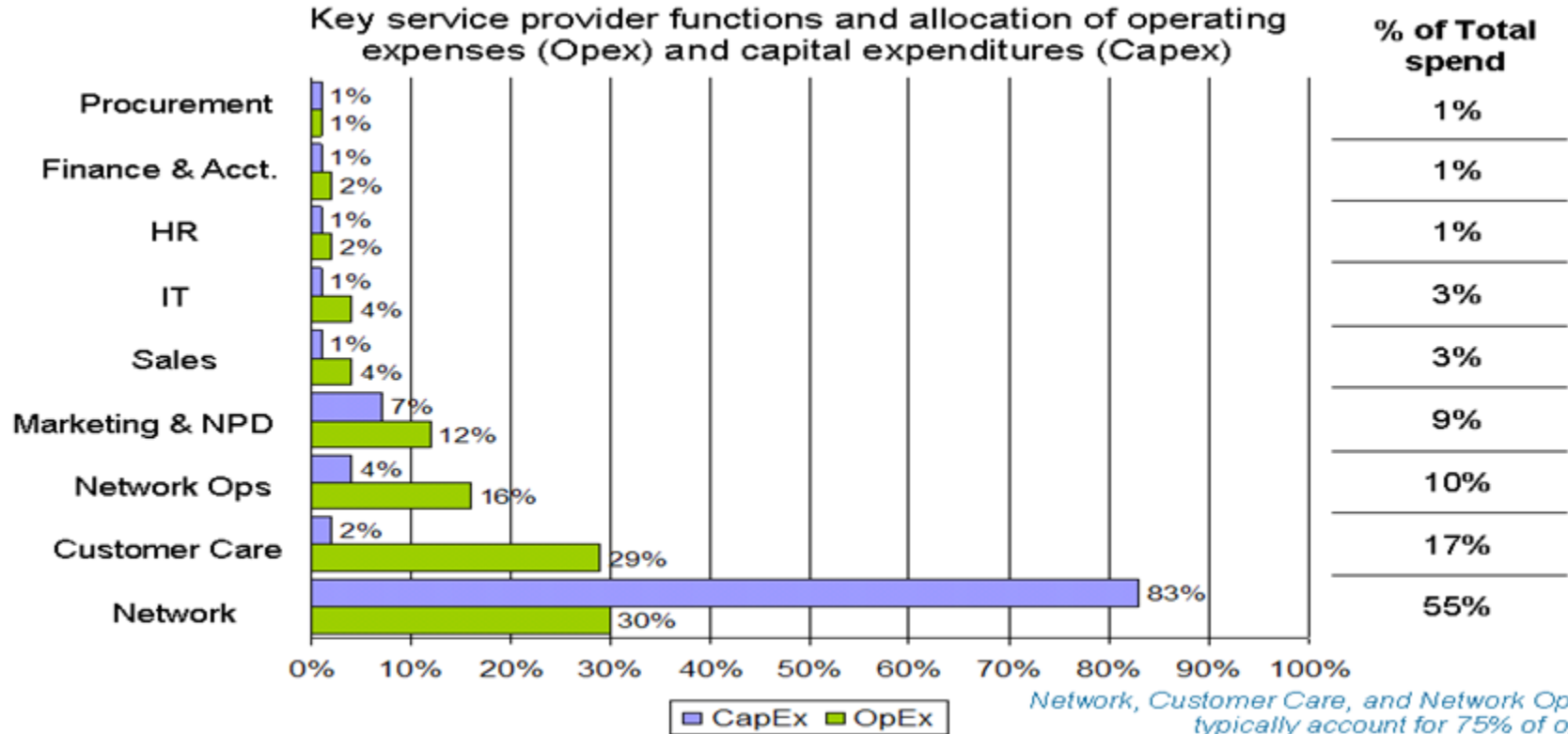
Functions	NOCs											
	Transport			PDVS					NMC-1			NMC-2
	NOC 1	NOC 2	NOC 3	NOC 4	NOC 5	NOC 6	NOC 7	NOC 8	NOC 9	NOC 10	NOC 11	NOC 12
Ticket Creation	M	M	M	P	M	P	M	M	P	M	M	P
Ticket closure	P	M	M	M	M	M	M	M	M	M	M	M
Hand offs												
Tier 1 to 2	M	N/A	M	M	M	M	M	M	M	M	M	P
Tier 2 to 3	M	M	M	M	M	M	M	M	M	M	M	P
Tier 3 to Vendor	M	M	M	M	M	M	M	M	M	M	M	M
Inter NOC handoff	M	M	M	M	M	M	M	M	M	M	M	M
Alert to NCC	N/A	M	M	M	M	M	M	M	M	M	M	N/A
Alarm Correlation												
Root Cause Analysis	M	M	M	M	M	P	M	M	M	M	M	M
Impact Analysis												
Eqpt to fac/ckt	M	P	M	M	M	M	M	N/A	M	M	M	M
Fac/ckt to svc	M	M	M	M	M	M	M	N/A	M	M	N/A	M
Fac/ckt to cust	M	M	M	M	M	M	M	N/A	M	M	N/A	M
eqpt to svc	M	M	M	M	M	M	M	N/A	M	M	N/A	M
Server to Appln	N/A	N/A	N/A	N/A	N/A	N/A	M	M	N/A	N/A	M	M
Alarm Capture and Notification	A	A	P	A	A	A	A	A	A	A	A	A
Alarm Thresholding	M	M	M	P	M	M	M	M	P	M	M	M
Testing												
Access Test	A	N/A	N/A	N/A	M	N/A	N/A	N/A	M	N/A	N/A	M
Backbone test	M	M	M	M	N/A	M	N/A	N/A	N/A	N/A	N/A	N/A
Sectionlization	P	M	M	M	M	M	N/A	N/A	N/A	N/A	N/A	N/A
E2E service test	P	N/A	M	N/A	M	N/A	M	N/A	N/A	N/A	N/A	P
Service monitoring	P	P	M	P	N/A	N/A	P	N/A	P	N/A	N/A	P
Scheduled Maint. Mgmt.	M	M	M	M	M	M	M	M	M	M	M	M
Network Restoration												
Alt. route generation	M	M	N/A	M	M	N/A	N/A	N/A	N/A	M	M	N/A
Alt. route configuration	M	M	N/A	M	M	N/A	N/A	N/A	N/A	M	M	N/A
Automated referral from NE	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	P
Customer-Specific SLA Rep	M	M	M	M	M	M	M	M	M	M	M	M

A = Automated
M = Manual
P = Partial Automation

- Single network ticketing system required to turn ticketing “hand-off” reds to yellows
- Topology-based correlation required to turn alarm “correlation” reds to yellows/greens



Network, Network Operations, Customer Care, and Marketing have the majority of Service Providers' costs and are key focus areas of IBM's solutions



Source: IBM Analysis

Transformation capable of providing annual benefits* totaling 10-20% of OpEx, and 12-22% of revenue... (4-8B OpEx, 5-10B Rev – 5 years – 17B€ CSP)

Transformation Benefit Opportunities for Telco Service Providers

Domain	Benefits / Business Outcomes		
	Cost reduction	Revenue uplift	Other
Order to Cash	6–11% of OpEx	3–4% of Revenue	50% reduction of overdue A/R, reduction of cycle time
Service / Network Assurance	2–5% of OpEx	1–2% of Revenue	Capability for differentiated servicing; reduction of MTTR
Service Innovation / SDP / IMS		8–16% of Revenue	80% reduction of new service time to market
Supply Chain (excl. Network)	1–2% of OpEx		3-8% of total spend, >20% of Inventory OpEx, 15-20% of Operation parts & repair
IT / AMS / Desktop Support	1–2% of OpEx		
Totals	10–20% of OpEx	12-22% of Revenue	

**Preliminary and illustrative – to be validated by formal assessment*

Service Providers can transform the end-to-end SA process to improve both revenue and cost efficiencies

Improvement Initiatives	Description	Benefit Drivers
1. Reduce customer churn and generate incremental revenues through superior service management and enhanced SLAs	The ability to deliver differentiated and improved SLA's should enable service providers to reduce churn and generate more revenues from new and existing customers	↑ Revenue
2. Reduce revenue lost from service downtime and SLA rebates	Increased automation and streamlined processes should lead to a reduction in SLA violations, which will impact both customer satisfaction and revenue losses	↑ Revenue ↑ Customer Satisfaction
3. Enhance zero-touch end-to-end automation	Implement tools to automate manual processes in both customer and network-facing processes	↓ Opex
4. Increase front-end resolution on customer troubles	Improve trouble entry systems to provide a "complete" view of the customer. Integrate testing / diagnosis wizards to enable customer care representative to do up-front analysis/diagnosis of problem. Integrate with network provisioning/activation systems to enable real-time corrections of customer records, billing records and network configuration	↓ Opex ↑ Customer Satisfaction
5. Outsource select customer and network-facing processes	Outsource select processes to achieve both productivity and wage improvements	↓ Opex
6. Enhance self-service usage and functionality	Provide enhanced self-service functionality to make the self-service channels as intelligent as the agent based process to prevent "low quality" tickets (e.g. trouble ticket status calls) from entering the back-office. Integrate testing / diagnosis wizards to enable automatic ticket creation upon confirmed service problems	↓ Opex
7. Reduce % of dispatches	Eliminate unnecessary dispatches through better up-front screening / analysis of work	↓ Opex

Service Assurance Benefits of the Transformation

Cost Benefits (% of SA Labor OpEx)

Zero Touch Automation

31.1% (conservative) 38.8%

Front End Resolution

6% 7.6%

Outsourcing Benefits

4.7% 5.8%

Self-Service Functionality

2.3% 2.9%

Reduce Repeat Dispatches & Calls

0.3% 0.4%

Estimations based on IBM Engagements in the Communications Industry

- 12-55% reduction in cust-facing, 15-85% reduction in network-facing assurance cost from zero-touch automation of E2E trouble management process
- 600% improvement in % trouble reports closed on 1st touch, 50% reduction in call backs for troubles not closed on 1st touch, 33% reduction in trouble reports referred to Tier 2 agents
- 35% reduction in wages, 10% productivity improvement from outsource of cust. Facing process
- 35% reduction in call center cost of service assurance calls, enabled by 50% of call volume handled by self-service
- 50% reduction in repeat unnecessary dispatches through improved diagnosis and fault resolution

**Opportunity to reduce 45 to 56% of labor related
NA/SA operating expenses**

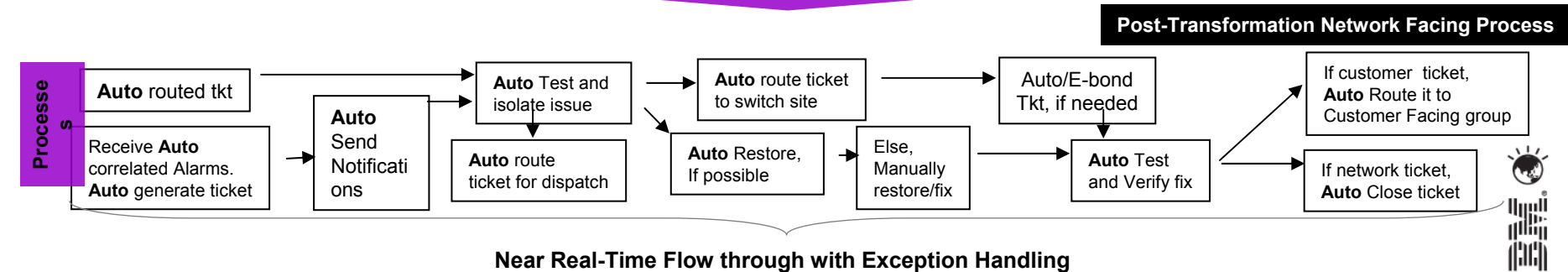
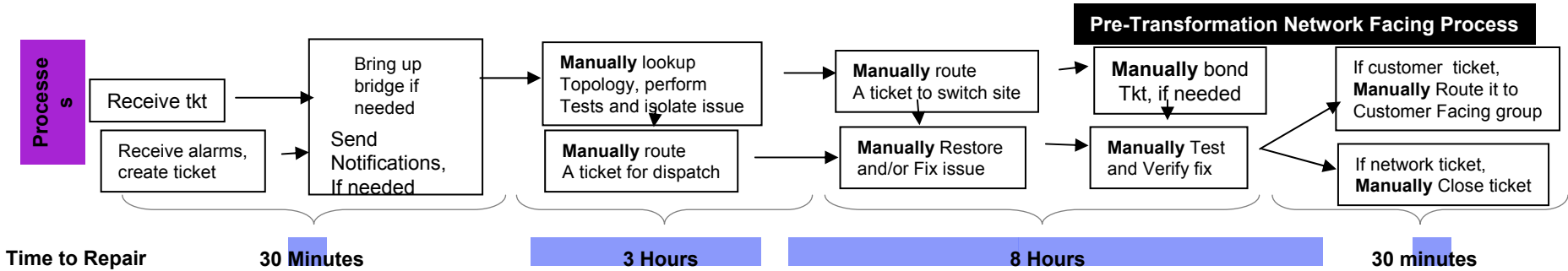
**Process/platform transformation improves efficiency
and customer satisfaction**

**Preliminary and illustrative – to be validated by formal assessment*

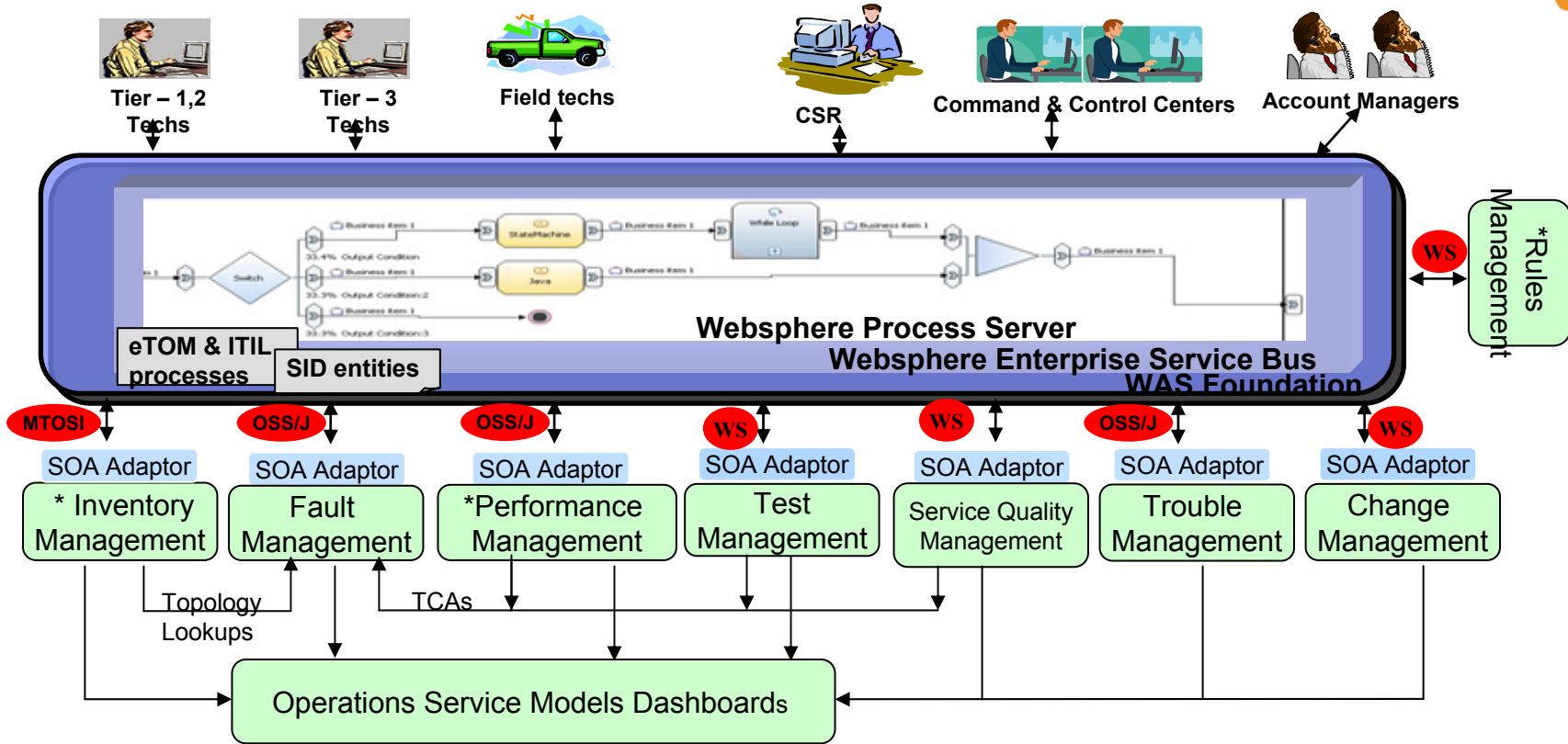
Example Service Assurance Transformation - Process

Enabling the processes to become more streamlined and automated

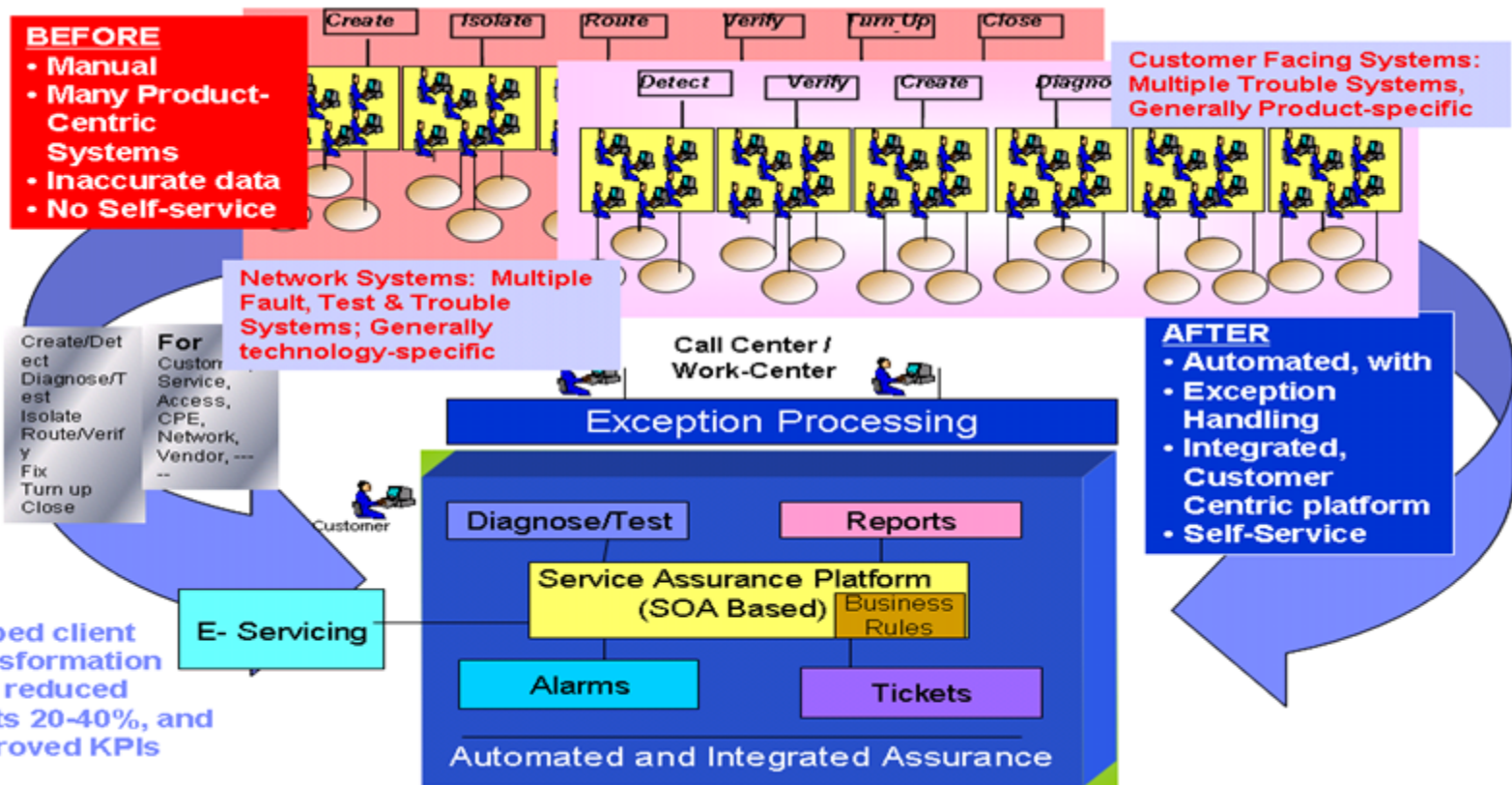
Illustrative Process Improvements



SOA-based Process Automation Architecture



Overview of the solution: Move from reactive, product-specific, servicing silos to a common, customer-centric proactive servicing model



Helped client transformation that reduced costs 20-40%, and improved KPIs

The company achieved large KPI improvements through the Service and Network Assurance improvements

✓ **Zero Touch automation for Trouble Management**

- IVR and WEB access for trouble reporting
- Automated Electronic Bonding with Access Providers
- Automated customer Status and Turn-Up

✓ **Flow Through automation for Trouble Isolation**

- Automated business logic
- Knowledge based rules for trouble isolation
- Automated Network Testing

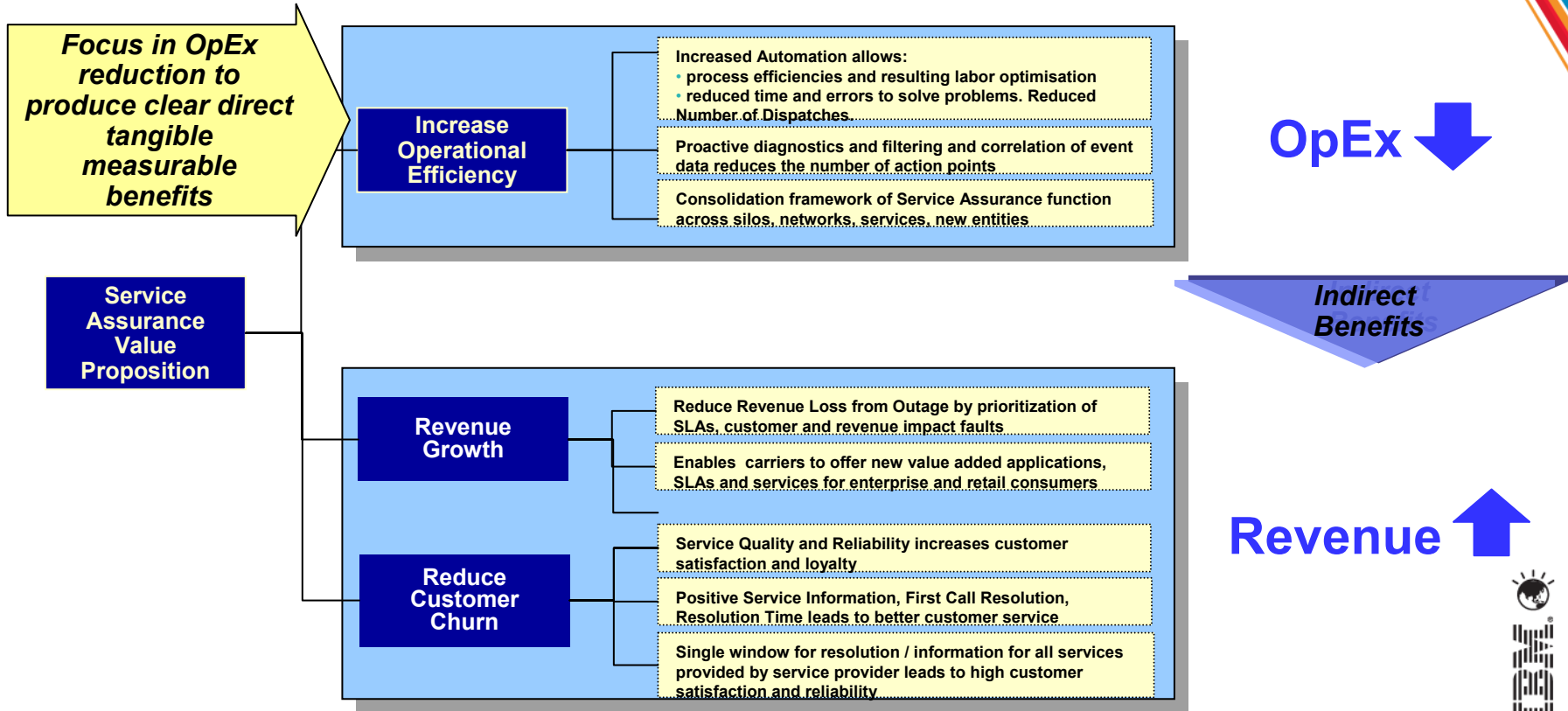
✓ **Automated Pre-Service testing of circuits**

KPI Improvement with Automation/Flow Through

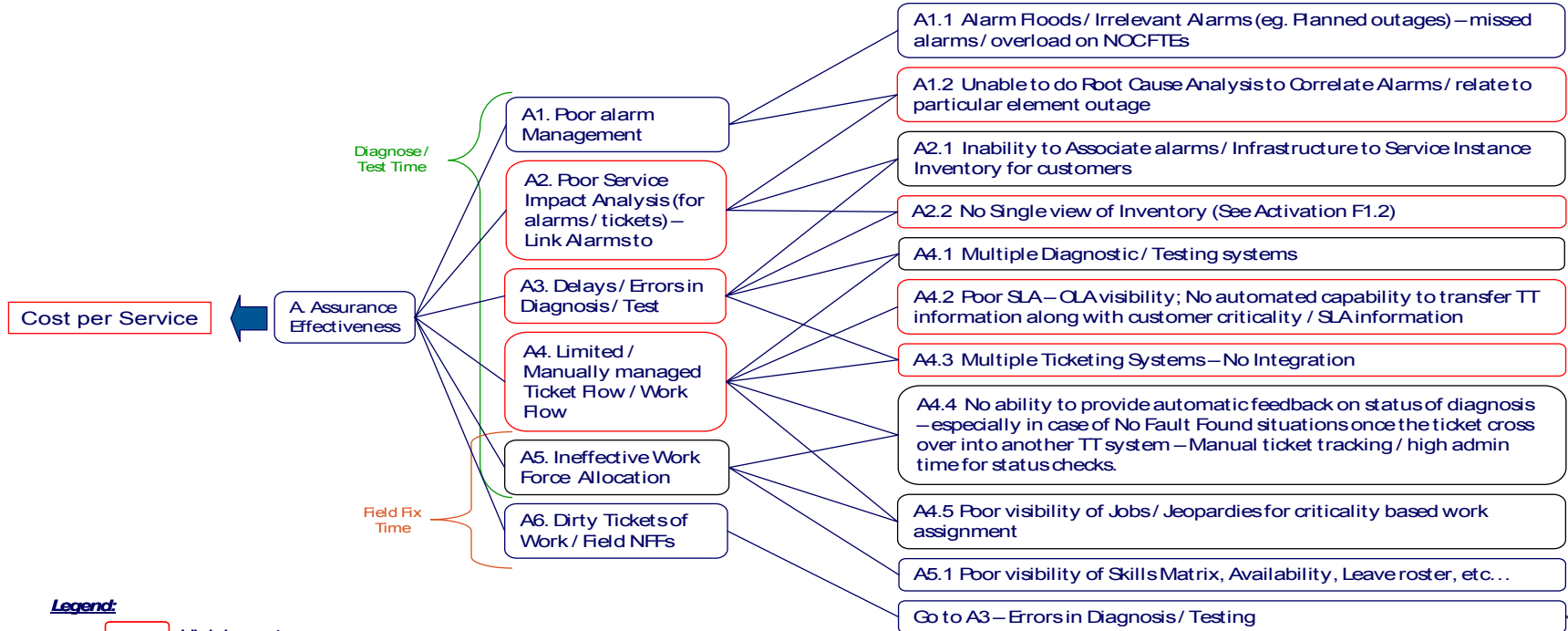
- **40%** troubles cleared through Zero Touch
- **91%** of the reported troubles < 4 hours of MTTR
- **60%** reduction in Care Centre calls for troubles
- **74%** trouble referrals via Electronic Bonding
- **90%** Pre-service Testing automated
- **80%** of customer status done automatically
- **75%** of customer turn-up done automatically



Service Assurance Value Propositions



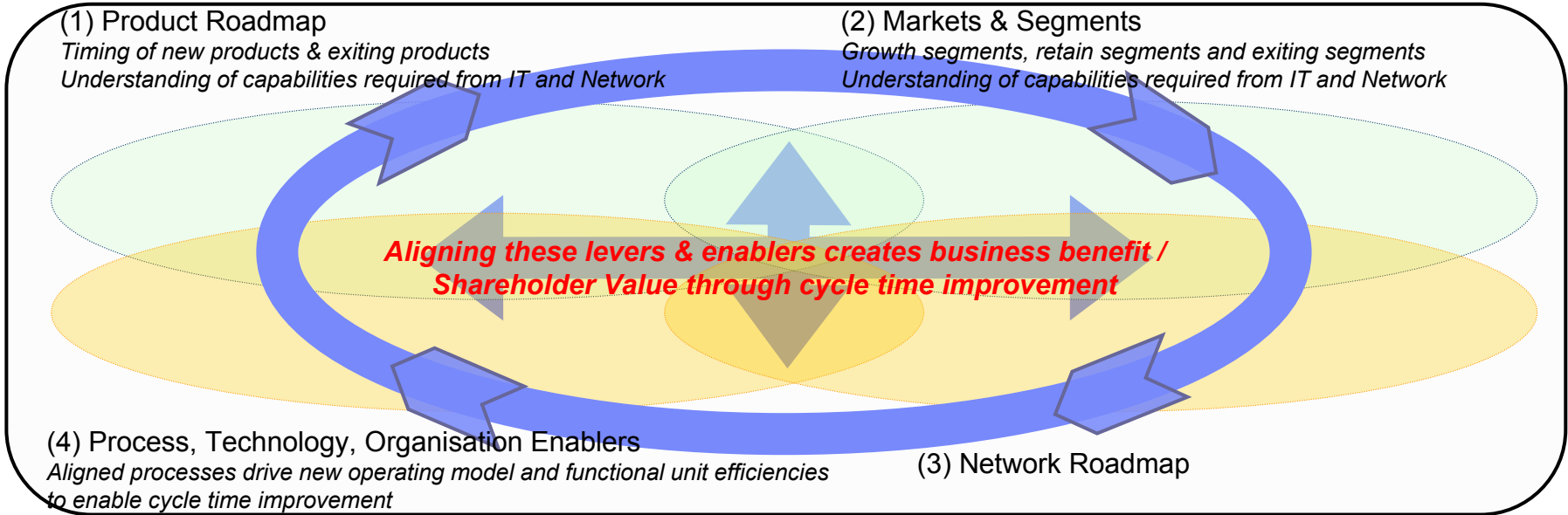
Example value driver tree: What drives poor assurance?



Legend:

- High impact
- Medium impact
- Low impact

Conceptual approach to Strategic OSS aligns the levers and enablers of Transformation to achieve cost & cycle time objectives



Strategic Levers – Decisions have been made, objectives have been set

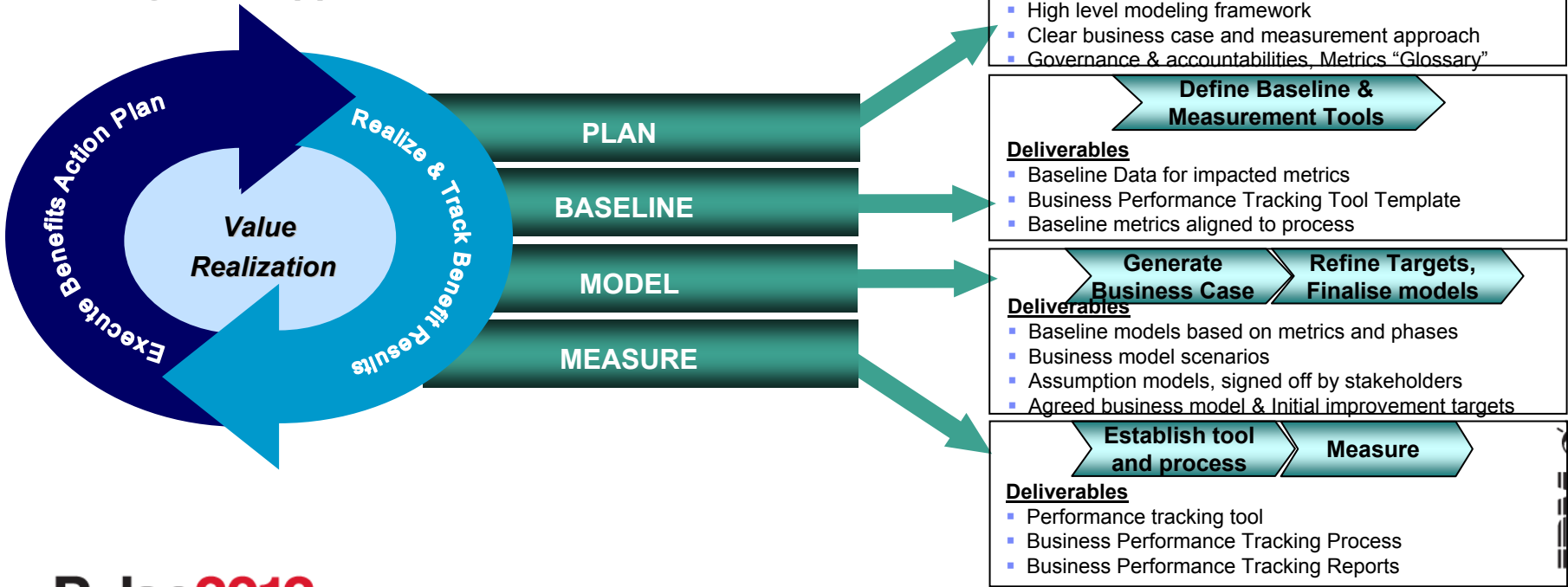
- (1) Product Roadmap (entry and exits)
- (2) Markets & Segments (retain, new, grow, decline)

Strategic Enablers – Essential to support the objectives we seek to achieve

- (1) IT Roadmap AND Process & Best Practices – ensure the new org is set up for the long term
- (2) Network Roadmap

Business Case Realization will define, track and measure programme value against the desired Business and Financial Outcomes

Business Case, Benefits Approach and Governance Integrated Approach & Deliverables/Milestones



Ingredients Of Typical Transformation Plans

Based on our experience, successful transformation has 3 key phases:

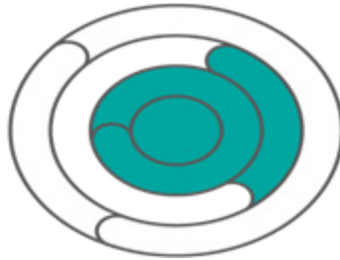
1. Defining A Clear Transformation Strategy
 - Understanding current state and prioritized list of business goals
 - Identify available performance improvement levers
 - Create an holistic Transformation Change Program across People, Process, and Systems – Rationalize, Simplify & Reorganize
 - The program should support the retention of top performers
 - The program should be phased and managed based on outcome priorities
2. Executing well-defined subset of the overall transformation plan
 - Get some quick wins
 - Gain an understanding of organization's execution capability, governance, program management, change management, etc.
 - Realize and validate the planned transformation goals
3. Re-invest benefits gained from transformational changes to create a self-sustaining transformation plan



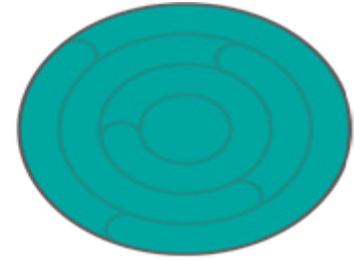
Start with a solution and build upon it over time to achieve a simplified, flexible and lower-cost infrastructure.



1 Choose a project and implement it to achieve immediate ROI.

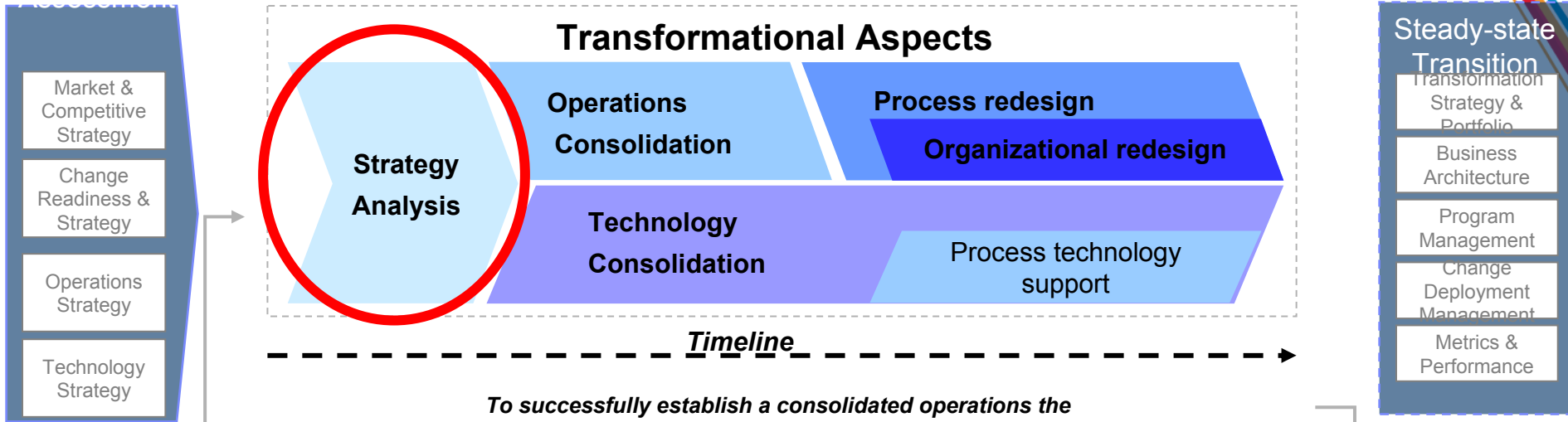


2 Build on the value of previous projects, reusing assets and implementation patterns.



3 Achieve a simplified, strategic infrastructure.

Transformation Approach



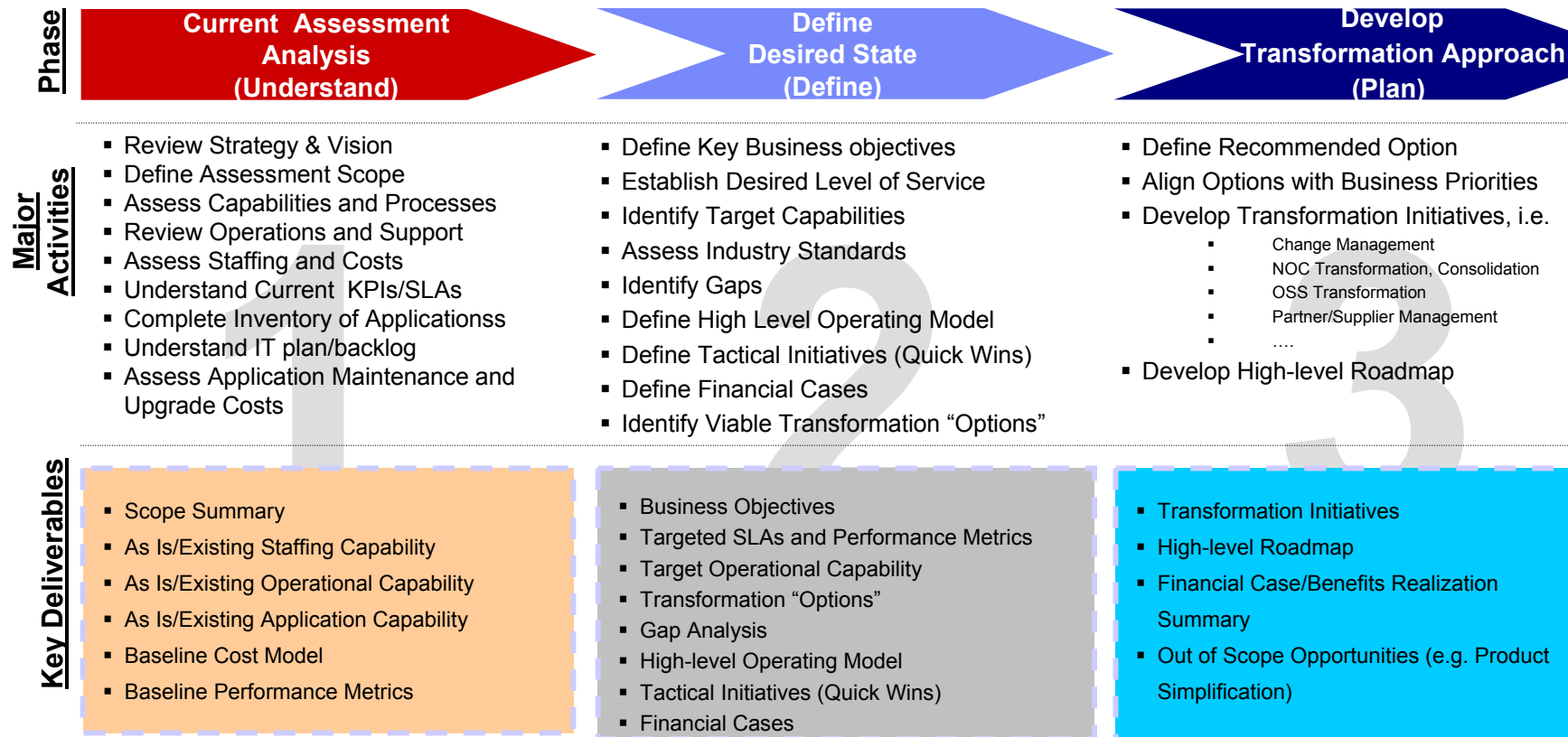
To successfully establish a consolidated operations the transformation must be conducted in distinct stages.

If the total complexity or the number of existing operations was high an iterative approach only consolidating a limited number of operations in each step was suggested

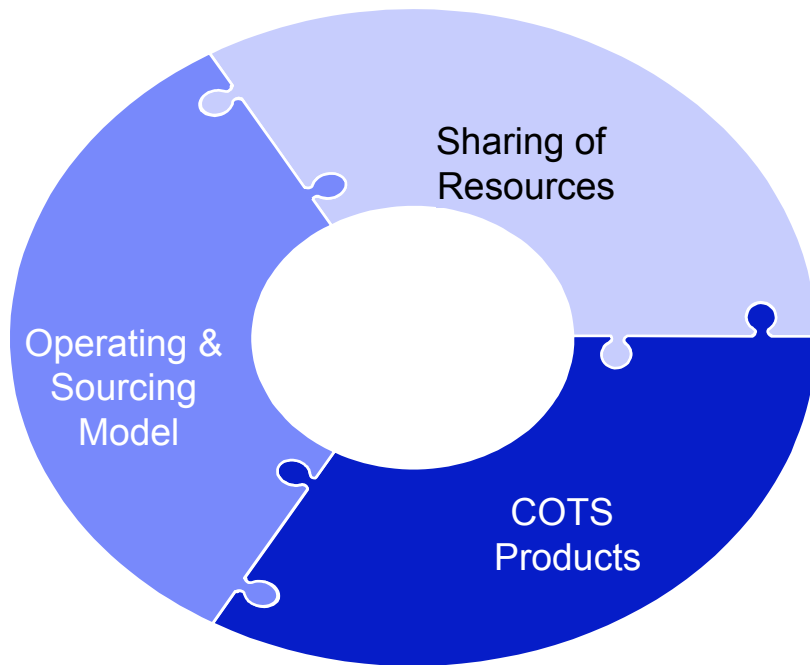
The business benefits are achieved through a series of key mechanisms:

- Focus on core processes and industrializing of these
- Improved automation and simplified technology support
- Organization and technology designed to support the core processes

Create an understanding of a service provider's current/target state, establish the business case for change, and define the roadmap for transformation



IBM combines its capabilities of the 3 levers in a unique way to achieve an optimum of efficiency and effectiveness of OSS Assurance



- Flexible Cloud based delivery and deployment models
- Wide range of attractive Business models

- Kernel implementation in central competence center
- Sharing of standard components

- Built around Industry Leading Tivoli Netcool/Omnibus , these capabilities are critical to reduce the amount of time spent in root cause analysis.
- Standardized ITIL & eTOM Processes & NGOSS interfaces
- Leading Big Data/ Information Mgmt technologies integrated to provide real time Customer, Service and Resource Monitoring



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